

## In-Focus

# CONNECTING THE BLOCKS: PRACTICAL APPLICATIONS OF BLOCKCHAIN FOR THE MORTGAGE INDUSTRY

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## CONNECTING THE BLOCKS: PRACTICAL APPLICATIONS OF BLOCKCHAIN FOR THE MORTGAGE INDUSTRY

*By Andrew Weiss*

One of the most talked about technologies of the last twelve months is Blockchain. To many, Blockchain is just another in an endless stream of technology ideas that flash into our business conversations and are then quickly replaced by the next novelty. To others, Blockchain appears to be the future underpinning for the financial industry — a secure and modern way to store and distribute information.

But what is Blockchain, really? Can it fundamentally change the way the mortgage industry conducts business? What impact will it have on the competitive mortgage lending landscape: on costs, on turn-times, on borrowers, on loan originators? And, why should we care?

### Let's start by going back a few years.

In the early nineties, I was at the center of bringing Fannie Mae's Desktop Underwriter to market. We determined that, to serve our lender customers better, we needed to take the guesswork out of the Fannie loan delivery process. To do this, we needed to bring consistency through automation to how loan purchase and guarantee decisions were made.

When we took the idea to focus groups of underwriters, we were met by deep resistance. "How can any technology replace the years of training and experience it takes to be an underwriter?" was the common reaction. But, we had a vision and persisted. What only a few of the most innovative lenders understood was that, while the kind of disruption AUS would bring would be significant, the opportunity to derive competitive advantage made it worth the risk. In time, the entire industry came around to this new approach to loan approvals; DU is now an indispensable element of the loan origination process.

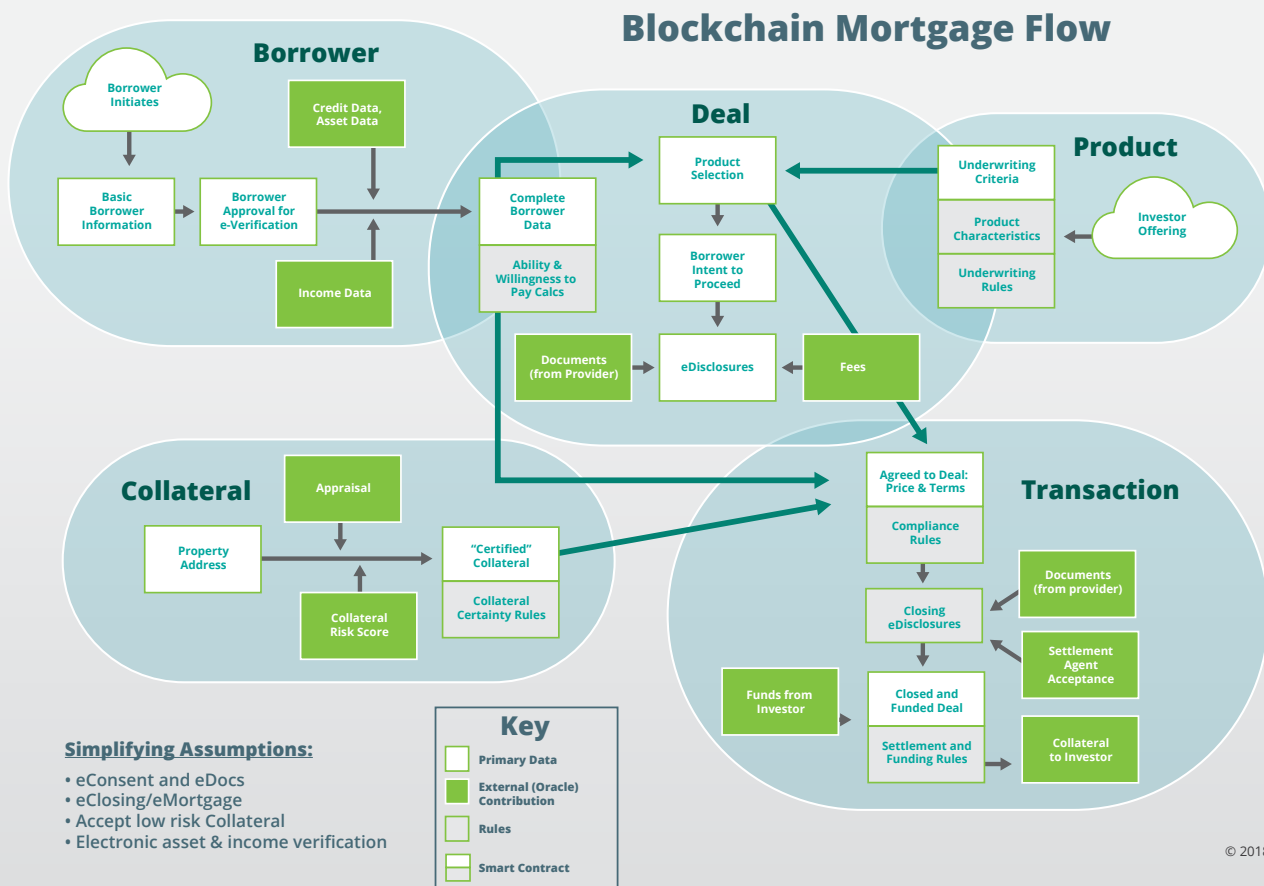
## CONNECTING THE BLOCKS: PRACTICAL APPLICATIONS OF BLOCKCHAIN FOR THE MORTGAGE INDUSTRY



