

Why Compliance and Risk Managers Should Embrace Blockchain

By Caitlin Long



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Introduction

New technology exists that provides a shared, immutable record of who owns which asset, and exactly when they bought or sold it. It provides a perfect audit trail. It can automate business processes that today are duplicated by many parties, and are slow, manual and error prone. It can enable real-time, desktop monitoring by both external regulators and internal compliance and risk management professionals alike.

Distributed Ledger or “blockchain” technology is capable of all of this and more.

This article first explains what blockchain technology is, as well as related concepts such as distributed ledgers and smart contracts. It then addresses common questions about blockchain technology and how it can help the financial services sector. Lastly, it discusses blockchain uses for solving real-world problems and the promise of blockchain for more efficient and effective regulation.

1. Definitions: Blockchain, Distributed Ledgers and Smart Contracts

First, what is blockchain technology? *A blockchain, also known as a distributed ledger, is a new form of shared database technology that enables multiple parties in a network to share a single record of transactions, which all parties can trust as valid.*

Many have heard the term blockchain connected with cryptocurrencies such as bitcoin. Blockchain is the technology underpinning bitcoin, but only some blockchains use cryptocurrencies. Importantly, blockchain technology, as deployed by financial institutions and governments, is unlikely to involve a cryptocurrency. Consequently, this article focuses only on these institutional implementations, which are most likely to be (1) private, permissioned (i.e., limited access) systems that (2) do not involve bitcoin or another cryptocurrency. These versions of blockchain technology are designed to facilitate compliance with AML/KYC/OFAC/anti-fraud and related laws and regulations, and to bypass the thorny compliance issues raised with systems that use cryptocurrency or tokens.

Parties to a network sharing a distributed ledger do not need to keep their own copies of transaction data and reconcile with each other, as

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transacting parties do today, because the shared ledger contains a so-called “golden record” created when participants in the network reach consensus (i.e., agreement) about the state of the ledger (i.e., the ledger’s log of transactions). Distributed ledgers are append-only databases, shared by multiple parties, that maintain a perfect audit trail of who did what and when. They enable institutional, peer-to-peer transactions, which speed up settlement cycles to near-real-time and remove the need for middlemen (which actually introduce counterparty risk where it need not exist).

Smart contracts are an easier concept to grasp. A simplistic analogy is online bill payment, in the sense that smart contracts automate workflow. For example, on the 30th of the month, a software program springs into life and automatically pays your bill (assuming your account has sufficient funds) by executing the instructions you previously entered on your bank’s website. No human being touches the workflow, at least on the front end. However, what happens after your transaction springs to life is a sequence of transactions that

[Blockchain] provides a perfect audit trail [that] can automate business processes that today are duplicated by many parties, and are slow, manual and error prone.

occurs before your payee receives your payment. When a smart contract runs on a distributed ledger, by contrast, you and your payee would transact directly and instantly.

It is only when smart contracts run on distributed ledgers that their true power is realized. Smart contracts that run on distributed ledgers automate *multi-party* operational processes and can complete them in near real-time. A distributed ledger allows independent organizations to execute terms described in their agreements without using an intermediary, on an institutional peer-to-peer basis.

Consequently, when smart contracts run on top of distributed ledgers they can substantially streamline and automate the financial sector’s labyrinthine business processes, which today are duplicative, manual, slow, error-prone and introduce unnecessary counterparty risk. Indeed, the streamlining and automation of back-office functions is the main reason for the excitement surrounding distributed ledger technology.

2. Answers to Common Questions

Several questions commonly arise about blockchain. Will there be one blockchain or many? Does a single standard need to be set? How about cybersecurity? Are DLT systems capable of institutional-level speed? Will confidential information remain private? And how fast might this technology be deployed?

a. One Blockchain or Many?

Most experts believe there will be many different distributed ledgers, and all of them will integrate with critical systems across the financial sector. A distributed ledger is a shared database. Just as there are many database solutions, there will be many shared database solutions as well. Distributed ledgers will integrate in precisely the way that databases integrate. Different distributed ledger systems will have different features that will work best for different use cases.

