# Restoring trust in the age of Covid-19

## Could Blockchain Technology Solve Trust Issues that Have Eluded the Law?

By Bruce Antley

I did not truly grasp how badly damaged trust is in our digital age until I took my two kids on a trip to the One World Trade Center building a couple of summers ago.  After stopping for a few moments of reflection at the 9/11 memorial and looking up at the top of the new skyscraper, we presented our tickets and took the elevator to the observation deck, 1,250 feet (almost 400 meters) above Manhattan.  When we exited the elevator, we were greeted by a grand view of the New York cityscape. My daughter and I stood awestruck by the spectacular panoramic view of one of the most spectacular cities in the world.

My daughter — by far the most observant of the three of us — must have noticed her younger brother wasn't joining in our fascination.  "Isn't that amazing?" she asked him. I looked down and saw that he had the same mouth-twisted expression of cynicism that I have when my wife and I are told that no one knows anything about the disappearance of the peanut butter from the pantry despite an empty jar in the trash, a spoon in the sink and two children with breath wreaking of Skippy.
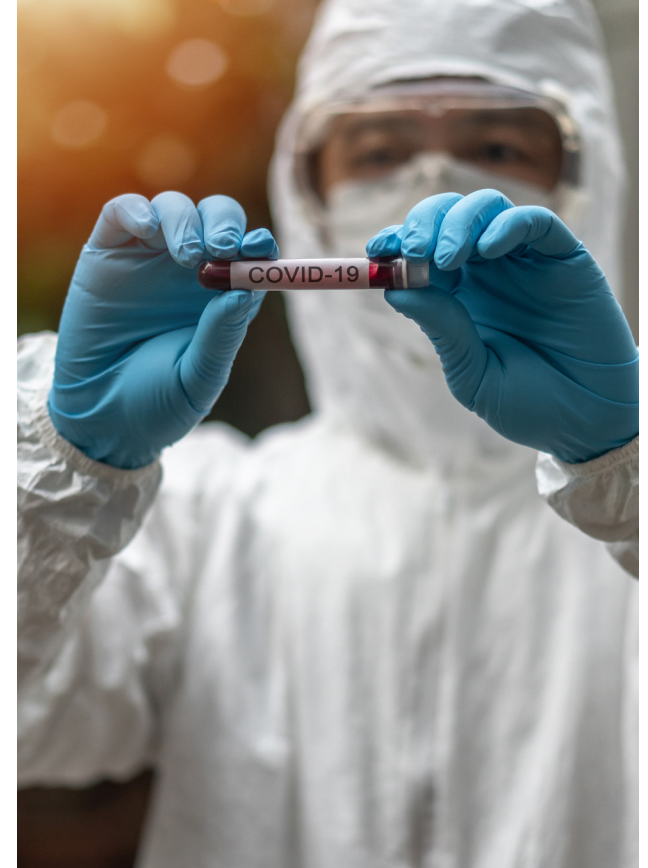
My daughter repeated the question to her brother.  "Isn't that amazing?" "No," he said.  "It's not real."

That was the moment when I grasped how our amazing technology has destroyed trust.  Artificial reality has pro-

gressed to the point that what we see is not necessarily real. To someone who has spent hours building environments in Roblox and Minecraft, like my son, a spectacular view of a spectacular city is plausibly the product of spectacular software.

Although amusing in the context of a family trip to a national landmark, the inability to trust what we see could be deadly during a worldwide pandemic.

As the Covid-19 virus sweeps across the world, decisions are being made that determine who lives and who dies, who joins the legions of unemployed and how long we must forego one of the most basic human needs – human contact. These decisions are being made based on models fueled by data that we can only hope is trustworthy.

Until recently, the term "supply chain" was mostly in the vocabulary of corporate strategists' and executives for retailers. Now, it's used in everyday conversations as we wonder whether we can trust the supply chain to deliver protective gear to health care workers and toilet paper to

Costco.

We also are trusting that a mask that says "N95" is actually capable of screening out germs. In ordinary times, a knockoff means a fake Gucci bag. In these extraordinary times, a knockoff could mean exposure to a deadly virus.

In a connected global economy that depends on goods and services – and data – from across the world, the law provides little in the way of remedies for breaches of trust.

Our commercial systems, our political systems and our health care systems depend on trust. For centuries and beyond, people traded and interacted primarily with people they knew; and trust was enforced within that small group. If you live in the Arctic tundra with a few dozen other people and you get caught selling spoiled fish, you'll find yourself pretty quickly alone on an iceberg with wolves and polar bears as your only companions. When you're transacting with people continents away through a global computer network, it's a little hard to use shunning as a defense against bad-faith dealing. And when your

health depends on political decisions and data from other cities, other regions and other nations, your ability is limited to hold accountable those in power.

