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The Blockchain Transformation of Accounting and Auditing 10

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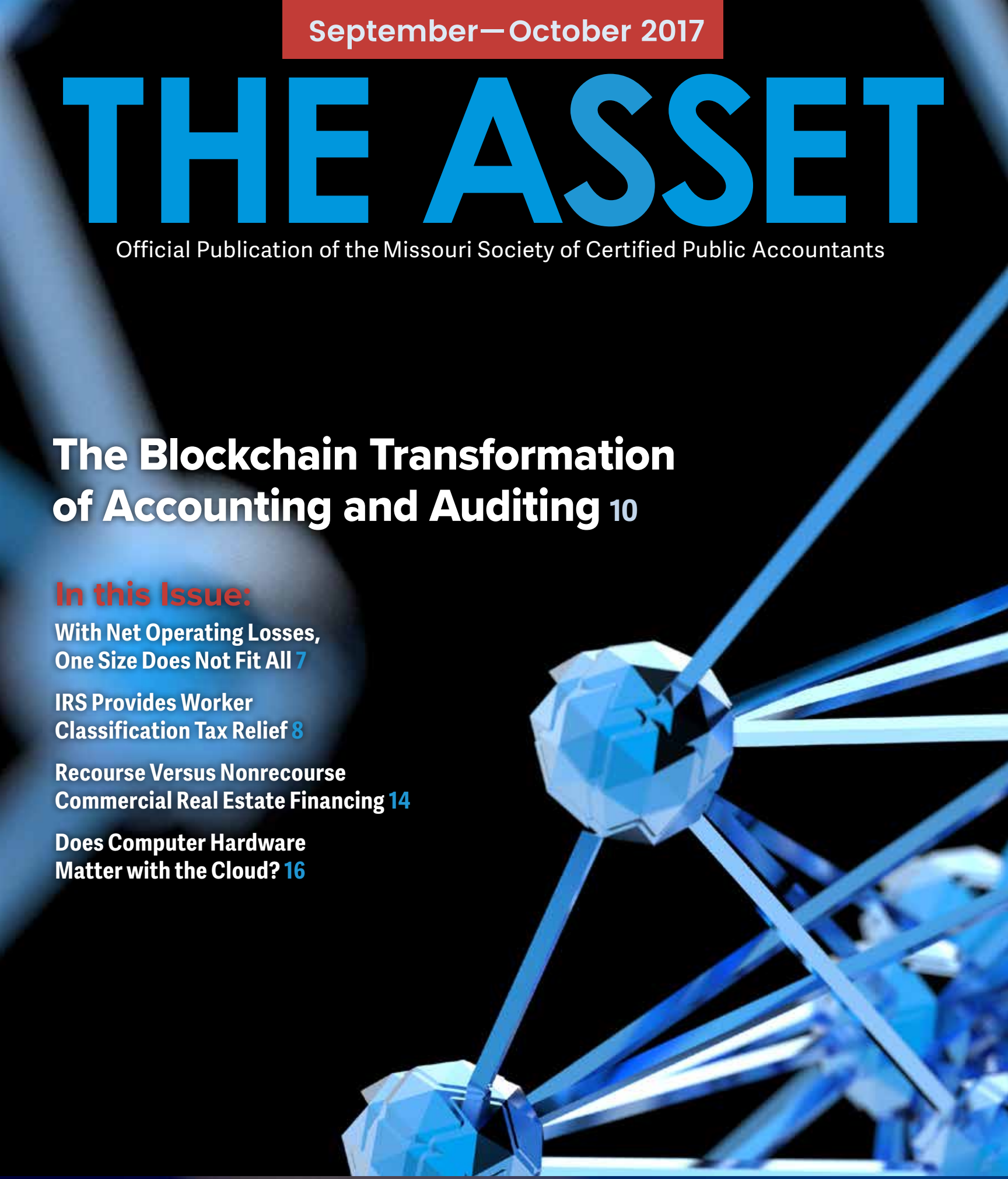


The Blockchain Transformation of Accounting and Auditing

By Jack Shaw

A Short Trip to the Near Future

As a professional technology futurist for the past 30 years, I've learned to heed the words of that great philosopher, Yogi Berra, who said, "Making predictions is very hard, especially about the future."