Here is a good example of a blockchain integration that has already been built. In a syndicated loans prototype, blockchain technology was integrated with the Fedwire system at one of the 19 participating financial institutions. Then, in a simulation, a smart contract delivered to the bank’s payment system a payment data object, which was built to the bank’s internal specification. The bank’s payment system then sent a Fedwire to the payee using both the remittance instructions written to the ledger by the payee and the payment details (amount and transaction ID) determined by the smart contract.

A good analogy for how I believe blockchain systems will impact financial markets is in electronic trading venues for publicly-traded stocks. In the 1990s, nearly all stocks traded through either the New York Stock Exchange or the NASDAQ. The advent of ECNs (electronic communication networks) caused the number of execution venues to proliferate, so that today investors have a choice among dozens of different platforms to execute trades. These venues are integrated, connected via an established protocol such as FIX (Financial Information eXchange).

What happened to the equities business as a result? For the sell-side, profits grew materially, despite the decline in profits per share traded, as huge increases in volume more than made up for lower margins. The buy-side saw greater liquidity at lower cost. Win-win.

Blockchain technology will likely follow a path similar to the electronification of the equity markets. Both the sell-side and buy-side are likely to win.

b. Standards?

Many industry leaders believe that standardization will arise naturally as distributed ledger technology evolves and is adopted for use within financial markets. Multiple implementations of blockchain technology are expected to succeed and co-exist, just as there exist many different databases available today, each with different functionality and on-disk formats, but often sharing query languages or other properties.

c. Cybersecurity?

As with any IT platform, the answer to the question of how secure is blockchain technology is “relative to what?” No one can ever guarantee absolute security in anything—software included. Blockchain technology raises the bar for financial institutions’ information security, which is protected by hardened perimeters but behind the firewalls the data is usually not encrypted. To maintain the privacy standards that disparate back-office infrastructures provide in a decentralized setting, encryption is required—and blockchain platforms use it. Cybersecurity will need to be addressed via CISO (chief information security officer) audits of each blockchain technology platform before financial institutions deploy them, and only some platforms will pass these tests.

Questions still come up about the “Mt. Gox” hacking, albeit less frequently today than previously. The 2014 hacking of the bitcoin exchange, Mt. Gox, was not a hacking of the Bitcoin blockchain itself. Rather, it was a hacking of a company whose application was built (poorly) on top of Bitcoin.

None of the permissioned blockchain platforms use the Bitcoin blockchain. Still, it’s worth adding that the Bitcoin blockchain stands as one of, if not the, most secure pieces of software ever built. It is completely exposed to the wilds of the Internet, without a firewall and with a \$36 billion hacker’s bounty (as of this writing), and no one has been able to hack it to steal bitcoins directly from it, yet. Since its inception in January 2009, its network uptime has been 99.991324178% (as of this writing). As a piece of software, Bitcoin is a marvel.

d. Speed/Scalability?

Yes, some blockchain systems can provide institutional-level processing speed, such as that of Symbiont’s ledger layer (at 80,000 transactions per second). The scalability question

usually arises because of the slow speed of public blockchain platforms, such as Bitcoin and Ethereum (e.g., Bitcoin’s speed is currently limited to 7 transactions per second). Of course blockchain systems will need to be fast to be deployed by financial institutions, and my company has shown that it’s possible to build a highly-performant distributed ledger. Few distributed ledger systems are capable of institutional-level speed as of today, but others are expected to become available over time.

e. Privacy?

Can confidential information remain private on a distributed ledger, which is shared by many parties? Yes, it can. This question arises often out of confusion about Bitcoin and Ethereum, which are not designed to be private, while permissioned blockchain platforms are designed to be private (or to store private information off-ledger, as many of our competitors do). The ability to store confidential data on-ledger is an important feature for many financial applications, such as those in the syndicated loan market. In that market, certain data (such as loan documents) are meant to be shared among participants but most other data (such as the pricing of secondary market trades) must stay private.