Now Blockchain is on the horizon. Will it turn out to be a technological flash-in-the-pan, or will it be the next disruptive force that makes our industry stronger, better, and more profitable? Early adopters in a variety of industries are starting to realize benefits from implementing Blockchain technologies: recordation of land and title is being automated; valuable assets are being tracked through complicated supply-chains more efficiently; digital government information is being protected. At STRATMOR, we believe Blockchain is here to stay, and worth the early-adoption risk for those who are not faint of heart.

### Now, let's jump forward and imagine what Blockchain could do for the mortgage industry....

The year is 2026. One of the biggest market disruptors of the last decade, Blockchain, has received global adoption. In the mortgage industry, it began with technical changes to improve transaction data access, sharing, and data security. Starting at the back of the mortgage flow at shipping and delivery to the investor, Blockchain worked its way upstream to incorporate the entire mortgage origination process, including the integration of Smart Contracts in real estate transactions. Thus, in 2026, the loan manufacturing process looks like this:



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In addition, with the automated transfer of servicing data implemented, Blockchain enabled lenders to reassign post-closing teams to origination tasks. And, the technology allowed lenders to develop new ways to interact with borrowers and third-party providers throughout the loan manufacturing process, making it easier to securely share personal information and reducing the need for multiple (and redundant) verification steps. With more origination team members available to help borrowers, customer satisfaction numbers increased — turn-times improved, verifications and requests for additional documentation became exceptions versus commonplace, and the overall experience for the borrower was simplified. The loan process became as easy as ordering a set of golf clubs from Amazon. Loan production performance improved so dramatically that lenders reverted back to 2002 origination performance metric standards where, for instance, an underwriter processed on average 193 applications per month versus 29 applications in 2017. These new metric standards enabled lenders to increase profitability and pass some of these financial benefits on to the borrower. A win-win for everyone.

### What is Blockchain, technically speaking?

Does this seem like an unachievable dream? Maybe, but proponents of the Blockchain concept tell us that the potential for this business disruptor to have an impact on business processes is just about limitless. For the mortgage lender, it presents opportunities beyond improving data security which could change how we structure the loan process and ultimately improve the borrower's experience.

To really understand what Blockchain can do, we need to look at what Blockchain is.

Blockchain is an open-source (not owned by any one company or entity) protocol (method for doing things) that enables the secure and distributed storage of any kind of information. In an article in ComputerWorld, writer Lucas Mearian described Blockchain this way:

First and foremost, Blockchain is a public electronic ledger— like a relational database — that can be openly shared among disparate users and that creates an unchangeable record of their transactions, each one time-stamped and linked to the previous one. Each digital record or transaction in the thread is called a block (hence the name), and it allows either an open or controlled set of users to participate in the electronic ledger. Each block is linked to a specific participant.

Blockchain can only be updated by consensus between participants in the system, and when new data is entered, it can never be erased. The Blockchain contains a true and verifiable record of every transaction ever made in the system.

