

## **Blockchain: Poised to Transform Business**

Sam Gandhi and Lilya Tessler  
March 2020

### **Sam Gandhi:**

Technology can be disruptive, and perhaps none more so than blockchain. It's more than just the foundation for cryptocurrencies like Bitcoin. Blockchain promises to change the way everyday commercial transactions are handled, and threatens to disrupt how we conduct business, but what is blockchain, and what's changed in the landscape to make it so attractive to business? We'll find out in today's podcast.

### **Lilya Tessler:**

Anyone around the world can use this technology and transact at lightning speed. We're certainly seeing a lot of early adopters that are in the process of developing the technology. We're seeing a lot of interesting implementations in the insurance space, especially with the use of smart contracts, which is an application that can be built on top of blockchain technology. The most important part of getting in early is really being part of the decision-making process, helping build the infrastructure to be tailored to your particular business.

### **Sam Gandhi:**

From the international law firm Sidley Austin, this is the Sidley Podcast, where we tackle cutting-edge issues in the law and put them in perspective for businesspeople today. I'm Sam Gandhi. Hello, and welcome to the podcast. There's a lot to learn about blockchain, and there's no one better to explain it than our guest today, Lilya Tessler. Lilya's a partner at Sidley Austin, and head of Sidley's New York FinTech and Blockchain Group.

Lilya focuses her practice on representing digital asset trading platforms, blockchain technology companies, US and non-US broker dealers, financial services firms, and cryptocurrency funds. Lilya also advises technology companies on blockchain token offerings, including so-called initial coin offerings, or ICOs. Lilya, welcome to the podcast.

### **Lilya Tessler:**

Thank you, Sam, happy to be here today.

### **Sam Gandhi:**

So, many people don't understand the difference between blockchain and say, Bitcoin, or cryptocurrencies. I thought for a long time they were the same thing. What really is blockchain?

**Lilya Tessler:**

So, blockchain is a distributed ledger technology. It is a database that's recorded across multiple computers around the globe that each record a carbon copy of that same data.

**Sam Gandhi:**

So, is it kind of like a shared Excel spreadsheet?

**Lilya Tessler:**

Yes, a shared spreadsheet, but that everyone verifies any data that's added to it, and cannot be modified unless everyone on that network reaches agreement about new data that's added to it.

**Sam Gandhi:**

So, that's a way for people to kind of share information, and how do they agree together on what data gets modified or added?

**Lilya Tessler:**

The agreement is called a consensus mechanism. So, various blockchains, each one has its own consensus mechanism. It's the equivalent of a corporate governance structure that you would have in a corporation. It's the same consensus mechanism that's applied for a network that's agreed to initially when the network is launched, and cannot be modified unless a certain percentage of that network agrees to a change to that governance structure.

**Sam Gandhi:**

Why is it called blockchain?

**Lilya Tessler:**

The data that's added to the ledger is added in blocks of information, and it is secured using cryptography. So, cryptographic keys are used in order to add new information to the chain, and it's linked, and so, you can never, once the block is added, can never be modified or changed in the blockchain ledger.

**Sam Gandhi:**

Unless everybody agrees.

**Lilya Tessler:**

Yes.

**Sam Gandhi:**

And how does somebody join the blockchain ledger?

**Lilya Tessler:**

There are different ways to join, depending on the type of blockchain. So, there is no one blockchain, but typically, for an open-source blockchain network, which are

generally public blockchains, anyone can go on a public web site that has the open-source code, download that code, and start running their own carbon copy of that blockchain, and become a participant on that network.

**Sam Gandhi:**

Why do people want to use blockchain technology, as opposed to the regular old way of contracting?

**Lilya Tessler:**

Well, there are a number of advantages. So, first, there's a level of transparency that the various participants on the network can have, depending on the permissioning of each particular system. The technology's designed based on certain cryptography to be tamper-resistant, so, any party that participates can trust that no other party on the network can manipulate or change the data that's on that network. There's also a level of cost and speed that's achieved through blockchain.