Over time, the law has adapted to the broadening expanse of commerce. When the Postal system, railroads and the telephone enabled commerce to spread beyond neighbors

and across regional borders, the United States responded with numerous laws aimed at fraud that crossed local jurisdictional lines. It led to the Federal Trade Commission Act, which prohibits unfair and deceptive trade practices, and the Securities Act of 1933, which requires registration of securities. Other countries have similar laws.

But the effectiveness of the law in fighting fraud is limited when the parties to a transaction are beyond the reach of the jurisdiction of anti-fraud laws. When you are forced to trust governments in which you have no voice, you have no recourse if they suppress information or spread misinformation. During the Covid-19 pandemic, trust is even more threatened because human contact – which has traditionally been a key to trust-building – is highly restricted.

This is where a technology called blockchain (also known as distributed ledger technology) could play a role in restoring trust. Blockchain is best known as the technology behind Bitcoin, but its usefulness goes well beyond digital currencies.

What is blockchain? Blockchain is an electronic ledger of transactions. Transactions could be exchanges of digital money, but they could also be a record of an event, such as the manufacture of a respirator that is assigned a unique identifier. Text, photos and almost any kind of digital record can be stored on the ledger. The ledger is shared across a network of computers, and transactions are recorded onto the ledger only if a consensus of the computers on the network confirm the validity of the transaction. Transactions are logged on the ledger as part of a block, and the blocks are strung together in a chain, thus the name "blockchain."

One of the key attributes of digital assets – text, photos, data, etc. – is their ability to be copied and manipulated at almost no cost, but this attribute is a significant downside in circumstances where authenticity and validation are critical. Blockchain uses a combination of a public, shared ledger and cryptography to make it challenging to copy or alter digital assets that reside on a blockchain platform. Blockchain networks also optimize security by distributing resources broadly so that there is no single point of



HOW DOES
**BLOCKCHAIN**
WORK

A transaction is requested

The transaction is broadcasted to a network of nodes

The network validates the transaction using known algorithms

The transaction is unified with other transactions as a block of data.

The new block is added to the blockchain in a transparent and unalterable way.
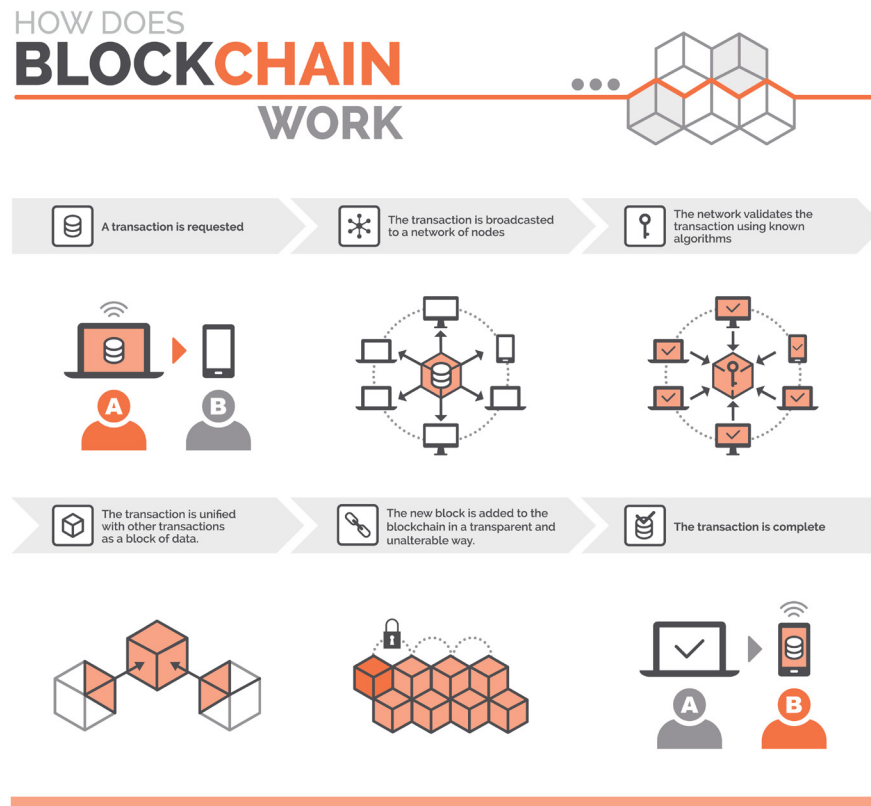
The transaction is complete

failure that can be attacked by hackers. These attributes make blockchain platforms ideal not only for digital currencies like Bitcoin but also for many other uses where trust and security are important.