Nevertheless, I'm going to go out on a limb and make a few predictions about the future of the accounting and auditing profession. To understand how the roles of accountants and auditors will change, you need to understand how the world you'll be working in will change. So, please join me on a short trip to the near future.

In our first scene, a pre-teen needs orthodontic work. She and her parents don't just see the nearest orthodontist, or one a friend or relative recommends. Instead, they post an online request for proposals that can only be seen by registered orthodontists with offices nearby, and they receive several such proposals. Each proposal states their qualifications and a suggested treatment plan with costs based on the family's healthcare insurance plan.

After speaking to a couple of orthodontists by phone, the young lady and her parents select one to meet with in person.

Once they've reviewed the treatment plan and payment schedule with the orthodontist, they authorize it via digital signatures through their smartphones. The family's insurance makes progress payments within 30 seconds of completion of each visit. The family makes co-payments using their airline frequent flyer miles. And no paperwork is ever required.

In our second scene, an aircraft is halfway across the Atlantic when it detects that a critical part must be replaced on arrival. The airline's advanced procurement system scans the Internet to identify FAA certified providers of the required part. The system negotiates pricing, terms and conditions, selects a provider, and incorporates the terms into a legally enforceable, online "smart contract."

The part's design is then downloaded to a 3-D printer at the airport, and the part is waiting when the aircraft arrives.

"Change does not necessarily assure progress, but progress implacably requires change."

-Henry Steele Commager

In our third scene, a young couple is buying a new home. They first solicit offers from qualified mortgage providers by authorizing them to securely review their online credit histories. Each mortgage provider responds with approval for a home mortgage within a specified purchase price range.

The couple then "visits" houses via virtual reality and selects one they'll go to see in person. On their way, they request a title search, and ask each mortgage provider to propose a mortgage plan for this specific property. On arrival, they're delighted that the house is just as nice as they had thought.

They agree on a purchase price with the seller and select a mortgage plan. Because the title search has been completed by this time, they close the deal on the spot—again via digital signatures on their smartphones. No paperwork, no brokers, no attorneys.

And, no keys are even exchanged as the house and all its systems are now controlled via their own biometrics, such as fingerprints, voiceprints, and retinal scans. What will make these extraordinary examples of innovation possible? Well, certainly a number of technologies come into play—3-D printing, virtual reality, biometrics, and more.

But one other technology runs through all of these examples. Many have already recognized that this technology is the most significant to emerge since the Internet itself. This technology doesn't simply enable improvements in specific areas. It facilitates the digital transformation of entire business and social ecosystems. The potential applications of this exciting new technology extend across every industry—including accounting and auditing.

While this technology has been around for nearly a decade, most people have just heard of it in the past year or two. It's called blockchain. No less reputable a publication than *The Economist* magazine said this technology is the most important advance in recordkeeping since the invention of double-entry bookkeeping in Florence, Italy in 1494—more than 500 years ago.

When keynoting the Global Blockchain Week Conference in London earlier this year, I pointed out that wherever people, processes, businesses, government, or the social good requires proof of identity, of ownership, of transactions, or of contractual commitments, blockchain technologies promise to meet those needs with a degree of trust and integrity never before possible.

What Blockchain Does

How do blockchain technologies do that? Well, they do four important things.

First, they create a permanent, immutable, signed, and time-stamped record of identity, ownership, transactions or contractual commitments.

Second, they allow two or more entities—people, businesses or other organizations—to share this information on the internet without having to rely on any one of the others or to pay a third-party service to be the master record keeper. This has huge implications for most industries because it eliminates the need for businesses that do nothing more than act as informational intermediaries.