Anyone around the world can use this technology and transact at lightning speed that has never been seen before, and it allows transactions on a peer-to-peer basis, and cuts out potential intermediaries that would've traditionally been part of the transaction life cycle, which also improves cost and efficiency.

**Sam Gandhi:**

What are the industries that are gravitating more towards using blockchain technology?

**Lilya Tessler:**

A few of the most prominent use cases that we've seen, first, is in supply-chain management. So, a global consumer retailer can get all of the vendors and participants across the supply chain on one shared network, and so, can track the provenance of any goods that make up any item from anywhere around the world, all on one shared system. That same system can be used to track invoices, and bills of lading, and payments among all of those participants.

It can also be able to track the quality of the goods that are being added to that network. So, there are a number of benefits that we're seeing in supply-chain management, for example.

**Sam Gandhi:**

So, it seems like we're moving from a historically very centralized type of financial or contracting system to something that's more open and less centralized. Is that safe?

**Lilya Tessler:**

Certainly, security is part of, something that, there are benefits that come with blockchain technology, but also certain drawbacks in technology that need to be considered. So, in the fact that there's shared access to the database, and its shared consensus mechanism we discussed, there is a level of security, because no new

information can be added or existing information be changed without all of the participants agreeing. So, there is a level of security.

It also really varies on what type of blockchain a company is using as to level of security. So, security as part of the governance mechanism comes with scale. So, the more participants that are on the network, the more that are sharing in the validation process, the more secure it is. So, part of the security is how much scalability and adoption there is in one particular blockchain.

**Sam Gandhi:**

Right, but you talked about using open-source software, that anybody can kind of download, you know, this open-source software from a web site. Most of our clients, when we deal with them, they're very concerned about encrypted communications, safe email, not using public internet, et cetera. So, if the technology uses open-source software, how safe really is that?

**Lilya Tessler:**

What's open-sourced is the actual code that is underlying the technology. So, you can use it to verify how the code works and how it's designed. Anyone can take that open-source code, actually create their own internal system using a variation of that code, but the data on that blockchain is not open-source. Not everyone can see that data, depending on which blockchain you're talking about. Even on a public blockchain, like Bitcoin, you mentioned earlier, a transaction from Party A to Party B, you can see that it happened, but you can't see through what that data is, who that person is. The actual data is secure.

**Sam Gandhi:**

The blockchain technology also, I understand, lets participants be anonymous. Does that mean that parties who are using that blockchain technology don't know exactly who they're transacting with?

**Lilya Tessler:**

Only a small set of blockchains are designed to really, truly be anonymous. Most blockchains that are public blockchains, in order to create a public/private key or transact in that blockchain, there's a verification process that you would need to go through, especially if you're transacting through exchanges or other regulated financial institutions. Everyone engages in AML KYC prior to facilitating those transactions. It's only a very small sub-set of blockchains that are being used for anonymous transactions, or even private-permission blockchains being used by financial institutions are all known actors that are involved in that network.

**Sam Gandhi:**

You're listening to the Sidley Podcast, and we're speaking today with Sidley partner Lilya Tessler about the brave new world of blockchain, and why it offers such promises and threats to the existing ways we do business. Blockchain technology, I think, has

been around for about, over ten years. Why all of a sudden has the landscape changed where businesses are more likely to use it now than before?

**Lilya Tessler:**

We're seeing a level of scalability and more mainstream adoption by businesses. It's taken time to have blockchains that can handle the amount and size of the data that businesses need to be able to be used on a global scale, really. It's not a US phenomenon, it's being used throughout the world, and you need a scalability element of blockchain. And so, you need the right technology to be able to handle the amount of data that businesses need in order to transact.

**Sam Gandhi:**

Lilya, who's adopting this technology? We've heard of financial institutions on Wall Street hiring hundreds and thousands of computer programmers, but are they the ones, really, at the leading forefront of developing this technology and using it?