And, to repeat the above theme from the cybersecurity discussion, no financial institution will deploy a DLT system unless it successfully passes the CISO’s review.

f. Timing?

Initial production deployments of blockchain technology have already happened in the financial industry, as this article explains below, and large-scale deployments—the type that may cross the desks of this article’s readers—are likely to start within 6-9 months. For example, Credit Suisse has publicly said it expects to use the Synaps platform (powered by Symbiont) for live syndicated loans by Q1 2018.

3. How Blockchain Technology Can Help the Financial Sector

Setting the Stage: Stars Aligning for Change, and Problems Left to Fix

Stars are aligning for market-structure changes across many parts of the securities industry. Blockchain technology arrived at the same time as financial industry fundamentals were shifting. Blockchain has become the spark for conversations about financial market structure improvements that are long overdue.

Costs and capital pressures are growing on the sell-side, and the buy-side has faced years of low-volatility markets that made it difficult for asset managers to generate excess returns. Regulation growth continues to impact both sides of the industry.

So the backdrop is conducive to sweeping structural changes. The securities industry may have fought these changes in different times, but today it is welcoming (or at least not necessarily fighting) them.

Enter blockchain.

Let's start with why the sell-side is interested in it. Blockchain is a rare tool in the toolkit that managers can use to improve performance--rare because it can improve both the "R" and the "E" of the all-important ROE (return on equity) metric, which is profits divided by equity capital. ROE is important because bank sector stocks tend to be driven by ROE, so shareholders reward improvements in the ratio and banks' boards set compensation incentives for managers based on ROE targets.

Most of the things management can do to boost performance improve either the "R" or the "E," but blockchain can improve both. That's rare.

How does DLT help improve ROE?

Delays in transaction settlement create both expenses and counterparty risk that would not otherwise exist but for those delays, and unsettled trades give rise to capital charges. When both costs and capital charges go up, the sell-side institution's ROE drops. Reducing costs boosts the "R" in the numerator of the ROE equation, and reducing capital charges cuts the "E" in the denominator. So DLT can make ROE go up by reducing both costs and capital charges.

Speeding up settlement cycles would reduce overall capital charges for banks, and in every division of the business—regardless of the technology deployed. This is one of the reasons why the industry hardly protested when the SEC announced a requirement to speed securities settlement from T+3 to T+2 in March 2017 and it gave the industry only until September 2017 to implement the new rule—which is fast for regulatory changes that have significant operational impacts, as this one does.

Interestingly, one bank shared with me that it quantified how much capital it could release if equities settlement were to move from T+3 to T+0. It's a very, very big number. If the bank could ever release that magnitude of capital, it would completely change the complexion of the bank's balance sheet.

Just the fact that a bank did that math is quite a statement in itself.

Before the financial crisis it would have been heresy to discuss such math, owing to the implications of shorter settlement cycles on the securities lending business. But many players made the switch to T+2 in their European Union businesses in 2014 and saw benefits.

Acting SEC Commissioner Michael S. Piwowar cited the SEC's aims to "increase efficiency and reduce risk for market participants" as reasons to move to T+2. Notice the theme? Improved efficiency boosts "R" and reduced risk cuts "E." Improving ROE is why the industry supported it.

Piwowar continued, "As technology improves, new products improve, and trading volumes grow, it is increasingly obvious that the outdated T+3 settlement cycle is no longer serving the best interests of the American people."

If blockchain lives up to its promise of offering near-real time settlement of financial transactions, one wonders how long the SEC will consider anything other than T+0 settlement as serving the best interests of the American people. And I think the sell-side will eventually support the move to T+0 because, overall, faster settlement cycles boost ROE. The biggest obstacle to date has been securities lending, whose operational issues were the biggest reasons banks cited in the past for not shortening T+3 settlement cycles (not to mention, of course, profits from delayed settlement). But blockchain technology can automate securities lending (and, for the stock loan business specifically, can automate compliance with Regulation SHO). And the economics of delayed settlement aren't as attractive as they used to be. With the possible exception of prime brokerage desks, I believe the sell-side would be on board overall.

