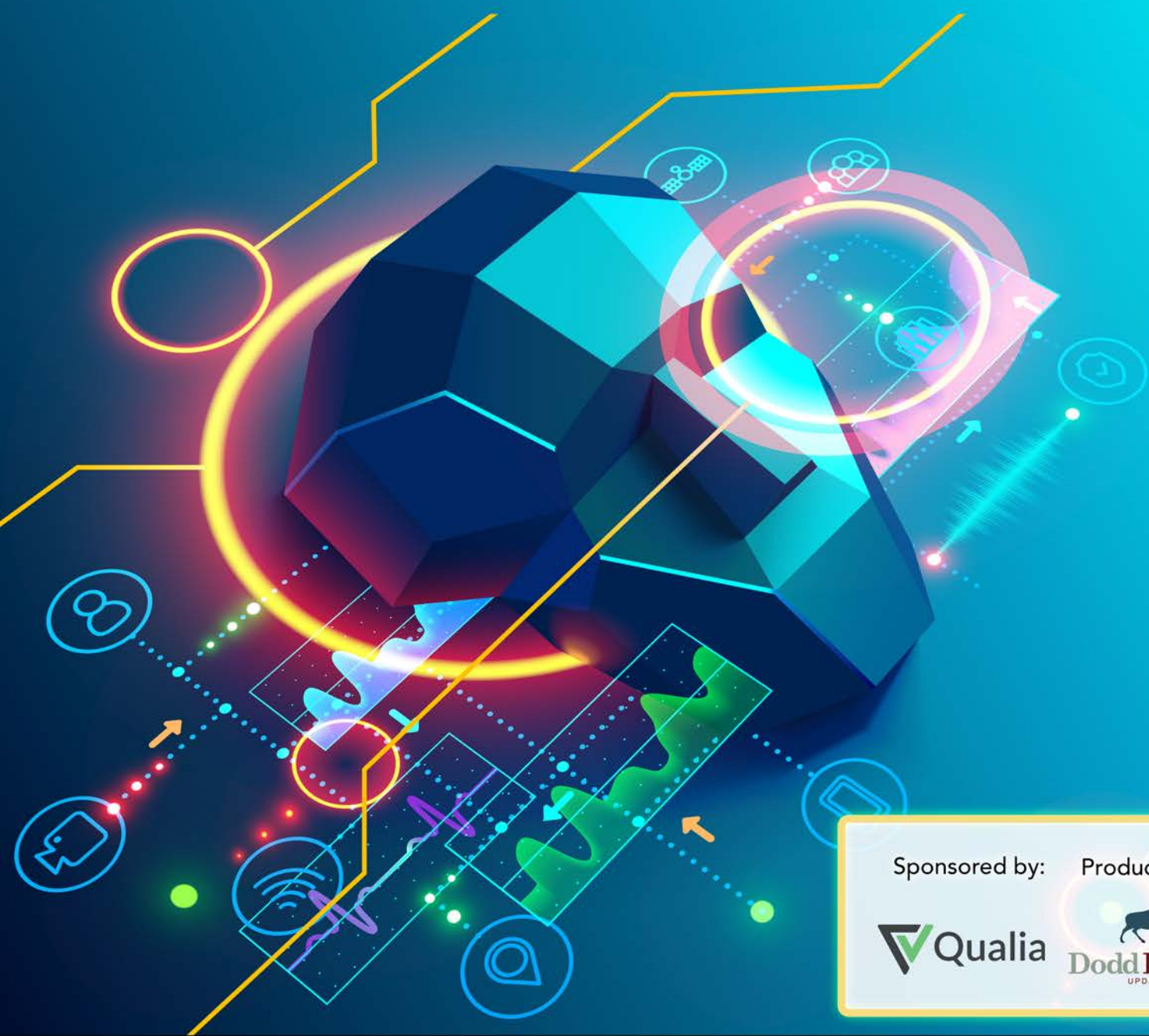


# Optimizing AI & Blockchain

## For the Future

special report



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# EDITOR'S NOTE

## The future is now

Dear Readers,

Artificial intelligence, machine learning, blockchain, tokens, cryptocurrency. It can make one feel like we're living in some science fiction movie. But, alas (or maybe fortunately), that is not the case. These tools are being implemented now in the mortgage and real estate industries, and they are shaping how we're doing business today, and in the not-so-distant future.

