



Q&A

How Blockchain Is Reshaping Audit and Assurance

An Interview with David Uhryniak
and Matthew Schell

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Blockchain is set to have a significant impact on audit and assurance. Today's auditors need to understand how transactions are recorded in the blockchain and how to design tests to evaluate the reliability of the blockchain, a process that will require IT specialists and specialized tools.

Both David Uhryniak and Matthew Schell say that blockchain will survive the hype, pointing to training at universities, patents filed, and accelerated adoption by some of the largest companies in the world.

Uhryniak and Schell share about the specific areas CFOs should be aware of that blockchain has the potential to disrupt, and how the technology will affect audit and assurance.



Q: What are the most common misconceptions you hear from clients about blockchain?

A: **Matthew Schell:** I think the most common misconception is that blockchain refers to bitcoin or some other type of cryptocurrency.

Blockchain is the underlying technology behind cryptocurrency and is frequently one of the first ways individuals become aware of distributed ledger technology (DLT) in general, but blockchain is much broader than just an individual asset class or particular virtual coin or token.

David Uhryniak: The space is moving very rapidly, and over the next 12 months the only sure thing is that it's going to continue to evolve. Even the misconceptions of the technology are evolving rapidly and have done so over the past year – even over the past six months – as the technology becomes increasingly mainstream. For example, many potential users get confused by terms such as "Ethereum" and "Hyperledger," and I think there's just a general misunderstanding of the roles of these development platforms within blockchain.

Another topic that is likely to add to possible misunderstanding is the development of blockchain as service offerings, which are being developed by several companies. Ironically, the intention of the blockchain as a service offering is to reduce the complexity of establishing a blockchain. In the near term, however, it is possible they will lead to additional misconceptions.

Q: Are the misconceptions preventing clients from starting on the blockchain/DLT journey?

A: **David Uhryniak:** I do not believe that misconceptions are limiting blockchain adoption. I think it's more that company leaders are trying to become educated about the technology, and often they are self-educating and reading about the technology online from different sources, leading to misunderstandings. I think it's somewhat difficult to learn about blockchain using just online sources because there is so much hype. If users can get to the right sources, that will clear up a lot.

Overall, I view the increased interest in and desire to become educated about the technology as a harbinger of increasing adoption. Business leaders seem to know they can gain benefits by adopting the technology. They are trying to understand exactly what those benefits are and to what businesses they should apply the technology. To help our clients understand which businesses will benefit from blockchain application, we have developed a comprehensive framework that clearly defines the appropriate conditions and situations for the technology.

Q: What are the specific areas CFOs should be aware of that blockchain has the potential to disrupt?

A: **David Uhryniak:** Initially we can look at the more obvious applications, such as securities settlement, capital raising, and cross-border payments. But the applications for CFOs go even further. When you think about it as a whole, from a CFO's perspective blockchain can be an efficiency-creating technology. To help define the benefits, we have developed a model that categorizes benefits as relating to scale, efficiency, engagement, and transparency (SEET). This framework enables our clients to understand exactly how the business will benefit from blockchain adoption.

Matthew Schell: We are starting to see more interesting applications being explored that add value or increase efficiency. One application that adds value related to the supply chain is blockchain to demonstrate provenance. For example, today we live in a culture that is very interested in the source and quality of its food, and being able to know where the food came from or what antibiotics an animal received has value to the end consumer. In another example, a shipping and logistics company filed a patent application¹ to consolidate and promote efficiencies while potentially using multiple carriers to deliver shipments. In yet another example, an insurance company is exploring the use of blockchain to securely automate the subrogation process.²



Q: How will blockchain affect audit and assurance?

A: Matthew Schell: As we're gearing up and thinking about the new audit procedures and adapting our audit methodology and technology, we're constantly looking more and more for people with skill sets that include elements of technology. We've seen that with emerging technologies besides blockchain, and I think when people use blockchain that will only increase the importance of technology expertise.

Audit firm service offerings – and the ways auditors work – are likely to evolve. As we think about how blockchain might be used, whether it improves the movement of goods or does some kind of settlement or payments, auditors need to understand how the transactions are recorded in the blockchain. The underlying protocols, permissions, and cryptography associated with the blockchain often are designed to make sure they are resilient to manipulation. Thus, the auditor needs to design tests to evaluate the reliability of the blockchain, which often will require IT specialists and specialized tools.