Next, let's move to the buy-side.

Some believe the long-only buy-side stands to gain the most from adoption of blockchain technology. Why? Because the present system of tracking securities ownership can lose track of who really owns what securities, and long-only investors (mutual funds, pension funds, insurance companies and Mom & Pop) tend to be the losers when mistakes happen. As a Delaware judge recently pointed out, mistakes are happening more frequently as trading volumes have increased.

DLT would enable all parties to keep accurate track of who owns what, would increase transparency, would reduce the buy-side's counterparty risk to unsettled trades by speeding up settlement cycles, and would cut its transaction costs by automating the functions currently played by intermediaries. In some markets, such as ABS (asset-backed securities) and MBS (mortgage-backed securities), investors would gain real-time trans-

parency into the cash flows of securitization vehicles that they do not have today—thereby potentially improving liquidity. Perhaps shortening settlement cycles in fixed income could facilitate a transition to electronic trading venues for bond markets, which still largely trade by telephone, thereby improving liquidity.

Why are long-only investors often the losers when operational mistakes happen in the securities industry?

The answer traces back to a fundamental issue, which is that record ownership of securities is separated from beneficial ownership and systems to keep track of both are not always in sync due to transaction settlement delays. Most securities industry professionals do not even understand this point: what we own in our personal brokerage accounts is not securities, but derivatives thereof (called “securities entitlements”). The record owner of securities in >99% of cases is Cede & Co. (as nominee for the DTC).

Separation of the record owner and beneficial owner of securities—also known as the “indirect” or “nominee” system of securities ownership—evolved for historical reasons tracing to the paperwork crisis of the late 1960s. The SEC adopted it as a solution in 1971, despite the securities industry’s objections, because technology did not exist at the time to settle increasing transaction volumes on a gross basis. The industry preferred a decentralized electronic model, but the SEC instead chose

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a centralized depository model because it felt decentralized electronic technology did not yet exist. Well, today it does.

So securities today are owned by a central depository, Cede & Co., which holds in its custody a single piece of paper called a “global security” from which all securities entitlements derive. The securities entitlements we own in our brokerage accounts are I.O.U.s from our broker/dealer, which aggregates all of them in fungible bulk and settles against other broker/dealers on a net

basis after trading hours close. Custodians then settle net against Cede & Co. The beneficial owners of “securities entitlements” have contractual privity only with their broker/dealer, so that if anything goes wrong in the chain of securities custody the beneficial owners can sue only their broker/dealer, not Cede & Co.

While the system works fairly well, mistakes do happen and they can be costly.

(In this section, I draw heavily from an article co-written by Andrea Tinianow and me in the Harvard Law School Forum on Corporate Governance and Financial Regulation, which is available at <https://corpgov.law.harvard.edu/2017/03/16/delaware-blockchain-initiative-transforming-the-foundational-infrastructure-of-corporate-finance/#more-80025>. Andrea leads the Delaware Blockchain Initiative for the State of Delaware, for which Symbiont is the technology ambassador.)

Prominent judges do not often call their own legal opinions “absurd,” but Delaware Chancery Court Vice Vice Chancellor J. Travis Laster did just that in a case involving T. Rowe Price (In re Appraisal of Dell Inc. (Dell Continuous Ownership), 2015 WL 4313206 (Del. Ch. July 30, 2015)). T. Rowe Price paid \$194 million to compensate its clients for actions for loss of appraisal rights and a proxy voting mistake that were caused by operational problems stemming from the nominee system of share ownership. Vice

Chancellor Laster said, “Personally, I think that [decision] is absurd. This was an example of people doing what they should do and then getting caught up by the system... The upshot for present purposes is that the complexities of the nominee system harmed stockholders.”

Another recent example is the Dole Food Company class action litigation. Vice Chancellor Laster revealed a curious fact in his decision of February 15, 2017: investors filed claims to 49.2 million Dole shares that were “facially eligible,” but only

36.8 million Dole shares were outstanding.