This report highlights the thoughts and perspectives of those leading the way in artificial intelligence and blockchain usage. Whether it is using AI to underwrite and service loans more efficiently, using blockchain to increase transparency, or using algorithms in lending to reduce bias and discrimination, there seems to be no place where these digital tools have not found a home.

My takeaway from this report is there is definitely a ways to go before this industry becomes fully automated, if it ever will. Like **Corey Smith**, chief procurement officer for FirstClose, says, this is a service industry. There will always be a need for people. However, for AI to reach its full potential, there are pieces such as stakeholder collaboration and openly-sourced regulations and standards that need to fit together just right for innovation to continue.

In closing, I would like to thank Qualia for sponsoring this report. It has been a great dive into an interesting topic.

Stay in touch (but socially distant),

Elizabeth C. Childers, Esq.  
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## Using AI in the Mortgage Process

Artificial intelligence (AI) seems to be such an abstract concept, with limitless uses in today's digital world. The mortgage and real estate industries are no exception. But what exactly is AI? The answer is not exactly straightforward.

**Ryan Abbott** is a professor of law and health sciences at the University of Surrey and is highly regarded for his writings on issues associated with law and technology, health law and intellectual property. He is the author of "The Reasonable Robot: Artificial Intelligence and the Law" and has published in leading legal, medical, and scientific books and journals.

"It's pretty remarkable really that 60 years after the term [AI] was introduced, we still don't have a good definition of it, or at least one people widely accept," Abbott said during a symposium hosted by Washburn University School of Law on artificial rights.

"I see AI very broadly and very functionally as — along with its earlier definition — if you see a machine doing something that a human would do, and that would be intelligent, that is machine intelligence, or artificial intelligence," he said. "And what we're seeing now, today, is that AI has been able to do a lot of things that people can do for a long time, but it's getting better, cheaper and faster at doing it. It is getting to the point where we are likely in the next few years to start seeing AI taking over a greater number of tasks people used to do on a commercially relevant scale."

In the mortgage and real estate industries, AI has been doing just that. Many tech companies that specialize in AI solutions are offering products that will lead to a new way of doing things faster, cheaper, and with less errors.

Austin, Texas-based FirstClose has provided technology solutions for mortgage lenders since 2000. According to its website, the company services over 250 banks and credit unions and processes hundreds of thousands of transactions annually.

"FirstClose offers a variety of solutions to our clients that embrace artificial intelligence, from document scanning and data extraction, to data extraction from multiple sources, document classification, and automated decision making based on different loan scenarios," FirstClose Chief Procurement Officer **Corey Smith** told *Dodd Frank Update*. "We also use intelligence in our systems to further streamline the loan fulfillment process for our lenders by applying smart technology to our processing queues, which significantly reduces the number of human resources needed to process, track, communicate and correct any errors on settlement services processed through our FirstClose ONE system."

Smith said FirstClose has two categories of information that must be identified correctly when approving, underwriting, processing, and funding a loan: borrower information and collateral real estate



information. Both are equally important, he said, and need to be verified and validated for accuracy. The question becomes, how efficient can a lender accurately verify and validate both the borrower's information and the collateral property characteristics?

"The sheer volume of documents that must be analyzed and reviewed for each loan makes this an exhaustive and mind-numbing task for any mortgage team processing real estate loans," he said. "The traditional mortgage industry response to this problem has been through the addition of human capital. Unfortunately, this approach happens to be the most expensive, least efficient, and most prone to error — adding expense on top of expense."

"That is where property and borrower data intelligence come together," he continued. "We have never had more access to information than we do today, and this access continues to grow as smart innovation expands our capabilities."

Though access is expanding, Smith said this raises more questions with what to do with all this information, particularly conflicting information from disparate systems and sources.

