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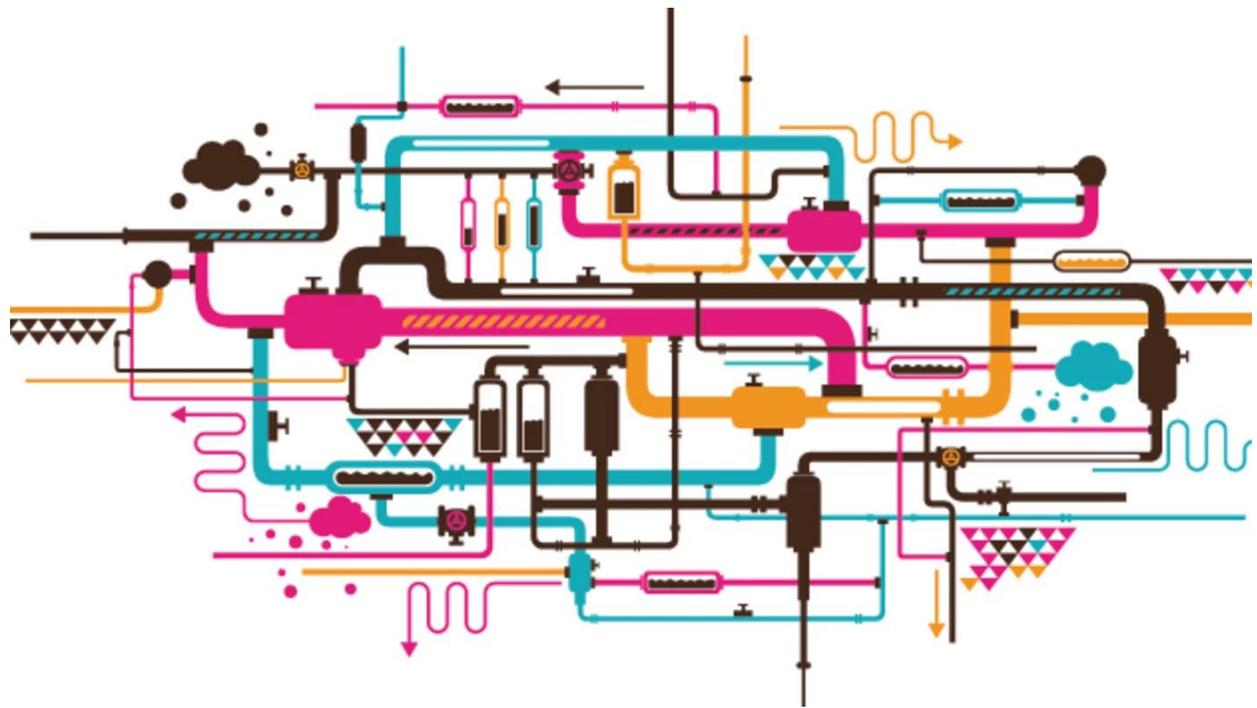
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Blockchain After Bitcoin

It's not just about crypto. The oft-misunderstood technology is set to reimagine business, banking and more.



BY FASTCO.WORKS 6 MINUTE READ

The world is changing at a breathtaking pace. Blink once, and you will have missed yet another disruption, another tech-driven innovation.

What's at the heart of this revolution? Data. Lots of it.

Thanks to innovations like wearables, GPS and industrial sensors, data is being generated, organized and analyzed in a massive way. Where oil fueled the economy for 50 years, data now holds that position.

That's where blockchain enters the picture.

Blockchain?

Think of blockchain as the key connector across this massive flow of data.

Blockchain technology is revolutionary and transformative. It is at the heart of a radical rethinking of both how we pay for things and how we verify who actually owns real and virtual assets.

More precisely, [blockchain is a digital ledger](#) that keeps an immutable record of all transactions that take place across a decentralized network. What differentiates blockchain is that the technology allows market participants to conduct transactions without the need for a centralized third party (i.e. a bank).

In its simplest terms, it is the technology that enables transactions to be safe, reliable, transparent and permanent. Underlying all of these transactions is a sophisticated cryptography, which provides a roadblock to hackers and cybercriminals.

So why is there all this skepticism about blockchain?

It goes back to its origin as the backbone of Bitcoin and other cryptocurrencies. Because of the volatility of Bitcoin, in particular, blockchain was seen to be volatile and unreliable. In fact, Bitcoin's volatility had far less to do with blockchain than it does with the way the technology was being used. Bitcoin and other cryptocurrencies, which have the power to change the way we pay for goods and services, was instead being used primarily as a highly speculative investment.

The potential applications for blockchain are nearly endless. Simply put, it can be used for any transaction requiring a contract or one regarding the need for a verified chain of activities and/or product ownership.

PwC has been exploring the many ways blockchain can improve outcomes for its clients and itself. It recognized, early on, the potential for blockchain to simplify transactions, while making them more reliable and verifiable in the process.