How does blockchain technology encourage trust? There are two main ways: it has the power to verify transactions in a low-cost manner and it reduces the cost of networks.

Its power to verify transactions is perhaps the better known of its qualities. "The cloud-based ledger ensures that records can't be duplicated, manipulated or faked, and increased visibility in parts of the supply chain promotes an unprecedented level of trust," according to a re-
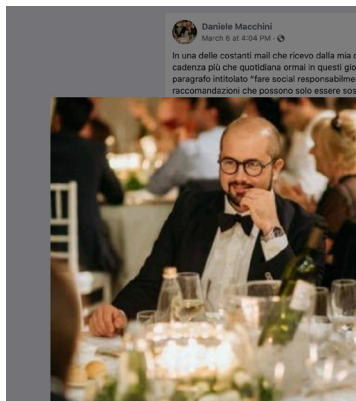
port from the World Economic Forum. "It means governments can better protect citizens, while business partners can be certain trading documents are real. Consumers can check the quality and provenance of products, and banks can reduce processing time. And it's all paperless."

Businesses have already begun using blockchain technology in their supply chains. Large retailers, such as Wal-Mart and Albertson's, are using blockchain records to identify the sources of produce, which allows them in the event of a recall to reduce waste by only disposing of the particular products at issue. The diamond industry has been using a blockchain-based product from London-based Everledger to help ensure that "blood dia-

monds" and fakes are not easily passed off to consumers.

This same technology could be used to ensure the authenticity of protective gear being used in the fight against the Covid-19 pandemic. It also can be used to remove virtual silos between industries. For example, N95 respirator masks are used in construction but are desperately needed right now in healh care. The trust and relationships that are core to supply chains do not exist across industries, and connecting these chains, particularly in the midst of a pandemic when trust-building human contact isn't feasible.

"Pick the biggest retailer you know, pick the biggest hospital you know, the biggest medical supplier you know — none of them or their supply chain is apparently big enough right now to help the situation," Jerry Cuomo, IBM's VP of blockchain technologies told Roll Call. "We need to connect systems. We need to share data."

Perhaps even more powerful than blockchain's ability to verify transactions is its power to decentralize control away from large tech platforms with market power and away from national governments.

A blockchain platform that is open to all participants (permissionless), however, mitigates this downside by distributing control across the network. "A permissionless system guarantees that no single entity can control the network. If you cannot control it, then you cannot exert market power over it," says Economist Cathy Barrera.

During the corona virus crisis, decentralization of control can have its downsides (See Zoombombing for what can happen when control over a platform is overly decentralized.) Having reliable, official sources of information is important. But we know that governments will not necessarily share information that is unfavorable.

Data, text, which can include news reports, photos and any other information that can be stored digitally can be recorded to a blockchain, and once written to a blockchain, it cannot be easily altered or suppressed. The data can be recorded from anywhere by anyone with a computer or a smartphone and an Internet connection.

The news media is chronicling the ongoing propaganda war between the United States and China, including alleged manipulation of critical data, regarding responsibility for the spread of the Covid-19 virus.

"Especially once the [Chinese] central government's propaganda mission to win the "people's war" against the virus became clear, numbers shifted to achieve that vision," according to a report in The Washington Post. "Such shifts would probably be subtle — not hundreds or thousands of hidden deaths, but instead excluding deaths that could be attributed to other types of pneumonia or heart failure, for instance."

Some of the most powerful narratives of the pandemic have come not from powerful governments of China and the United States, but instead from individuals posting on social media: businessman Fang Bin and journalist Chen Qiushi providing early reports on YouTube from Wuhan (both of whom disappeared in the midst of their reporting), Dr. Daniele Macchini posting on Facebook about the dire situation in Italy and serenade of an empty street during the quarantine in Siena posted by a Twitter user named valemercurii.

Blockchain technology can help ensure that these voices aren't silenced. In fact, at least one news report describes the use of the Ethereum blockchain platform by a Chinese journalist to post an interview with another doctor in Wuhan.

To succeed as a mainstream technology, however, purveyors of blockchain solutions will have to overcome negative public perceptions. The public connects blockchain with the use of Bitcoin in illegal transactions, stories about thefts of blockchain-based cryptocurrencies and shady fundraising schemes. To fully realize the potential of blockchain, regulators and blockchain proponents will need to reach consensus on the application of laws on a host of topics, ranging from banking regulations to privacy laws, to a technology that, by its nature, eludes control.

If they succeed, perhaps we can bring more trust to a world that needs it more than ever.

**Some of the most compelling information about the pandemic has come from individuals, not government.**

From top: Fang Bin (YouTube), Dr. Daniele Mcchini (Facebook) and Chen Quiushi (YouTube).