"For the borrower, these systems can safely and securely look at application form data, augment it with credit data, automatically read and extract data from digital images of driver's licenses, securely cross-reference with banking and employment information to determine the most accurate dataset that best represents the borrower," he said. "A similar approach is used to verify and validate the collateral property data, using intelligent systems that read, interpret and classify important real estate title documents, text and valuation data. This approach drastically decreases the manual process of scanning paper documents and significantly reduces the dependence on paper and manual validations and compresses the time to close and fund a loan."

Advantages to using AI include a significant increase in productivity and improved efficiency of the loan

approval and fulfillment process, Smith said. This allows for more loans to be funded in a shorter period of time, without having to increase human resources, and can result in lower origination costs for lenders and consumers.

"It will naturally bring an improved digital experience, something closer to their most recent retail shopping experience — we call it 'the Amazon effect,'" Smith said. "Consumers will receive more transparency into the mortgage lending process, they will better understand the products for which they qualify, and it will give lenders the ability to find them the best product that fits the consumer's needs, in real-time. Origination costs will be decreased as mortgage lenders can pass the savings they have enjoyed through increased efficiencies and productivity gains onto the consumer."

AI will offer financial institutions and mortgage lenders improved internal relationships, as well as external ones with consumers, loan officers, real estate agents, brokers, appraisers, and title and closing agents. Technology such as chatbots and interactive dashboards with real-time data analytics and predictive modeling

to forecast the timing of each part of the loan process will help enhance communication and further build these connections.

"And these innovations are becoming easier to bolt-on to existing tech-stacks, allowing financial institutions the freedom to choose where they want to begin their processing and efficiency gains," he said. "As the mortgage industry implements these new smart technologies, the days of having to do a massive overhaul of core banking or loan origination systems just to increase their application and loan pull-throughs will quickly fade away."

One may be concerned about whether AI can be cost effective, as many of these tech solutions have high implementation costs. However, Smith said the expense of AI technology and the advantages that

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**It is getting to the point where we are likely in the next few years to start seeing AI taking over a greater number of tasks people used to do on a commercially relevant scale.**

**Ryan Abbott,  
Professor of Law and Health Sciences,  
University of Surrey**

come with it outweighs the traditional costs of human resources and manual processes. With AI systems, institutions are able to process more loans more accurately, more securely, and at a lesser cost.

Some also may be concerned how integrating these systems can affect the number of available positions in the industry, as AI is able to do the same review with fewer errors. Smith said though there will likely be a shift in where financial institutions invest their human capital, it is probable the workforce numbers will probably stay the same or even increase.

“The mortgage industry is still a service industry,” Smith added. “You cannot take the human touch and replace it with automation and AI. Where you find efficiency wins around automating the application, approval, and loan fulfillment process, financial institutions will increase staff at the front of the funnel to bring more business through their highly efficient organization and add more programs and support personnel to maintain customer satisfaction. In fact, the more streamlined a financial institution becomes in processing mortgages, the more business will come to them as they build brand equity with their improved customer experience.”

One thing is for sure: AI solutions are here to stay and are being used to improve the mortgage and real estate industries. Currently, it is being used to increase operational productivity, and will improve

processing inefficiencies found in loan application user experiences, loan approval, and fulfillment. But as time goes on, Smith said other goals for AI solutions could be to improve communication barriers between the various roles in loan origination and servicing and reducing the cognitive fatigue placed on loan teams. The primary goal, he said, is a better user experience for everyone involved.

“AI has a bright future in the mortgage and real estate markets, these are exciting times,” Smith said. “The operational inefficiencies in the mortgage industry requires significant changes that extend far beyond AI solutions.

“The industry must take a blended approach by focusing on the processes that can be augmented using technology and realign their workforces to work alongside and interact with these technologies,” he added. “That blended approach includes bringing together the human knowledge and insight of the industry to improve workflows, better user experiences, more transparency, security and fairness, all by leveraging digital connectivity, modern UI/UX [user interface/user experience], secure cloud computing and AI to create a better lending experience for all users in the mortgage chain. AI is simply a contributing member to improving the mortgage lending experience, we must work with these systems to create a better experience for everyone.”