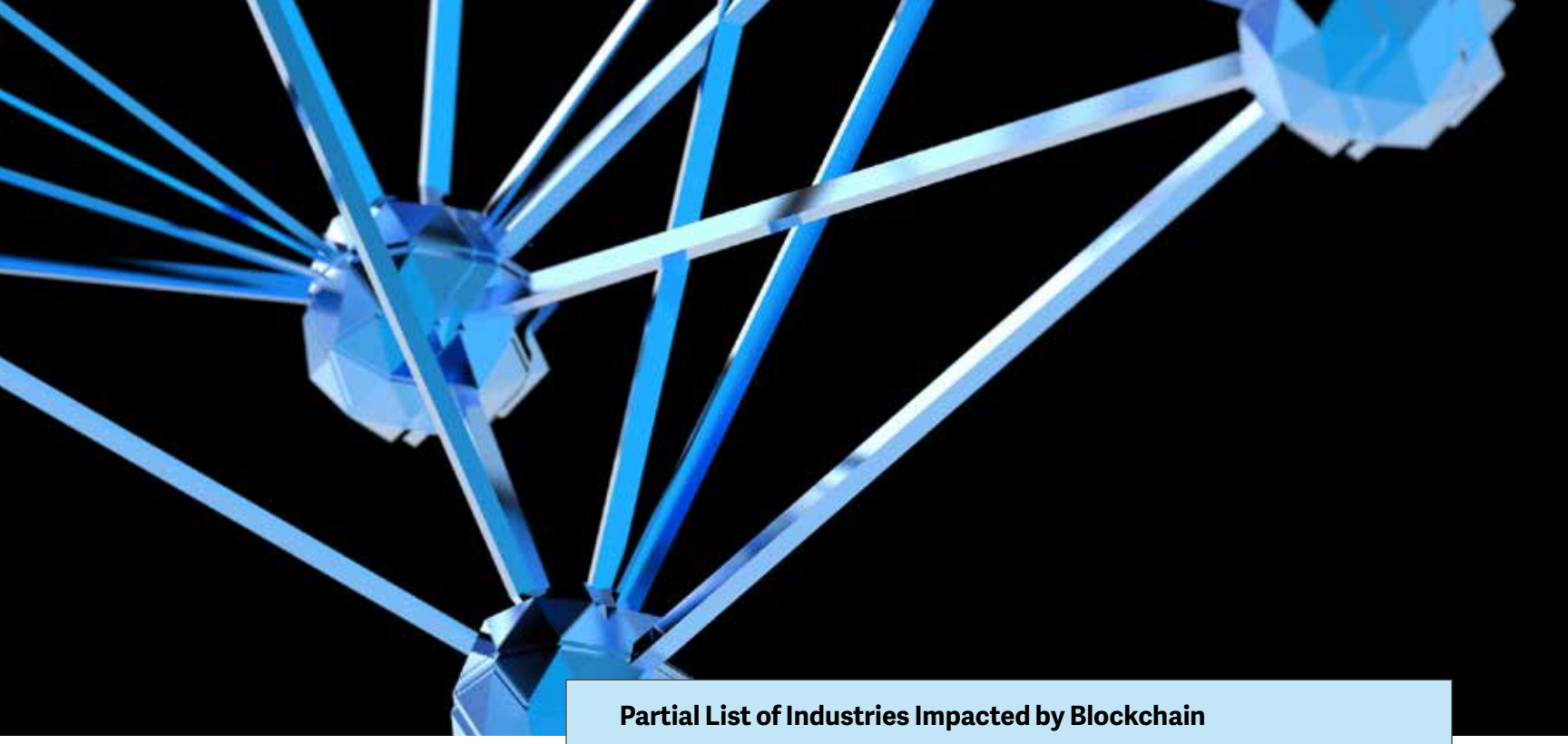
Third, they provide complete transparency for all those so authorized to easily view or update that information.

And fourth, they provide essentially un-hackable security against those who are not authorized to change or even see that information.

Applications of Blockchain

The first use case for the blockchain was the digital currency, bitcoin. In fact, blockchain technology was originally developed to enable this first, functional, digital currency. For more than eight years now, the bitcoin blockchain has been working, and billions of dollars of transactions have taken place. Yet, despite the efforts of the world's most cunning digital criminals, the bitcoin blockchain has never been hacked.

So, people quickly realized that, if they can use blockchain for digital currency, they can also use it for other digital assets, such as: electronic medical records, 3-D printing design files, and real estate property deeds.