We have called upon two of PwC's blockchain leaders to help shine a light on current and possible business applications of blockchain. Grainne McNamara is the US Blockchain and Cryptocurrency Leader and Andy Ruggles serves as US National Practice Leader in PwC's Tax Reporting & Strategy.

Together, they address several game-changing use cases for blockchain.

SUPPLY CHAIN MANAGEMENT

McNamara sees supply chain management as an obvious use case for blockchain adoption. Supply chains are often complex, unreliable and difficult to accurately follow. Things that are often problematic in following the progression of current supply chains, including reliability and veracity of record keeping, can be potentially remedied with blockchain technologies and their built-in reliability and accuracy.

With each transaction along the chain entered and verified, there is no disputing how or where the supply chain is moving. The chain of ownership is recorded every step of the way and the records cannot be altered or challenged.

Blockchain provides consensus—everyone on the blockchain can see the chain of ownership for an asset on the blockchain. Records on the blockchain cannot be erased which is important for a transparent supply chain.

McNamara points to the aviation industry as one that can be greatly helped by blockchain technologies. It's an area PwC is currently deeply involved with.

“You have an entire ecosystem whose goal is to make sure the plane stays in the air,” McNamara says. “With jet fleets, there are so many people and technologies responsible for keeping a plane aloft and landing safely. You

have equipment manufacturers, maintenance and repair operators, you have communications systems and you have a ton of data being produced by the parts on the plane. We're basically dealing with a massive supply chain project that monitors and documents all the parts that are part of a plane and all of the people who touch them."

So where does blockchain fit in to all of this?

"The airline industry is now able to connect into that ecosystem for a much more efficient requisition of parts, understanding the actual physical condition of the parts, and knowing exactly who serviced the parts and when they were serviced," she notes. "You even know the credentials of the people touching the parts. When this information is transparently shared with other airlines, we can get a better understanding of how these parts are performing."

IDENTITY MANAGEMENT

Blockchain has enormous implications with regard to identity management. While many fear having all of their personal information on a single chain, the reality is that individuals will have control over how much information will be provided to each entity.

"With blockchain, you can choose to become the owner of your own data," McNamara says. "Organizations no longer need to collect and store every identity data attribute and thus, no single party has power over your identity. You get to decide what identity data attributes you share with each organization."

A simple example would be someone who has just moved to a new state and is looking to get a new driver's license. Blockchain would provide a reliable record of the individual's past licensing and their driving record.

"Digital identity is a big area," McNamara says. "More than one billion people have no official ID. Blockchain has the potential to offer a common solution available to every person and every organization. This has implications for health, for voting, even for national identity."

SIMPLIFICATION AND VERIFICATION OF FINANCIAL TRANSACTIONS

The goal of doing business is to have contracts and transactions that are as reliable, verifiable and transparent as possible. Automation, the kind that modern enterprise resource planning (ERP) solutions bring to the table, has sped up the process, but it is far from perfect. ERP helps businesses keep on top of everything from finance and accounting to supply-chain management and human resources. Despite the automation, data stored in individual ERP systems frequently gets out of sync, creating complications when trying to reconcile accounts.

“The foundation of what we’re trying to accomplish with tax and finance organizations is: How do you bring automation in a way that is eliminating waste and processes that exists in any work humans are driving?” Ruggles asks.

It is unlikely that blockchain will replace ERP systems. The more likely scenario will be for blockchain to serve as a [complement to, and core component of ERP](#). In the future, many core business processes will run on—or interoperate with—blockchain-based systems. This will enable companies to streamline processes, facilitate data sharing, and improve data integrity.

“With blockchain, reliability and transparency are baked in,” Ruggles notes.

HOW SOON WILL BLOCKCHAIN BE ADOPTED ON A MASSIVE LEVEL

Ruggles is optimistic, but cautiously so.

“The challenge of the last 20 years has been when people drive to new technology, they try to boil the ocean. They reach for an instantaneous and massive transformation and when you do that, it is very difficult to see successes,” Ruggles explains.

“The key to acceptance and adoption is to use blockchain in targeted ways. Blockchain will come into broad acceptance and application when

businesses and governments identify specific problems they are having and see how blockchain is best equipped to solve them.

“In the next 12 to 18 months we’re going to see targeted adoption across tax and finance. You’ll be seeing that with the top 10 to 20 percent of innovators.”

In [PwC’s 2018 Global Blockchain Survey](#) of 600 executives, the biggest barrier to blockchain adoption was regulatory uncertainty (48 percent), but that was closely followed by lack of trust among users (45 percent).

McNamara, who has seen that phenomenon in her day-to-day dealings with senior executives, agrees. Companies are not averse to eventually adopting blockchain technologies. They just haven’t reached a point where they fully trust them. “You need to build trust in the technology, trust in your business case, trust among users, and trust in an evolving regulatory environment.” she says.

This story was created for and commissioned by PwC.

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