## How Blockchain promises to alter mortgage landscapes

To put it simply, blockchain is a digital record of transactions. Individual records are stored as blocks, and each block has a unique ID code, known as a non-fungible token (NFT). The blocks are then linked together, as if it were a chain. Typically, it is used for recording cryptocurrency transactions. However, its use is being explored in many different applications, including in the mortgage and real estate industries.

“Blockchain is effectively a distributed ledger technology that a group of participants manage, by working concurrently in order to create this unified, but decentralized network,” **John Levonick**, the CEO of Canopy Financial Technology Partners, said. “This network of participants permits peers to transact, and it requires the specific proportion of community

of participants to validate the individual transactions via a consensus algorithm.

“This means that there is no single central authority determining if a transaction is valid or invalid, but that it requires validation by a specific number of participants that are able to prove, via the consensus algorithm that the transaction is in fact valid,” he continued. “These validations are timestamped and recorded in an immutable manner, which effectively creates the undeniable power of blockchain. Decentralized (wholly or partially, depending on public or private type), transparent, immutable and secure.”

Canopy, based in Charlotte, N.C., provides due



diligence and quality control for secondary mortgage market transactions using emerging technology transactions to increase efficiency and transparency for its clients and counterparties.

Blockchain is different from other forms of databases, which are effectively centralized, modifiable, and corruptible data stores built to suit individual uses through the connection to a separate, centralized processing unit, Levonick said.

“For example, a database may be utilized as a company’s data storage facility, subject to the unique naming conventions, organizational requirements and requirements of that specific, and probably very customized, external centralized processor (client/server),” he said. “Specific databases can be configured to have elements of a blockchain, such as write once, read many capabilities, and can be backed-up or replicated to offset corruption risk, but databases will always be centralized and subject to the authority of a single or set of administrators.” Levonick said he has seen a few interesting projects and commercial uses for blockchain.

Figure Technology, he said, appears to be leading the way in time to market with mortgage origination and creating a backend marketplace for trading on Blockchain. Liquid Mortgage has raised capital on an early-state strategic business plan to build a mortgage ecosystem, and a large capital markets bond issuer has entered into a strategic relationship with the company. In the title insurance space, Ubitquity has launched an enterprise-grade blockchain platform with a client.

**Nathan Wosnack**, founder and CEO of Ubitquity, and **Wesley Williams**, vice president of product, said they are not seeing much in the current use of blockchain for the mortgage and real estate industries.

“I see a lot of people with good intentions, but nobody’s figured out really how to integrate blockchain into the current mortgage and real estate settlement systems,” Williams said. “You’ve seen some people with tokenization ideas, but it’s basically the same old securities in a digital format.”

Wilmington, Del.-based Ubitquity offers a Blockchain-as-a-Service blockchain platform, ecosystem, and application programming interface called unanimity to help title companies, municipalities, and other clients establish clean records of ownership, saving them future title search time while also increasing confidence and transparency.

Wosnack and Williams said one of the advantages to blockchain is that it is, as Levonick said, an immutable record.

“In our current system, everyone maintains their own database, right?” Williams said. “So, you have to reconcile between databases to confirm. And there’s a lot of double entry because everybody’s inputting information into their own database. There’s not a whole lot to share or collaboration because everyone is using their own database.”

Wosnack pointed out one of the weak points with these individual databases is the risk of the data being hacked and corrupted in a way that is hard to detect over a period of time.

“One of the traditional attack vectors have been a hacker or group of hackers would break into a database and then slowly corrupt it over time, which would allow them to slowly corrupt databases, leaving the company completely useless, with their backups,” Wosnack said. “Their backups would be corrupted, but it’d be done in such a slow manner that people wouldn’t notice. And so that’s actually an attack vector that has existed for over 25 years, 30 years, probably.

“So, the blockchain allows you to have an immutable record, even in parallel.”