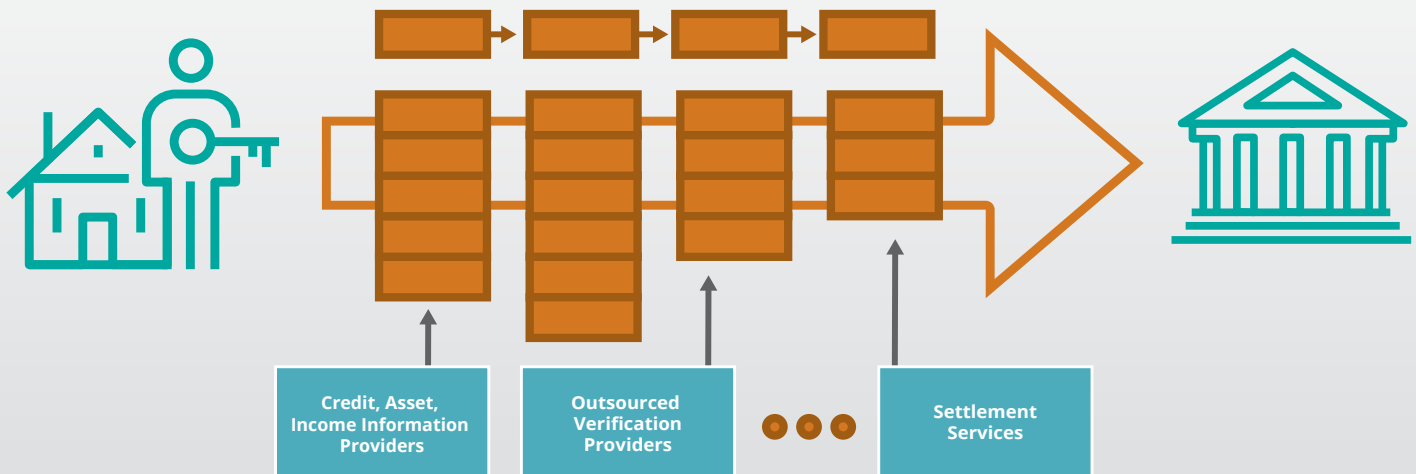
Think of Blockchain as a database, but a database that does not exist in one physical location, can be accessed by anyone who has permission to access it, is highly secure, and where none of the information in the database can be edited, adjusted or changed, though new information can be added. It's not a software package or a platform that you can buy but a way to apply existing technology to improve data safety and security. In short, it is a shared, immutable ledger for recording the history of transactions. Blockchain was the first technology to enable a new generation of transactional applications that established trust, accountability and transparency — from contracts to deeds and payments.



Many computers are connected in a Blockchain network. Blockchains employ mechanisms that make it possible for the computers, also referred to as “nodes,” to look across the many data locations and determine what is true and accurate for the stored data. This safeguard makes it unrealistic for hackers to tamper with encrypted data that is kept at many different locations. This is also important: No single entity controls the information on the Blockchain. Blockchain makes it possible to control access to the data through careful management of encryption keys so that the data can be accessed by all participants or a select few, allowing for granular control over who gets access to what data.

**Blockchain isn't just one thing;** it's an architectural principle. It's a store of records designed to function as per the illustration below:

### Origination Blockchain



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One of the exciting, though less established, features of some Blockchain implementations is the ability to have the Blockchain house more than just data. Referred to as “Smart Contracts,” this capability permits Blockchains to become processing systems of their own. In this scenario, Blockchain contains the rules that manage the transactions or has the encapsulated information necessary to complete the loan process. When fully developed, Smart Contracts will mean that not only will data be secure, but transactions on the Blockchain will conform to the rules set out by the consumers of those transactions, saving time and the expense of verification, buybacks, and costly errors.



For example, mortgage backed securities could be linked to the loan origination data that forms the basis of the loans in a pool. Buybacks could be minimized by sharing the data and rules (Smart Contracts) used to make underwriting decisions even before a loan is guaranteed or purchased from a lender. Servicing transfers could be facilitated by simply changing who has access to the encryption keys that enable access to the Blockchain for a set of loans.

