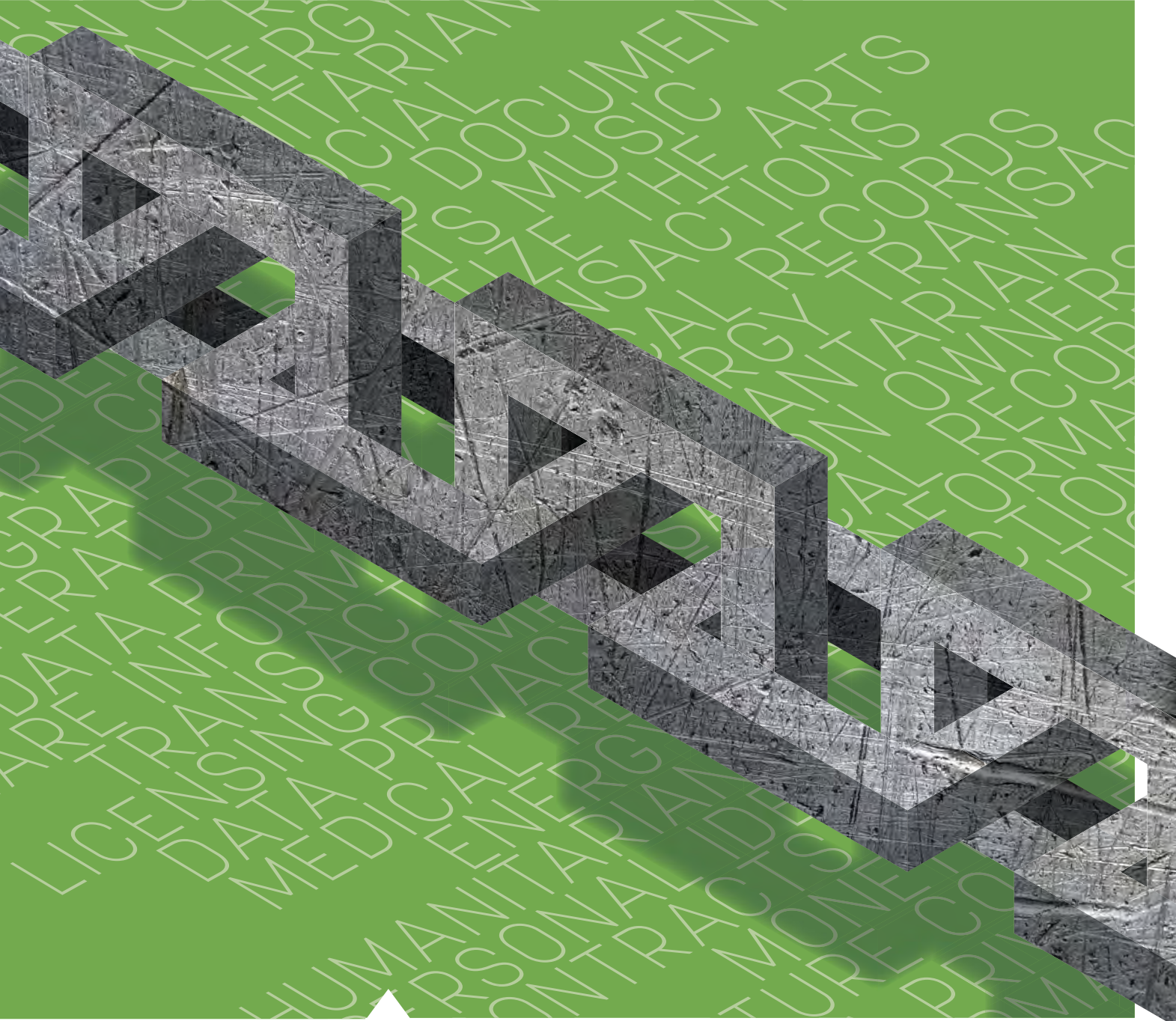




Business

FOR ALUMNI, PARENTS, AND FRIENDS OF THE GABELLI SCHOOL OF BUSINESS



INSIDE
BLOCKCHAIN:
BEYOND BITCOIN

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IMAGINE IF YOU COULD BUY AND
SELL YOUR HOME'S OWN SOLAR
POWER. OR IF YOU COULD VOTE IN
A MAJOR ELECTION WITHOUT
LEAVING YOUR HOUSE.