Wosnack and Williams said other advantages to blockchain integration are more collaboration and transparency in the title insurance and settlement space. Everyone would see a single ledger and agree as to the state of the transaction and where



the money flows and to whom it goes. Then the information is encrypted.

“The true value, and ultimately the challenge of the specific use of blockchain in consumer finance, in particular mortgage lending, presupposes that the manufacturing of the mortgage can be conducted in a defect free manner,” Levonick said. “The single use case in mortgage, as it relates to the manufacture, is the concept of trusted data validation and storage value.”

**Rick Roque**, founder and managing of Menlo Capital, a Moretown, Va.-based company that specializes in mortgage banking, setting up servicing platforms, growth and application processes for government-sponsored enterprise approval, mergers and acquisitions, and partnerships, also highlighted transparency as a benefit blockchain integration.

“The advantages [of using blockchain] are transparency, confidence, validated data and a more visible marketplace where investors can acquire assets and then trade them with greater confidence,” Roque said. “Rather than taking weeks or months to sell assets, on a tokenized global environment, it will take minutes if not seconds.”

However, Wosnack and Williams said some blockchain services can be expensive and are still susceptible to what is called a “51 percent attack,” where hackers gain control of a majority percentage of the computing power or hash rate, giving the hackers the ability to block new transactions from taking place or being confirmed.

As work moves forward for blockchain, there appears to be several factors in play before the technology can really be rolled out.

“If the manufacture of the mortgage can be fully transparent, the calculations or determinations of credit can be objective and validated to meet external guidelines through a consensus mechanism, and

the data that is sourced for the manufacture, and its derivative data can be validated as accurate and stored securely, then blockchain might be able to find a solid use case in mortgage,” Levonick said. “As for transfer value, we are a ways out on the ability to create a true digital asset, meaning that a mortgage can exist purely as data and code... but once we are able to fulfill that futuristic capability, blockchain as transfer rails will be a suitable solution as well.”

Roque said issues with implementing blockchain include regulations, a resistance to change, and any security threats that could be associated with the ledger and blockchain itself. Despite these challenges, he estimated blockchain could be used as an industry standard within the next 10 years.

While educating the industry about the benefits of blockchain is important and can help with acceptance, Williams said it is up to the industry parties to take the initiative and implement blockchain. In order for blockchain to become an industry standard, he added, the mortgage, real estate, and title industries, as well as counterparties, would have work together.



“Blockchain is all about collaboration,” he said.

Wosnack also mentioned another hold up could be attributed to how standards for blockchain use are currently being developed. In order for blockchain to be implemented on an industrial scale, these standards have to be accepted. The problem is, Wosnack said, these standards will not be adopted unless they are open standards to which everyone can agree.

“We believe that the standards are going to come from the IEEE [Institute of Electrical and Electronics Engineers] or the open standards of request for comments [by the Internet Engineering Task Force], things like that,” he said.

Levonick did not give a temporal timeline for the





potential use of blockchain as an industry standard. Instead, he said the universal implementation of blockchain will be dependent on the industry itself, and whether it concedes the fact there does not need to be several different ways to originate a mortgage.

“Our dependence on the enterprise level ecosystems created by LOS [loan origination service] providers, and the lack of technological sophistication by 99 percent of mortgage industry participants is impairing adoption of blockchain,” Levonick said. “Blockchain provides for low maintenance interoperability between disparate applications, and the presumption is that the transfer of data should not be controlled by a single centralized authority, especially one that is seeking to monetize the ebb and flow data with pay-to-play interoperability.”

“Once we can agree that a mortgage is a widget, that has publicly identifiable specifications, and does not require customizable ways to manufacture, we can agree on a standardized manufacturing methodology, then maybe, just maybe, blockchain will become a viable alternative,” he added. “The industry will finally realize the value of blockchain once a hypercompetitive vacuum is created by a mortgage ecosystem (pulling for you Figure and Liquid Mortgage) that reduces the cost to originate, sell, and service a loan that people can no longer afford to not be on it.”

So, what does the future of blockchain in the industry look like?