**Lilya Tessler:**

So, we're seeing certainly bigger financial institutions or other enterprises adopting and evaluating how they can integrate the technology into their existing infrastructure, but they already have existing databases and proprietary systems, and the legacy systems are becoming much harder to integrate with this new technology. And so, we're seeing a lot of emerging companies developing the technology, adopting it, and getting to market faster because of how nimble they're able to be since all they have is the new technology, as opposed to the integration issue with legacy systems.

But in addition, there are a lot of regulatory hurdles that need to be overcome prior to big financial institutions adopting this technology. And so, that's why we've seen a slower adoption than typically of other technologies.

**Sam Gandhi:**

What are some of those regulatory hurdles?

**Lilya Tessler:**

The regulatory considerations we're seeing, that fit into four different buckets of categories. I would say, first there's financial services regulations that apply to this technology, regardless of whether it's a financial institution. So, we're seeing securities laws, commodities laws, money-transmission and banking laws, all relevant to the development and implementation of this technology, and at least here in the United States, we're seeing overlapping jurisdiction that the regulators are asserting on this technology.

But the regulations, like you mentioned, are not written for these types of peer-to-peer transactions, and so, that's something that a lot of the financial institutions are waiting for the regulators to catch up and provide more guidance in this area. The second bucket we're seeing is privacy, data security and consumer protection laws, and how

they apply to the data that's being recorded on this distributed-ledger technology. And then, we're seeing industry-specific regulation, so, as the technology's being adopted in different industries, there are regulations that may be applicable.

For example, in healthcare, there's HIPAA, or in media the FTC, weighing in on how this technology can be implemented in that particular industry, with their specific regulations. And then, lastly, there's a whole host of miscellaneous regulation, such as commercial law, considerations in taxation, others that need to be considered.

**Sam Gandhi:**

Lilya, we talked about how this technology is going to be changing how we transact business. How is it changing how we do everyday transactions?

**Lilya Tessler:**

So, for example, Sam, in the consumer-facing world, we're seeing social media being revolutionized using this blockchain technology. Consumers will not at any point know that they're using blockchain technologies underlying infrastructure, but some of the benefits that we're seeing is that the blockchain will provide a level of functionality we haven't seen before. So, users on a social media platform can record the content and have it stored on blockchain technology.

They can transfer that data to others. They can take control back of the data that they have, provide a level of privacy and transaction that they haven't in the past. And so, it's also being used for a level of authenticity of that data.

**Sam Gandhi:**

Lilya, there are other uses of blockchain technology that we've heard about. You referred to a supply chain. What are the other and most popular uses of blockchain besides digital currencies?

**Lilya Tessler:**

We're seeing a lot of interesting implementations in the insurance space, especially with the use of smart contracts, which is an application that can be built on top of blockchain technology, with respect to providing for instantaneous recording of insurance policies and payments under existing insurance policies. So, for example, one of the prominent examples typically used is in the case of a farmer that's looking to insure a frost event, and so, they enter into an agreement with an insurance company that writes a policy that if the weather drops below a certain temperature, they get an automatic payout.

Those terms are programmed to a smart contract, and so, that technology can integrate with the National Weather Service, also known as Oracle on the blockchain, and as soon as the temperature drops, the technology can be programmed to automatically send out a payment to that farmer, without the need to file an insurance claim to prove that the frost dropped, and if you are using a digital currency or other electronic

payment, can instantaneously send payment to that farmer, or otherwise mail them payment in other means.

**Sam Gandhi:**

And so, without even verifying whether the farmer's really the farmer because he's lost, he or she has lost all their records in the storm or the frost.

**Lilya Tessler:**

Yes. Yes, so, they'd be verified upon entering as a participant on the blockchain initially, prior to the smart contract being executed.

**Sam Gandhi:**

So, Lilya, how is blockchain technology disrupting how businesses contract with people, or how they operate their businesses?