Typically the process of reviewing a blockchain involves using some sort of blockchain explorer application, but even the process of being able to use such a utility first requires validation that the tool is designed adequately and operating effectively to obtain and extract the appropriate information from the blockchain. At a more granular level, smart contracts (digital self-executing contracts) might be embedded in the blockchain rather than recorded on paper as in the past. Accordingly, the auditor might need to design testing to understand how the presence of smart contracts affects underlying rights and obligations on the blockchain; for example, does the company own an underlying asset or just have a right to purchase an underlying asset? The auditor also might need to perform testing to make sure that those contracts are functioning the way that they were designed or intended. Ultimately, even if something is recorded in a blockchain, the old saying of "garbage in, garbage out" still applies. This was a topic in a speech by a Public Company Accounting Oversight Board member, Kathleen Hamm. She identified that "Blockchain does not magically make information contained within it inherently trustworthy. Events recorded in the chain are not necessarily accurate and complete. Recording a transaction on a blockchain does not alleviate the risk that the transaction is unauthorized, fraudulent, or illegal. Blockchain also does not address threats that parties to a transaction are related, or that side agreements exist that are not reflected in the chain. And nothing in the technology ensures proper classification of transactions in the financial statements."³

The last thing I would mention is when a database is constantly updated and accessible or includes a complete listing of all the different transactions as well as a full population, it is open to application of a lot of the different emerging tech areas to achieve more automated real-time audits. Whether we're talking internal audits or external audits versus manual audits or sample-based audits, that change is evolving here. It's evolving in other places as well.

David Uhryniak: In financial audit, we're developing a continuous audit process in which the evidence for transactions is gathered in real time and eliminates the need for quarterly or periodic checks.

In internal audit, there isn't necessarily a blockchain use case. However, internal auditors need to be very aware of the technology and how it works. One of the things we're doing is developing a framework for internal auditors to follow as their companies adopt the technology and apply it to very complex processes. This includes defining governance, risk management, and control procedures for blockchain.

Q: Do you think blockchain will survive the hype?

A: **David Uhlryniak:** Yes, I think it will, and we have seen anecdotal evidence that supports that view. If you look at the technology in terms of the hype cycle, I think it's fair to say that blockchain hype is now in the trough of disillusionment. But over the past few months we're seeing in the market rising interest and greater use of the technology in real-world settings. Additionally, there continue to be more patents filed, more university-level education, and accelerated adoption by some of the largest companies in the world.

Matthew Schell: A lot of forces point toward trying to be able to experiment with blockchain technology. Whether you talk about universities that are focused on training people to know this technology, companies that are looking for ways to use it, or audit firms that are looking at how to audit it, the technology is receiving a lot of attention. However, I think it's fair to say with any new technology, when you're experimenting with different things, there's going to be a fair number of ideas that you find out aren't necessarily a good fit, and your main goal is to identify those quickly. Regardless, blockchain is likely to significantly change the way that business is done and recorded.





Learn more

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¹ United Parcel Service of America Inc., United States Patent Application, number 15/932328, filed Feb. 16, 2018, <http://appft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=H1OFF&d=PG01&p=1&u=%2Fnetacgi%2FPTO%2Fsrchnum.html&r=1&f=G&l=50&s1=%2220180232693%22.PGNR.&OS=DN/20180232693&RS=DN/20180232693>

² "State Farm Testing Blockchain Solution for Auto Claims Subrogation," State Farm news release, Dec. 10, 2018, <https://newsroom.statefarm.com/testing-blockchain-for-subrogation/>

³ Kathleen Hamm, "Mexican Mangos, Diamonds, Cargo Shipping Containers, Oh My! What Auditors Need to Know About Blockchain and Other Emerging Technologies: A Regulator's Perspective," speech at the 43rd World Continuous Auditing & Reporting Symposium, Nov. 2, 2018, <https://pcaobus.org/News/Speech/Pages/what-auditors-need-to-know-blockchain-other-emerging-technologies.aspx>

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AUDIT-19002-004D