BLOCKCHAIN:

These are some of the practical ways blockchain could forever change our day-to-day lives.

Experts say this technology will not only streamline basic business transactions—increasing efficiencies and decreasing costs across industries—but also offer the promise of solutions to some of the world's persistent social challenges.

SO, WHAT IS BLOCKCHAIN?

The blockchain is a decentralized ledger that records and permanently secures information about transactions. It's transparent, so everyone involved sees the same information.

"In a sense, it's like a Google Doc that anyone can add to, but no one can delete or edit," explains Benjamin M. Cole, PhD, associate professor of strategy and statistics and resident scholar of blockchain at the Gabelli School. "But instead of one Google Doc, everyone has a copy—so it becomes a shared record of events. Everyone shares the same truth."

The system is distributed throughout many computers around the world with no central control agent. Through cryptography—writing or solving codes using complex mathematical algorithms—each block in the chain is secured and connected to the next. The codes are so random and elaborate that the chain is said to be unhackable.

LICENSING RIGHTS
OWNERSHIP
COMPENSATION
DATA PRIVACY
MEDICAL
RECORD ACCESS

BEYOND BITCOIN

ENERGY
TRANSACTIONS
HUMANITARIAN
IDENTITY
SOLUTIONS

BLOCKCHAIN: BEYOND BITCOIN

BLOCKS AND BITS

The first “true implementation of blockchain,” according to Cole, was the digital currency called bitcoin.

Bitcoin surfaced in 2008 as a new electronic cash system. Using blockchain technology, the digital currency is transferred from one person to the next, and the transfer is recorded on the shared ledger.

“It can’t be changed,” Cole says. “Once I transfer a digital asset to someone, I no longer own it and I no longer have control over it,” he continues. “That’s a big deal.”

As of this writing, one bitcoin was worth \$8,200, but the market is noted for wide fluctuations. Also, since bitcoin’s birth, many other cryptocurrencies have been introduced.

Acknowledging the buzz around bitcoin, Paul Johnson, an adjunct professor at the Gabelli School and 35-year veteran investor, advises interested parties to be cautious. He refers to bitcoin as a “cultural artifact—a collectible like a Jackson Pollock painting” rather than a currency.

“It has value because the community has given it value,” he says. “But it’s hard to determine the fundamental value of these things that have cultural appeal.”

Experts agree that this space is equivalent to the Internet boom. “You have a lot of people working on cutting-edge technology and some are going to get lucky, and some are not,” Cole says.

Either way, thanks to bitcoin, blockchain technology is emerging as a powerful tool that many believe has the potential to change the way we do business in nearly every sector. In fact, Johnson says that it has “explosive” potential to become a widely adopted technology standard.

REAL ESTATE AND HEALTHCARE ON THE BLOCK

Real estate is one industry in which Johnson sees blockchain as having a particularly huge impact.

“Possibly every piece of real estate in the country could be on the blockchain,” he says. A property would need to be entered into the blockchain only once, presumably for a fee. Then, when the owner wants to sell, there would be no need to hire anyone to verify ownership. It’s already documented.

“When you sell, you transfer ownership with the push of a button,” Johnson says. He predicts that the potential in the real estate market alone could amount to trillions of dollars.

Another sector blockchain could affect is healthcare, by offering the ability to improve data privacy and provide people with a means to control their own medical records. This would make it easier to share information with doctors and insurance providers, streamlining a process that is currently time-consuming and bogged down with paperwork.

OWN YOUR ART

The fields blockchain could change most radically, experts say, are the arts: music, photography, painting, literature, and virtually any artistic endeavor that yields some form of content.

Take music as an example. Typically, performing-rights organizations monitor how many times a song is played live or on the radio. They bill those who play it and pay the artist or record company. But the methods of data collection can be questionable, raising concerns about accuracy and whether artists receive proper royalties.