**Lilya Tessler:**

So, for example, we're seeing a lot of standardization with respect to contracts. So, as I mentioned, smart contracts can be used to pre-program certain predefined terms, and then that eliminates the need for negotiation or contract departments renegotiating all of the terms, so only key business terms that can be pre-set and pre-programmed, and then will self-execute upon the occurrence of certain events among the parties, without the need for a substantial negotiation, especially with respect to what happens if things go wrong in the agreement, which is what oftentimes is being negotiated in the contracts.

**Sam Gandhi:**

So, does that mean we're going to eliminate or reduce litigation risk, questions about vague contracts, things are going to get executed quicker? Is that the intent?

**Lilya Tessler:**

Possibly over time, that's what we'll see, but it's important to note that smart contracts have not yet been tested in a court of law. So, there's no court that has said a smart contract is a valid legal contract. So, oftentimes we advise clients to in parallel still maintain written paper contracts, in the event that the smart contracts are not enforceable, but over time, we may see everything in a digital format.

**Sam Gandhi:**

So, the general counsel who has just hired 30 contract attorneys to look at contracts, are they going to hire ten coders to do all that? Is contracting all going away for smart contracts and coders?

**Lilya Tessler:**

We're seeing huge growth there in the blockchain technology/coder space. Every major university has developed its own blockchain educational program to help educate both technology individuals, but then we're also seeing law schools providing educational

program on blockchain, the use of smart contract technology, and how to integrate that with contracting programs. So, I don't think it will make the contract process obsolete, but it will change the role of lawyers and how they interact with the technology over time.

**Sam Gandhi:**

Can businesses really avoid using blockchain?

**Lilya Tessler:**

Over time, we're going to see a number of blockchain use cases for various businesses. This technology is not going away. We're certainly seeing a lot of early adopters that are in the process of developing the technology. Over time, businesses will have this technology integrated as different components of their business, but the most important part of getting in early is really being part of the decision-making process, helping build the infrastructure to be tailored to your particular business.

Otherwise later on, you'd just most likely be joining an existing blockchain network that's already been designed by your competitors or other parties in your infrastructure.

**Sam Gandhi:**

Is the US a leader in blockchain technology, or are there other countries that are really taking the lead on developing this?

**Lilya Tessler:**

We're seeing certainly a growth in the US, but one of the regions that we're seeing the most growth is certainly Asia. The US is trying to be a leader, but the regulatory uncertainty in the US is driving a lot of the innovation to other parts of the world. So, the regulatory considerations come hand in hand as to which countries are developing the technology, going forward.

**Sam Gandhi:**

Lilya, let's move to digital currencies, and most people, when they think of blockchain, they think of Bitcoin or other types of digital currencies. What's the difference?

**Lilya Tessler:**

Bitcoin is the very first blockchain, and the Bitcoin blockchain uses the Bitcoin token or digital currency to operate and run that infrastructure, and reward miners in that blockchain to add new transactions. But that Bitcoin blockchain can be used by any company to build on top of and use for other business use cases. In the Bitcoin blockchain, the primary governance is mining, and so, all miners get rewarded for verifying transactions using Bitcoin.

There's other blockchains that get verified using a staking mechanism, where there's other digital currencies that are used to reward those validators that verify those transactions.



**Sam Gandhi:**

Can you explain what we mean by “miners” in Bitcoin?

**Lilya Tessler:**

So, in order to verify and add new blocks to a blockchain transaction, various miners are big massive computers located in different parts of the world that calculate mathematical formulas using cryptography to add new data to the chain. And the first computer that calculates the formula correctly, and they're massive computers at different speeds operating, they are rewarded in the Bitcoin, for example, digital currency. And so, this mass verification process using mathematical formulas is really what mining is.

**Sam Gandhi:**

So, what you're saying is, Bitcoin is really both, it's both a digital currency, also a type of technology that people use to transact businesses with each other.

**Lilya Tessler:**

Yes, that is correct.