Most of the difference was caused by unsettled trades during the final three trading days (T+3) before Dole’s buyout closed, because “DTC’s centralized ledger did not reflect all of the trades in Dole common stock on the day of the merger or during the two days preceding it.” The rest of the difference resulted from uncovered short sales of Dole stock. As Vice Chancellor Laster wrote,

The shorting resulted in additional beneficial owners who received the merger consideration, who fell within the technical language of the class definition, and who could claim the settlement consideration. Meanwhile, the lenders of the shares, not knowing that the shares were lent, also could claim the settlement consideration. This is another means by which two different claimants could submit facially valid claims for the same underlying shares.

Proxy voting is yet another area in which the nominee, or indirect, ownership system can breed inaccuracy. In the 2008 proxy contest for control of the board of Yahoo, a recount demanded by a shareholder revealed that almost 20% of the vote was miscounted. As Vice Chancellor Laster explained in a September 2016 speech to the Council of Institutional Investors, the default voting option is sometimes set to vote for management's proposals, which adds to the difficulty of success in proxy contests because quirks in the system can cause votes to default back to vote in favor of management. This happened to T. Rowe Price in the Dell case, as T. Rowe Price checked three times to ensure its vote was against Dell's management but the system actually recorded its vote in favor of management's proposal by default. Vice Chancellor Laster continued,

Aside from overvoting, the complexity in the voting system creates opacity and the opportunity for miscalculated votes...As the SEC has explained, 'Because the ownership of individual shares held beneficially is not tracked in the U.S. clearance and settlement system...imbalances occur.' When those imbalances occur, 'broker-dealers must decide which of their customers will be permitted to vote and how many shares each customer will be permitted to vote.'

In other words, one share does not equal one vote. Vice Chancellor Laster concluded in his speech to the Council of Institutional Investors:

The plumbing needs to be fixed. A plunger exists... With distributed ledgers, a central accountant like DTC becomes unnecessary. Custodians become unnecessary. Ownership lies only with beneficial owners. A single distributed ledger would allow straight-through accounting. It is a utopian vision of a share ownership system where there is only one type of owner: record owners.

In a footnote to his Dole Food Company opinion, Vice Chancellor Laster wrote,

...despite laudable and largely successful efforts by the incumbent intermediaries to keep the system working, the problems have grown...Distributed ledger technology offers a potential technological solution...

Enter the Delaware Blockchain Initiative.

Delaware, in many ways, provides the foundational infrastructure for corporate finance in America because a majority of businesses choose to incorporate in Delaware. And Delaware is likely to enable corporate registrations on a distributed ledger as early as August 2017.

Here's the key significance of the Delaware Blockchain Initiative to Wall Street: when a company incorporates on a distributed ledger instead of a piece of paper, the registered owner of securities will always be the beneficial owner. There will be no piece of paper for Cede & Co. to hold in its vaults. In other words, investors will actually own the securities we think we own in our brokerage accounts.

The impact of this change on securities markets will take years to play out. Issuers will still have a choice whether to incorporate on a distributed ledger or use the status quo method.

Readers may find it curious that the DBI is discussed in the buy-side section of this article, because the DBI is not a buy-side initiative per se. But the DBI is likely the spark that will streamline and improve settlement processes in the securities industry, allowing securities issuers and investors to interact directly, ensuring dividends and other corporate actions (such as stock splits) are always accurately administered, bringing transparency and accuracy to proxy voting, and preventing accidental over-issue of securities by the securities lending business.

Investors are the biggest winners from the improved accuracy of ownership records, reduction of counterparty risk, restoration of "one share, one vote" in proxy voting and reduced costs as processes are streamlined by blockchain technology.

Applying DLT to Solve These Real-World Problems

Status quo business processes in both securities and payments involve multiple intermediaries, each of which needs time to process transactions and each of which creates counterparty risk where it would not exist if settlement times were real-time.

Both the payments and securities ecosystems deploy layers of intermediaries, each one netting their own intra-company

transactions to minimize the number of inter-company transactions that need to settle. This layered structure of intermediaries is a vestige of a bygone era, when technology did not exist to settle large volumes of transactions quickly.