“There’s a lot of fuzziness around this, and there’s no way for the artist to know the truth,” Cole says. “All of the power rests in the hands of someone who could possibly cheat you.”

Cole explains that instead, a musician could make a song—a digital asset—and put it on a blockchain, which not only proves ownership, but also allows the artist to control how and when that song is played. By layering in “smart contracts,” protocols written into lines of code that allow one to specify terms of a contract, the artist can establish licensing agreements.

While the technology will eliminate the need for middlemen, it also opens doors for new ventures, such as Artbit, a distributed-ledger platform that allows artists and fans to “share and monetize artistic talent,” according to co-founder and COO Jean-Philippe Innocent, BS ’10. “It’s a different type of content-creation model.”

In a nutshell, anyone with a cell phone can record performers and post short videos on social media. The viewership they create will yield compensation for both the poster and the performer from advertisers who add filters into these videos.

“Because of the efficiency that this technology creates, they can pay you directly using micropayments,” Innocent explains. “It’s a competition where the content creator and the artist always win.” Brands get greater mileage out of their advertising dollars and easily can measure the return on their investment.

“The losers are the advertising agencies and the Googles of the world that tried to monetize data the same way Facebook does,” he continues. “Now these brands can go directly to the source instead of paying high premiums and having no idea what the ROI is.”

ENERGY YOU CAN BUY AND SELL

According to Johnson, solar factories in places like Saudi Arabia and Arizona are producing and selling energy for tiny fractions of the cost most homeowners pay today. Add to that the fact that “more solar panels were put on homes in the United States in the first quarter of this year than any other period in the history of this country. Add batteries to store your power and, eventually, when you end up with too much power, you can start selling it.”

Blockchain could be used to facilitate energy transactions, and homeowners could buy and sell their own power, reducing their reliance on oil or gas companies.

SOCIAL ORDER AND CHANGE

In addition to its many business applications, proponents of blockchain also see solutions to social issues.

For example, proving one’s identity in some developing nations is not as simple as in the United States, where many residents have a passport, driver’s license, or other government-issued photo ID. This creates downstream problems: Without the ability to prove your identity, it is nearly impossible to get a bank account, let alone receive healthcare or other basic essentials.

In their book *The Truth Machine: The Blockchain and the Future of Everything*, which celebrated its launch at Fordham early this year, Michael J. Casey and Paul Vigna describe a refugee camp in the Jordanian desert where 130,000 Syrians live “in conditions that a UN review described as ‘lawless.’” That camp is now the site of an experiment by the World Food Program, or WFP, that coordinates food distribution by pairing blockchain technology with an emerging form of proof of identity: scans of the irises of peoples’ eyes.

“In doing so, the WFP is tackling a giant administrative challenge: how to ensure, in an environment where theft is rampant and few people carry personal identifying documents, that everyone gets their fair share of food,” the authors say.

For Innocent, who serves as an art and entertainment advisor at Blockchain at UCLA, the university’s student community for people interested in the technology, blockchain holds a “special place in [his] heart” because of the potential social impact. “It represents community at its core and can eliminate countless inefficiencies.”

GETTING UP TO SPEED

The reason blockchain holds such promise is its ability to eliminate the middleman. But wouldn’t that translate into the loss of jobs?

Yes, Johnson says. At the same time, it will no doubt open up new job opportunities, like many technologies have before.

One of the greatest obstacles is addressing the learning curve: helping professionals to understand the complexities of blockchain and see how it could be applied in their industries. To that end, there is a need for education in academia and business.

The Gabelli School offers a new graduate-level secondary concentration in blockchain, and Cole teaches a course called Blockchain: Industry Disruptor and Creator. He also organized the Blockchain Disruptor Conference in April, which brought together newcomers and industry leaders to discuss related issues. Likewise, Johnson teaches and presents on the topic, most recently leading the Blockhouse Academy, a series of summer sessions offered in collaboration with the Gabelli School for non-matriculated students.

Though still in its infancy, blockchain has compelling potential that its proponents agree has yet to be unleashed. Many believe that full realization may happen five, 10, or even 15 years down the road.

Innocent agrees that there are still many questions. “Nobody has the answers. It changes daily. That’s part of the fun.”

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