**Sam Gandhi:**

And if they transact using that technology, do they have to transact in Bitcoin, or can they do it with any type of other digital asset?

**Lilya Tessler:**

So, they can transact with any digital asset, or transfer any type of data on top of that blockchain. All you need the Bitcoin for is to operate the underlying technology and verify new data or transactions that are added to that.

**Sam Gandhi:**

So, is the goal to try to replace sovereign paper currency, such as dollars, or yen, or Euro, or pound?

**Lilya Tessler:**

There are a number, in hundreds, of digital currencies that are being used currently, none of which are backed by any sovereign government, but we are seeing a number of nations, including China, the US, and a consortium of other G7 countries that are trying to develop the use of blockchain technology to digitize their sovereign currency. And so, over time, rather than having dollars in your wallet, you're going to have digital dollars on your mobile device that you can use and transact at the same speed as you would paper currency.

**Sam Gandhi:**

If I pay with my phone already, don't I already have digital currency? What's the difference?

**Lilya Tessler:**

If you're speaking about other digital currencies that are not backed by a sovereign country, those digital currencies are not in any way redeemed by or supported by any nation. And so, first the value could fluctuate, and we're seeing a number of stablecoins that are backed by sovereign currency, but they don't hold the same backing as...

**Sam Gandhi:**

So, what you're saying is that I can transact with people who are transacting in that particular currency, whether it's dollars or other types of digital currencies?

**Lilya Tessler:**

Yes.

**Sam Gandhi:**

What's the incentive for people to have multiple digital currencies, as opposed to a few sovereign currencies that the value of their assets are tied to?

**Lilya Tessler:**

Currently, there is no sovereign digital currency. There could be, if there was, more of the individuals that are using other digital currencies that are not backed by a government moving to that, but having a digital representation of an asset on blockchain allows you to transact on any blockchain infrastructure almost instantaneously. So, if you think about clearance and settlement of securities transactions, you clear and settle a securities transaction.

On the other end, it takes a few days for the cash to move. If you had a digital version of that cash on the same blockchain, you could have almost instantaneous clearance and settlement of any securities transaction or any other asset class.

**Sam Gandhi:**

So, purely digital transactions, where you've got the underlying ledger is digital, and not a physical ledger at the Federal Reserve Bank or Fort Knox or something like that, makes transactions faster?

**Lilya Tessler:**

Yeah, it makes it faster. It may also cut out some of those intermediaries that slow down that process, and also that add on to the cost of clearing and settling those transactions.

**Sam Gandhi:**

Lilya, that's all the time we have today. Thanks so much for being on the podcast.

**Lilya Tessler:**

Great, thank you, Sam, for having me today.

**Sam Gandhi:**

You've been listening to the Sidley Podcast. I'm Sam Gandhi. Our executive producer is John Metaxas. You can hear more episodes at [Sidley.com/SidleyPodcast](https://www.sidley.com/SidleyPodcast), or subscribe on Apple Podcast, or wherever you get your podcasts.

*This presentation has been prepared by Sidley Austin LLP and Affiliated Partnerships (the Firm) for informational purposes and is not legal advice. This information is not intended to create, and receipt of it does not constitute, a lawyer-client relationship. All views and opinions expressed in this presentation are our own and you should not act upon this information without seeking advice from a lawyer licensed in your own jurisdiction. The Firm is not responsible for any errors or omissions in the content of this presentation or for damages arising from the use or performance of this presentation under any circumstances. Do not send us confidential information until you speak with one of our lawyers and receive our authorization to send that information to us. Providing information to the Firm will not create an attorney-client relationship in the absence of an express agreement by the Firm to create such a relationship, and will not prevent the Firm from representing someone else in connection with the matter in question or a related matter. The Firm makes no warranties, representations or claims of any kind concerning the information presented on or through this presentation. Attorney Advertising - Sidley Austin LLP, One South Dearborn, Chicago, IL 60603, +1 312 853 7000. Prior results do not guarantee a similar outcome.*