Yes, Blockchain is the foundational technology that supports Bitcoin and other cryptocurrencies, but its potential is well beyond cryptocurrency transactions. For lenders, there are four primary reasons to care about Blockchain:

1. It can improve data security
2. It could improve operational efficiencies
3. It could help you improve the borrower's experience
4. Early adopters could gain a significant, market-disruptive, competitive edge

### Blockchain can improve data security

The mortgage industry has been, and is increasingly, implemented through a series of interactions and integrations between independent entities: borrower, lender, credit agency, appraiser, GSE, mortgage insurer, and investor, just to name a few. When built out, Blockchain represents a wonderful technology for enabling these interactions. Data can be shared across the entities permitted to view it, securely and reliably. Any entity who is allowed to see the data can have confidence that it has not been altered and can make their own judgements about the validity of the information — and the risk involved in any transaction that contains that information.

Also, as both the industry's understanding of Blockchain technology and the maturity of the

technology itself increases, the loan origination process could be enabled to store and access loan application and approval information (both data and images of documents). A lender could leverage Blockchain to make information accessible to those who need it, all the while ensuring the accuracy and security of that information.

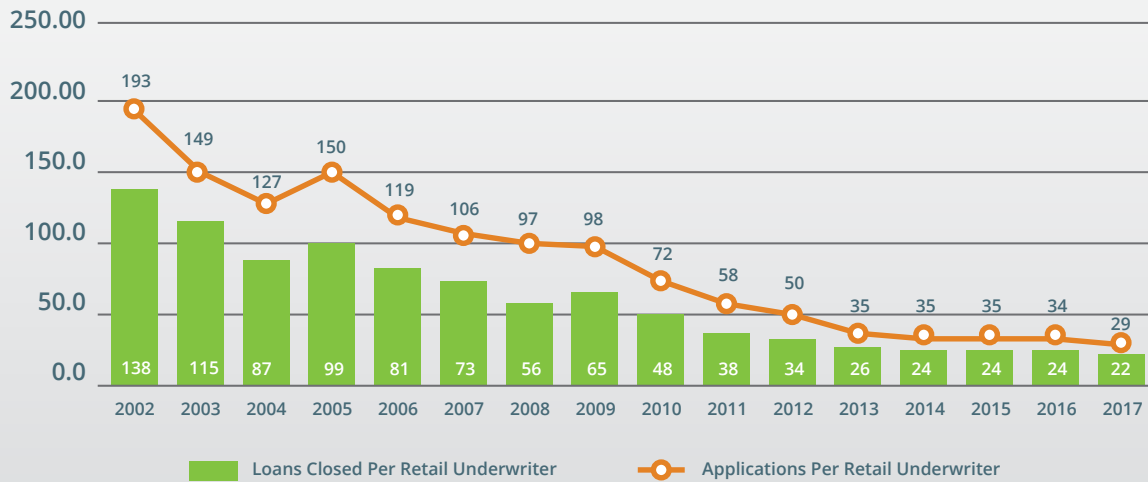
### Blockchain could improve operational efficiencies

The mortgage industry is filled with inefficient and arcane processes to collect, verify, and securely transmit the information that makes up a mortgage. Furthermore, today, the average loan takes close to 50 days from initial application by the borrower to close (loan documents are executed by the borrower), and an additional twenty days to be fully accepted and funded by the investor (if not held in portfolio by the lender). Each added day in this process increases costs and the risk of a failed transaction, and these costs are ultimately passed on to the borrower in the form of higher interest rates and closing fees.

While technology is often employed in an attempt to streamline and increase the productivity of the mortgage origination process, the nature of the existing collection and verification of all the required information has made those attempts fail. In fact, the cost of origination has more than doubled in the last ten years, while productivity has significantly diminished.

Case in point (as per my 2026 scenario), according to PGR: MBA and STRATMOR Peer Group Roundtable data, underwriter monthly productivity diminished dramatically from 2002 where 193 processed applications per month resulted in 138 closed loans per underwriter to 29 applications in 2017 that resulted in only 22 closed loans per month. This is an 85 percent reduction in productivity during the last 15 years!