Partial List of Industries Impacted by Blockchain

- Accounting/auditing
- Construction
- Energy
- Entertainment
- Financial services
- Government/NFP
- Healthcare/life sciences
- Insurance
- Law/legal services
- Logistics/transportation
- Manufacturing
- Media
- Real estate
- Retail
- Supply chain
- Technology

One of the items that can be stored on a blockchain is a smart contract. This is more than just a permanent record of a traditional contract created in a word processor. It's a dynamic contract that can enforce its own provisions. A smart contract is a computer program that runs on a blockchain and can control assets on that blockchain, track what has happened to date, and respond to incoming information or events. For example, a smart contract could respond to the information that an orthodontic visit was completed by automatically transferring funds for a progress payment into the orthodontist's account from the healthcare payer.

Blockchain technology is already producing astonishing results. For example, last fall, I keynoted the Global Big Data Conference in Qingdao, a major port on the northeast coast of China. Coincidentally, the weekend before the conference, a ship arrived in Qingdao with a load of cotton being sold from a company in Houston to a buyer in China. Typically, in international trade today, processing the paperwork to transfer ownership and to pay the seller and the freight carrier takes approximately 10 days. In this case though, because the information was shared on the blockchain, ownership was transferred, and the seller and the freight carrier were paid in full in 10 minutes. And, I was able to tell my audience in Qingdao about it just three days later!

The examples cited above are just a few of the industries impacted by blockchain. There are dozens more. Many of these industries have already formed formal industry blockchain consortia. And those consortia, in turn, have identified hundreds of use cases for blockchain technology.

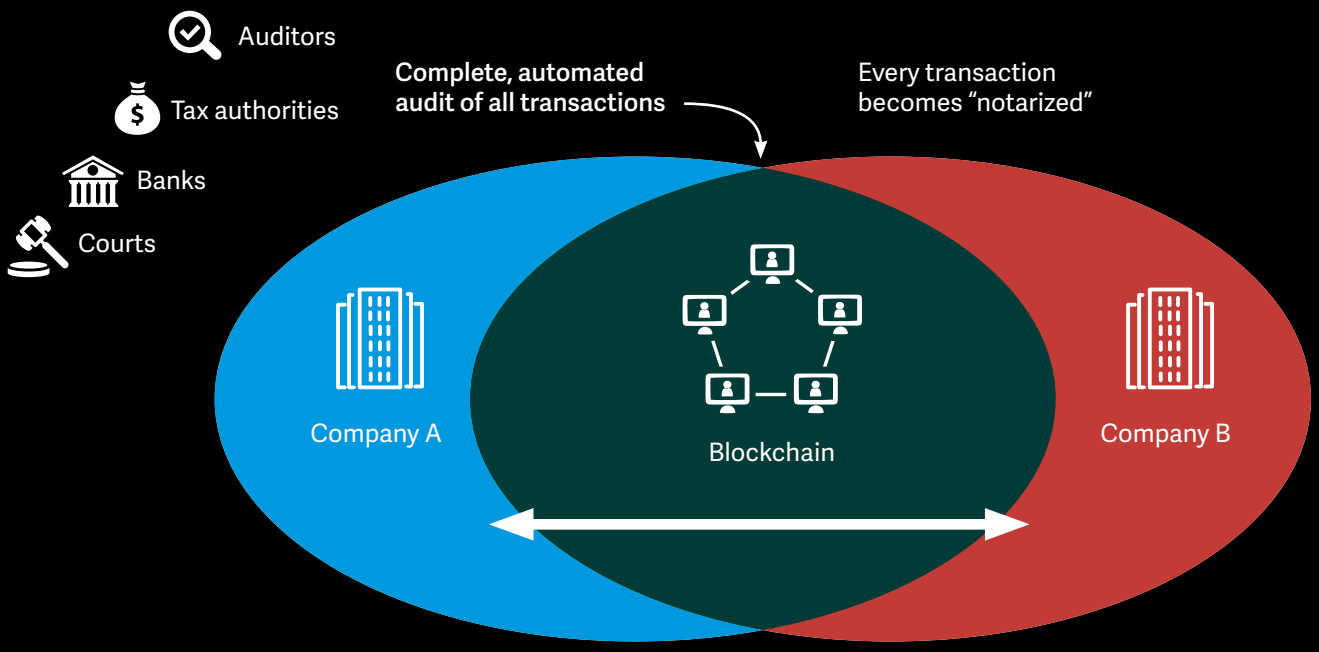
What Blockchain Means for Accountants and Auditors