Blockchain technology is a means by which the financial sector—including both securities and payments—can finally automate many of the roles played by these intermediaries, such as central securities depositories, transfer agents, correspondent banks and even central banks. In other words, DLT enables the financial sector finally to achieve the true benefits of digitization. For the most part, the digitization that occurred in the industry to date followed status quo market structure. But DLT enables automation of many of the roles performed by intermediaries, which will enable the streamlining of entire market structures.

A real-world example is the \$4.5 trillion syndicated loan market, for which Symbiont partnered with Ipreo in a JV called Synaps to deliver a prototype to 19 participating financial institutions in March 2017. Credit Suisse, which led the initiative, has publicly disclosed its intention to have loans issued on the platform as early as Q1 2018. One goal of that project was to prove that DLT could for once and for all eradicate the fax machine, which is still today a primary tool of communication in the syndicated loan market. Market estimates are that participants send 25 million faxes to each other annually. Each bank retrieves each fax from the fax machine, keys the data into its system, and then later reconciles the data with all other syndicate members. Errors and misdirected payments are a persistent problem in syndicated loans. Economists might call these business processes a “deadweight loss” because no economic benefit is gained from all of this duplication and reconciliation.

It's not difficult to see the potential for DLT to reduce costs in the syndicated loan market, parts of which have not yet been digitized. In many cases the bigger benefit from DLT deployment will be reduced capital charges. Average loan settlement time in 2016 was 18.4 days, according to IHS Markit Ltd., and we think our platform can facilitate reducing it to about 3 days.

Details of other real-world projects in different markets are available at these links: Nasdaq announced a proof of concept for private equity in 2015, Northern Trust deployed IBM's blockchain for private equity fund administration this year, Orebits deployed Symbiont's blockchain to digitize unmined gold claims this year, JPMorgan and Barclays led a group of firms to test Axoni's blockchain for equity swaps in 2016, DTCC is partnering with IBM and Axoni to build a platform for CDS, DTCC also completed a blockchain-based technology test

for the repo market and will decide by June 2017 whether to deploy it, Maersk is moving to deploy IBM's blockchain for supply chain finance, and Wal-Mart completed a test of IBM's blockchain for food safety.

4. Blockchain and Regulators: The Dawn of Desktop Regulation?

DLT could give regulators the ability to monitor markets in real-time, providing transparency via a “read-only” node on a DLT network. This would give regulators transparency regarding counterparty relationships and systemic leverage in real-time, and would automate the regulatory reporting required of regulated companies.

Acting CFTC Chairman J. Christopher Giancarlo said, “The benefit of DLT technology is to provide a comprehensive market view so that regulators can then make recommendations to Congress and other policymakers about what to do about the inter-locking relationships. But before we can even get to the policy concerns we need to first have that comprehensive, consistent view, which we don't have today.”

He detailed the “practical impossibility of a single national regulator collecting sufficient quality data...to recreate a real-time ledger of the highly complex, global swaps trading portfolios of all market participants.” In the Q&A afterward, he continued: “At the heart of the financial crisis, perhaps the most critical element was the lack of visibility into the counterparty credit exposure of one major financial institution to another. Probably the most glaring omission that needed to be addressed was that lack of visibility, and here we are in 2016 and we still don't have it.”

Giancarlo believes, “if allowed to thrive, blockchain may finally give regulators transparency.”

In securities lending markets, DLT would remove the gray area currently involved with Regulation SHO compliance for the stock loan market. It would no longer be difficult to verify that a “locate” can be found for a hard-to-borrow stock, for example, since the borrow itself would take place on the ledger.

In ABS and MBS markets, compliance with the SEC's Regulation AB II is difficult—if not impossible—because trustees are required to facilitate communication between investors, but trustees do not have the right to access the list of a security's beneficial owners and therefore are unable to verify ownership. If the ABS and MBS were issued on a distributed ledger, record owners would be the same as beneficial owners so trustees would be able to comply with Regulation AB II.