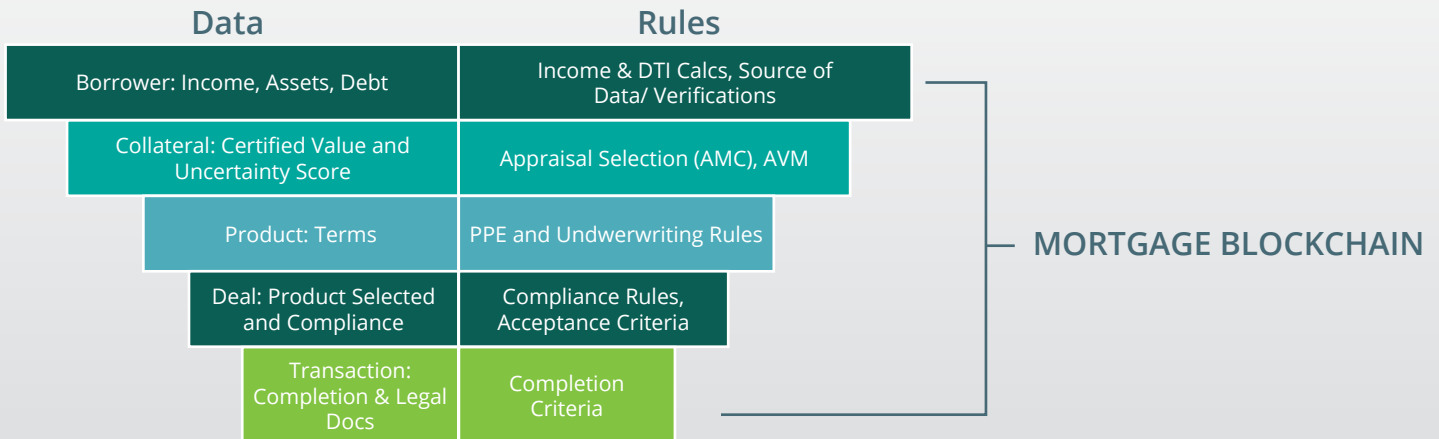
### Retail Underwriter Productivity/Month



Source: PGR: MBA and STRATMOR Peer Group Roundtable Program, 2017.

STRATMOR believes that Blockchain technology could offer lenders the opportunity to create a highly dependable, secure and transparent mechanism for sharing information about the borrower, the property, and the loan and can enable dynamic evaluation and pricing of loans by investors. When fully implemented, the non-finance related costs of mortgage origination could be slashed significantly through the adoption of a fundamentally different Blockchain model.

### Conceptual Loan Process Blockchain Model



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Further benefits include:

- STRATMOR data indicates that 95 percent of borrowers choose their lender through a referral or an existing positive relationship, and Blockchain technology could allow lenders to increase support to borrowers. With post-closing documentation completed through Blockchain-enabled automation, many of these roles could be eliminated, enabling the lender to redeploy its high performing staff members to other roles where applicable while, at the same time, cutting low performers from the team.
- Blockchain could replace the current, paper-and wet-signature document verification process with a synchronized, transparent, secure identity verification process — all online.
- Compliance would no longer be a bolt on. Blockchain could enable Compliance rules and the visibility into the execution of those rules, now built into the fabric of the transaction and giving easy access to participants and regulators for review.

### **Blockchain could help lenders improve the borrower's experience**

Borrower satisfaction is emerging as a key driver of competitive success, and the long-term potential for borrowers to participate directly in the "Mortgage Blockchain" holds promise for improving the borrower's experience. The potential for cost and cycle time reductions — ultimately benefits to the borrowers — are significant, too significant to ignore. Besides the additional borrower support from reassigning staff as noted previously:

- Blockchain could enable the reduction of loan processing time as all lender staff and third-party providers could have access to the same data, eliminating repeat steps to check for valid data. Decrease turn-time is a plus for the borrower.
- The real costs of processing files — whether the file is handled by a processor or underwriter or by a third-party provider — could be reduced and the savings passed along to the borrower as well.

As the cost to originate a loan keeps going up, and as profit margins continue to compress, the pressure on our industry to implement new technologies to change how we've done business continues to rise. Blockchain may be that technology.

### **Blockchain may give early adopters a competitive edge**

Many in our industry believe that real use of Blockchain as an underlying technology is at least five years away; others point to the pilots and proof of concepts that already exist to suggest it is much nearer. Likely, both are correct.