“We’re going to see more sharing of data amongst counterparties, collaboration amongst the industries,

and then you’re going to see some new and interesting financial products coming out of deep buying, which you’re seeing right now,” Williams said. “You’re going to see the use of nonfungible tokens in the title business.”

Wosnack and Williams said the industry also will see things such as autonomous escrow, cryptocurrencies being used in real estate transactions, decentralized finance, and NFTs being used to document things like maintenance records.

“I can see a private blockchain consortia model in the capital markets that permits peer financial institutions to work on a mesh network that leverages capabilities such as Zero Knowledge Proof (ZKP), that will permit the financial institutions to exist within a blockchain underpinned financial ecosystem for trade,” Levonick said. “ZKP is key here, because that provides for obfuscation of confidential and proprietary elements that they do not wish to expose for competitive reasons while enjoying the inherent blockchain value of transparency, immutability and security of the blockchain.”

“The nuanced benefits to the capital markets are numerous as well, considering that the marketplace is still very manual (spreadsheet and email dependent), specifically when it comes to established practices, creating a common data language, common security protocols, record retention, and speed of and uniformity of execution when thinking about the ability to leverage smart contracts (reducing creation of significant amounts of standard contracts and supporting reporting documentation/ paperwork).”



# AI, blockchain, and the pandemic

The COVID-19 pandemic created drastic changes for the entire economy, and the mortgage, lending, and real estate industries were no exception. Artificial Intelligence (AI) and other tech solutions have been a big part of those changes.

“As the saying goes, ‘necessity is the mother of invention,’” **Corey Smith**, chief procurement officer at FirstClose, told *Dodd Frank Update*.

“When the pandemic first hit us back in March 2020 with the lockdowns, a lot of unknowns thrust several largely ignored innovative solutions into the spotlight,” Smith continued. “On Feb. 29, 2020, nobody was talking about remote online notary (RON), even though that technology had been around awhile, but by March 16, it was one of the hot topics every lender was inquiring about.”

Smith said FirstClose saw several key players in the mortgage and real estate industries start to turn to digital solutions as the pandemic forced businesses to be creative in continuing their day-to-day operations. For example, appraisers and home inspectors still needed to gain access to the interior of homes, so applications began to allow homeowners to take interior photos using smart devices, using geotags, time, and date stamps to avoid fraud.

“We saw a surge in restricted appraisals in the second mortgage and HELOC [home equity line of credit] space, hybrid eValuations increased, even lenders who never considered automated valuation models suddenly wanted to have conversations about these products,” Smith said. “E-sign and remote closings also saw an increase in demand as the pandemic continued. The great shift to digital is the result of the pandemic.”

According to a 2019 FiServ Consumer Trend Survey, there was a 40 percent increase in digital consumer applications since 2018. Smith said the pandemic has further accelerated the demand and timeline for digital solutions.

Similar to many consumer markets, Smith said, the lending industry is moving away from the traditional brick and mortar and in-person transactions in favor of an automated digital experience, such as

shopping on Amazon or, more recently, buying a car with Carvana. Consumers are wanting their loan application experience to be just as easy as a retail experience.

“Consumers are used to easy and intuitive user experiences on their smart devices and that demand for a better digital experience for loan applications is now hitting the banking and mortgage industry,” he added.

Some leaders found the use of blockchain, or rather, interest in the use of blockchain, also increased over the last year and a half.

“[The pandemic] accelerated the innovative approach to securing commercial or real estate assets without having to see the property – or to validate the underlying documentation to support the asset,” **Rick Roque**, founder of Menlo Capital said.

**Nathan Wosnack**, founder and CEO of Ubitquity, and **Wesley Williams**, the company’s vice president of product, said how the pandemic and its aftermath will affect the use of blockchain is a two-prong issue.

“Blockchain adoption happens where there’s bull markets,” Wosnack said. “When there isn’t a bull market, because of things like the pandemic, that there were in Spring of 2020, that was a really hard time for cryptocurrency adoption and certainly for our company, and all the companies out there. And so, there is a strong correlation between the growth of any technology and bull markets or bear markets.”