Blockchain has taken center stage among U.S. regulatory bodies, including at the SEC. The SEC has a blockchain working group, which featured the topic prominently at its fintech forum in November 2016. The topic has also come up in a petition for rulemaking that is currently pending with the SEC to prepare a concept release on digital assets that proposes a “sandbox” regulatory approach, and in the SEC’s transfer agent concept release.

5. Will Institutions Ever Use Cryptocurrencies? (Yes, Eventually)

Before concluding, it’s worth looking into the future. It is likely cryptocurrencies will ultimately be accepted within the mainstream financial system, and it may happen sooner than we think. Bitcoin has been *legal tender in Japan* for payments since April 1, 2017, and increased *transaction volume from Japan* as a result of the change was a big reason for the spike in bitcoin’s price in the Spring of 2017. Readers may also be surprised to learn that the United Nations is actually a leader in deployment of cryptocurrencies by governmental institutions.

Bitcoin has been mostly a developing world story for the past few years, as approximately 1 million people a day obtain their first cell phone and bitcoin may be their only “bank” account. Out of the top 10 countries searching the word “bitcoin” via Google, all ten are usually developing countries. Bitcoin has become a means of financial inclusion for the unbanked via cell phones.

So emerging markets have become a proving ground where bitcoin is demonstrating that it is a cheaper, faster, and safer payments system, with trackable payments that help reduce fraud.

The United Nations first got involved when it hosted a conference called ID2020 in May 2016 to consider the use of public blockchains to create an immutable record of the identity of individuals, in an effort to reduce human trafficking. The mix of UN executives and crypto-enthusiasts there was both surprising and inspiring.

Shortly thereafter, the UN concluded that the anti-fraud benefits of tracking aid payments outweigh other risks, such as not knowing the identity of a counterparty confirming a cryptocurrency transaction. In early 2017, the UN’s World Food Program (WFP) completed a pilot program to transmit Pakistani rupees to 100 aid recipients using the Ethereum testnet to authenticate payments, and in May 2017 the WFP is expanding the program to more than 10,000 recipients in Jordan. The program’s goal is to expand to 500,000 recipients by 2018.

The WFP’s CFO, Houman Haddad, said, “At the moment we’re paying out in normal currencies, so-called fiat currencies,” owing to the limited number of places that accept cryptocurrencies. But such places are growing rapidly in the developing world. “However, the ideal would be that if they do [accept cryptocurrencies], then we could just transfer the cryptocurrencies. It gets rid of post-payment altogether.”

And it goes beyond the UN. Ironically, it was the fallout from U.S. banks’ compliance requirements that pushed another developing country’s central bank to embrace bitcoin itself as a means of foreign exchange. When Barbados found itself with severely restricted access to the global financial system because of “de-risking” by U.S. correspondent banks, the governor of the Central Bank of Barbados took matters into his own hands.

Governor DeLisle Worrell appealed for help via international channels, warning the Financial Stability Board meeting in Tokyo in April 2016 that “countries and individuals who no longer have access to the services of international banks, either directly or through the correspondent relationship of local banks, will have to conduct their financial and foreign exchange transactions outside the international system of licensed institutions.”

So the Central Bank of Barbados approved issuance, via the Bitcoin blockchain, of digital representations of the Barbadian dollar, each equal to a dollar issued by the Central Bank itself. The approved platform, operated by tech startup Bitt, enables users to transact peer-to-peer but also maintains the money in trusted bank accounts and removes users’ exposure to bitcoin’s price fluctuations.

Likely someday these experiments in the developing world will eventually—and legally—jump back to the developed world, where it all began.

Conclusion

What are the benefits of DLT to compliance and risk professionals? No more duplication of records. No more counterparty risk arising from unsettled trades or payments. No more need for securities to travel through multiple intermediaries on their indirect way from seller to buyer. No more need for payments to travel through multiple banks on their indirect way from payor to payee. Compliance itself is streamlined, with perfect audit trails and automated regulatory reporting. Fraud is harder to perpetrate, and is more easily traceable.

All of these, and more, are the real-world benefits of DLT to the financial industry.

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