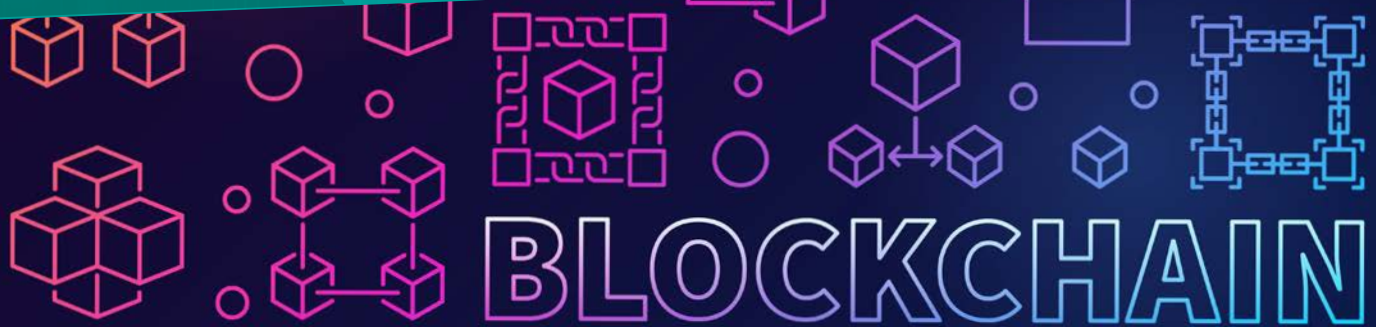
There are a handful of current pilot implementations using Blockchain technology, including a secure way to record and store legal transactions like title records and the sharing of closed loan funding packages with investors securely and immutably. Several companies are developing Blockchain implementations for loan origination, post-closing, and title recordation. There is no denying that we are in the early stages of adopting this technology, and current hard evidence of successes are thin, but the early indications are positive. The pilots that focused on the secure record keeping aspects of Blockchain, like title records, have had the highest level of early success, but they have only scratched the surface of what is possible.

There will be early innovation failures and successes with Blockchain, but the earlier adopters of this innovative technology will garner significant competitive advantages similar to the shot in the arm early adopters experienced by employing Fannie Mae's Desktop Underwriter in their loan manufacturing and approval process.

### **Brace yourselves: we're in for a bumpy ride**

Like any other technology, Blockchain has its downside. Replicating so much information across many computers takes a lot of horsepower, and mustering the cooperation of participants in the Blockchain generally means that transactions take some time to get posted and verified. Importantly, a broad set of participants in the Blockchain are needed to deliver the vaunted data security. If there aren't enough participants, the sanctity of the information can be compromised. Then, throw in the risk that the





technology itself is relatively new and that there are always unseen issues in any new technology (think hidden flaws) or that a newer technology may come along that promises better features and functionalities; your risks now includes a potentially expensive, maybe short-lived, experiment in Blockchain.

### What Blockchain isn't:

- Magic pixie dust here to save the world
- The same as Bitcoin or any other Cryptocurrency
- Just another buzzword
- A technology “flash in the pan”

The choice that mortgage executives need to make is where to place their bets; as we know, most lenders hate to be first. Typically, there is not much downside in watching from the sidelines, but the opportunity cost for tremendous upside in terms of significant competitive advantages is greater. Those who do invest in Blockchain must understand that the investments are speculative, but that the upside potential is for real payback.

Blockchain is a potential disruptor. Our industry has been transformed by disruptive technology before as I discussed earlier — the development of the Automated Underwriting Systems (AUS) Desktop Underwriter and Loan Prospector in the mid-1990s. Before the widespread adoption of AUS, few could conceive of technology having such a critical role in determining which borrowers get what kind of loan. Today, the AUS has become a mainstay of the origination process. The Digital Mortgage concept, many years in the making, also is transforming our industry. Blockchain will be another technology advance that should drive efficiencies and allow us all to deliver the best customer experiences without driving costs through the roof.

Innovators will blaze a trail, but the more risk averse among us will wait for demonstrated success before jumping on the Blockchain bullet train. Regardless, Blockchain is a technology trend that should not be ignored.

If you are not “faint of heart,” contact STRATMOR. We are looking for early adopters to lead this charge. Disruption is coming. Will you be on this cutting edge or following the leaders?

### WE WELCOME YOUR FEEDBACK

Would you like to talk to Andrew Weiss about what Blockchain technology might do for your company? Contact him at [andrew.weiss@stratmorgroup.com](mailto:andrew.weiss@stratmorgroup.com) ■