Clients are making significant investments in advanced technologies. They expect accounting and auditing to keep pace. With blockchain, all of the participants in any given ecosystem can have shared ledgers of the details of every transaction that gives rise to accounting entries. The shared ledgers can be a single source of truth for every player.

They can also provide read-only access to authorized external entities such as regulators and auditors who can instantly and automatically verify and validate those transactions for reporting or other regulatory purposes. As a result, audits will become much more analytical, at least semi-automated, and even continuous.

This will have a huge impact on the accounting and auditing professions—both for CPA firms and for internal accountants and auditors. We're going to need to rethink how we manage the bookkeeping, accounting, and auditing processes in our organizations. When you integrate blockchain, analytics and artificial intelligence, you can uncover anomalies in real time. You won't have to wait until the end of the month, quarter or year.

And, there will certainly be little need for people to paw through file cabinets or double check sample transactions to discover that there was a fraudulent transaction eight months ago. Material misstatements and financial irregularities could be uncovered and stopped as



Blockchain entry serves in both companies' accounting

they occur, and in many cases, could be prevented entirely. Long gone are the days of the traditional green-shaded accountant, sitting and patiently cross-footing debits and credits.

There will still be jobs for human auditors, but the nature of those jobs is going to be very different. People will apply business analytics not only to manage risks but also to identify opportunities. Accountants and auditors who understand, monitor, and improve analytical and cognitive systems and processes are the ones who are going to thrive.

So the role is going to shift away from after-the-fact scorekeeping, which is going to be much more highly automated. Instead, accountants and auditors will design, monitor and tune business analytics. They'll oversee the automation of accounting and auditing, helping to develop and implement new systems. And, they'll continue to evaluate the underlying assumptions and estimates.

The really smart part of the work is going to become the most important part of the work. It's not going to require as many people, but the people that it requires will need to be much more skilled in their use of analytical tools of various types.

The impact on accountants and auditors will be very positive. Blockchain will enable changes that will improve auditor productivity and allow them to spend more time exercising their professional judgment. This will provide greater insights into trends in customer behavior, operations, and other key business factors—all of which will likely make the job much more rewarding.

What Blockchain Means for CPA Firms

CPA firms, specifically, will need to ask themselves two key questions:

- How do we stay a step ahead of our clients and help them adapt to inevitable changes?
- How do we leverage emerging technologies to deliver more value more productively?

The answer in both cases starts with education about blockchain and its impact on accounting and auditing. Of course, you'll need a handful of experts, but that is not enough. Everyone will have to understand the basics.

In addition, you'll have to educate your clients. This is not just about advising your clients' financial organizations on changes to accounting and auditing processes. You'll also be expected to provide thought leadership to help their other C-level executives and senior managers understand the strategic implications of blockchain and related emerging technologies for their business.

If you think we've seen a lot of changes in our world in the 10 years since the first smartphones were introduced, you ain't seen nothin' yet! Driven by a host of emerging technologies, most importantly blockchain, we'll see more change in the next 10 years than there's been in the past 50.

To keep up, you're going to have to change. You'll have to change your mindset. You'll have to change your organizational culture. You'll have to change your business processes. You'll have to change your business models. You'll have to change your business ecosystems. That's a lot of change!

But, as the famed historian Henry Steele Commager said more than a century ago, "Change does not necessarily assure progress, but progress implacably requires change."

Now is the time to embrace blockchain as a powerful new tool to help change your business, change the accounting and auditing profession, and change the world.

Jack Shaw is the executive director of the American Blockchain Council. He leads blockchain executive seminars for CPA firms and their clients.

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