Williams said the pandemic changed a lot of rules. It closed down governments and cities and shut down commerce. A lot of people lost work, and the government started printing money like crazy, causing potential hyperinflation. People then wanted to move their wealth into more stable things. As a result, cryptocurrency is being seen as having that “store value” and as people started putting money into this new system, it caused them to really look at this and other technologies that have grown because of the pandemic.

“Things will shift,” Wosnack said. “There’s always money out there, and the investments will go into things like remote online notarization. That is



something that Ubitquity is planning to implement with our module add-ons through NotaryBlock, which will allow us to have a broad provider with blockchain, parallel recording, you know, perhaps smart

contracts but that's something that we've kind of put on-hold, because we're working on other things."

# How AI can reduce racial discrimination

Many players in the mortgage, lending, and real estate industries have stated diversity, equity and inclusion are major focus points in the coming years. While disparities in mortgage lending have been at issue for decades, the recent COVID-19 pandemic has shed a harsh light on the growing gap in minority homeownership and lending decisions.

According to Fannie Mae's Vice President of the Office of Minority and Women Inclusion, **Kenneth Imo**, the effects of practices from decades ago, are still being felt today. Sustainable homeownership has been the main driver of generational wealth accumulation, and many minorities have been prevented from accessing it and the financial rewards associated with homeownership.

The U.S. Census Bureau shows the rate of Black homeownership is 29 percentage points lower than for white households. In 2016, the median wealth of white households was ten times higher than Black households and eight times higher than Hispanic households, the cause of which is partially because of the historically lower homeownership rates among these groups.

The housing industry workforce also shows a lack of diversity. Even though it has increased by 66 percent since 2000, the representation of Hispanic or Latino and Blacks only increased by 5 percent and 1.98 percent, respectively. CEO representation has fared even worse, with an increase over the last twenty years of 4.15 percent of industry CEOs being Hispanic or Latino, and only 0.34 percent increase in the number of Black CEOs.

"If the housing industry falls victim to what **Dr. Martin Luther King Jr.** once described as the 'tranquilizing drug of gradualism,' it will take 114 years for the industry to mirror the diversity of our nation," Imo said. "Consequently, doing nothing is not an option.

"So how do we respond to a challenge that could take more than a lifetime to fix? First, we must acknowledge that the status quo is unacceptable and second, we must act with intentionality."

Groups like the Mortgage Bankers Association (MBA) have said they have made it a priority to increase mortgage opportunities for communities of color and others who have been traditionally overlooked. **Susan Stewart**, MBA chairwoman, made minority homeownership her focus for 2020. The organization's actions in this endeavor have included two advisory councils, one for affordable homeownership and one for affordable rental housing; advocating for mortgage assistance in Congress; and the expansion of their Convergence project, a place-based minority homeownership program.

As the industry continues to repair past inequities, studies have shown that artificial intelligence can help reduce racial discrimination in the housing market, if used properly.

"Human bias is something that cannot be avoided in life," FirstClose Chief Procurement Officer **Corey Smith** told *Dodd Frank Update*. "We all have a limited view of the world and no one person is immune to bias. The same is true about artificial intelligence, since AI is created by human beings, I do not believe we can have an unbiased AI system, but we can improve it by programming AI to help reduce implicit bias."

Implicit bias is the unconscious association, belief, or attitude toward a social group. And though AI can reduce the occurrence of implicit bias, it has to start with two things: the people who design the program, and the information inputted.

"Today, AI researchers are predominantly male, are

from a particular racial demographic and are from upper socioeconomic areas,” Smith said. “The talent pool is small, but as AI research grows, so will the opportunity to diversify the pool of talent who programs AI systems and the AI systems themselves will become less biased.

“The other area that can help reduce implicit bias is to sample data in a more balanced way,” he continued. “In lending, gender, age, and race are the easiest categories to identify, but there are other forms of bias present in the world that will be present in datasets.”

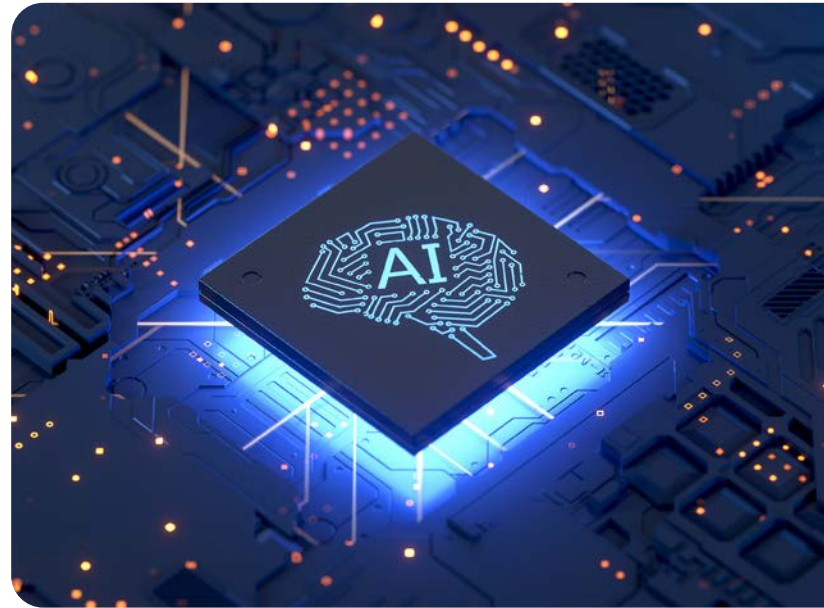
One example of these datasets is one that has been a staple in the lending industry for decades: credit scores. In a paper prepared for the Symposium on Credit Scoring and Credit Reporting sponsored by the Suffolk University Law School and National Consumer Law Center, **Lisa Rice**, then the vice president, and now president and chief executive officer of the National Fair Housing Alliance (NFHA), and **Deidre Swesnik**, then the director of public policy and communications for NFHA, discussed how the traditional credit reporting and scoring system helps perpetuate existing bias.

“Our current credit-scoring systems have a disparate impact on people and communities of color,” they wrote. “These systems are rooted in our long history of housing discrimination and the dual credit market that resulted from it. Moreover, many credit-scoring mechanisms include factors that do not just assess the risk characteristics of the borrower; they also reflect the riskiness of the environment in which a consumer is utilizing credit, as well as the riskiness of the types of products a consumer uses.”

**Aaron Klein**, a senior fellow of economic studies at The Brookings Institution, said AI has the ability to avoid such things as traditional credit reporting, and if used correctly, can “incorporate new data and harness AI to expand credit to consumers who need it on better terms than are currently provided.”

Klein’s report lends support to incorporating AI into the financial lending industry. Even if the AI is somewhat biased, it is more predictive and less biased than the current lending systems.

“Any potential change needs to be considered against the status-quo — not an ideal world of no bias nor complete accuracy,” he wrote. “This forces policymakers to consider whether the adoption of a new system that contains bias, but less than that in



the current system, is an advance.

“It may be difficult to embrace an inherently biased framework, but it is important to acknowledge that the status quo is already highly biased,” he continued. “Thus, rejecting new technology because it contains some level of bias does not mean we are protecting the system against bias. To the contrary, it may mean that we are allowing a more biased system to perpetuate.”

One example Klein highlights of a more accurate, less biased system is cash flow underwriting, where the lender uses an applicant’s bank balance over some time frame, usually one year, as opposed to FICO credit scores. Underwriters using this system found cash flow underwriting outperforms traditional FICO on its own, and when the two are combined, they become even more predictive.

“AI programmers must be thoughtful in how they approach their algorithmic solutions to implicit bias,” Smith said. “There is a rigor that these AI systems must endure, testing, and retesting on a continual basis, always striving to improve. In something as important as fair lending practices such as the Home Mortgage Disclosure Act, we might consider auditing these systems in the future to ensure that best practices are being achieved at the AI system level.

“Bias will never be eliminated through AI because biased human beings are the ones who build AI systems, and datasets will never have a balanced representation. But AI can help reduce the implicit bias we see today and provide for a more balanced and fair lending industry.”

