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A realistic approach to blockchain for health care CIOs

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Mike Jacobs is a senior distinguished engineer for product engineering and data solutions at Optum. He's a voting member of the U.S. National Body working on international standards for blockchain and distributed ledger technologies. Before joining Optum, Mike served as chief architect for Mayo Collaborative Services and the Department of Laboratory Medicine and Pathology at Mayo Clinic.

70% of all size payer organizations expect blockchain to be integrated into their systems by Q1 2019.[1]

Building a blockchain mindset in your organization

Health care is an industry plagued by data silos. Until blockchain, no technology has been able to solve the issue of data sharing beyond system or enterprise borders while keeping all those silos in synch. As lines continue to blur across the health care sector, data accuracy and sharing are becoming the linchpin of cost containment.

Many speculate that blockchain will solve the complex data problems in health care. It will prevent data breaches. It will shift the ownership of personal health data from health systems to consumers. It will give consumers transparency of their entire record in one single source of truth. It will facilitate collaboration among traditional competitors to streamline business processes. The potential is alluring. Thus health care organizations are eager to learn how much value they can gain from this technology.

In this article, Mike Jacobs and Lorraine Frias discuss how health care CIOs can effectively approach a blockchain initiative. Mike Jacobs is a senior distinguished engineer for product engineering and data solutions at Optum. Lorraine Frias is a senior director of strategic initiatives and a leader in the Advanced Technology Collaborative at Optum.

Q1 What is the current state of blockchain in commercial applications?

MIKE JACOBS: Blockchain is already in its third generation. After its birth in 2008 as the tracking database for bitcoin ownership, companies used blockchain for inter-organizational cooperation. Blockchain 2.0 gave rise to "Ethereum." This is an open-source, public blockchain platform that enables small computer programs called "smart contracts." Smart contracts enable exchange of new financial instruments that have attributes similar to currencies like the dollar, commodities like gold and securities like stocks. Today, with blockchain in its third phase of maturity, businesses are experimenting with it to track, trade, find, collect, synchronize and validate data. Key to these efforts is finding ways to drive out costs associated with data management.

LORRAINE FRIAS

Senior Director
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Lorraine Frias is senior director of strategic initiatives and a leader in the Advanced Technology Collaborative at Optum. She joined UnitedHealth Group in 2012 to apply her extensive innovation experience to health care. Before that, Lorraine spent more than 20 years designing and developing innovative programs and products for Fortune 500 customers at BI Worldwide.

The U.S. health care industry spends more than $2.1B annually to maintain provider databases. **An estimated 75% of that cost could be eliminated with a "single source of truth."**

Q2 Will providers, payers and consumers flock to this technology?

MIKE JACOBS: There's a lot of hype and misinformation about what blockchain can and can't do today. By way of definition, blockchain is a digital ledger of transactions that are chronologically recorded and tamper-resistant. Blockchain makes it possible to trace information back to its original source and view every detail in between. It simplifies commercial relationships by letting an organization track and trade something of value (such as data) without a middleman.

Blockchain enables organizations to collaborate on problems that pose little or no risk to competitive positions. But even where there's willingness, we may need to create incentives to participate. Blockchain use cases should be strongly vetted to confirm the ROI for participating organizations. When payers strip away blockchain hype and understand its utility for solving data quality problems, they can begin to experiment. We believe payers will take the lead and providers will join them to streamline back-office processes. Consumers will follow in the long-term as their records become available.

Q3 What are the guidelines for selecting a use case?

LORRAINE FRIAS: What's unique about this technology is that blockchain requires *density of adoption*. That is, it requires a group of organizations who are willing to cooperate to test the efficacy of the technology.

Start by finding use cases that reflect business problems shared by many organizations in your ecosystem. Identify those that will benefit from working together to solve common data-sharing problems.

Ask these questions to guide how you identify a use case:

• Where is the overlap of data and data processes between our organizations?

• Where would the addition of mutually beneficial processes help?

• Where are the barriers or dependencies lowest?

The answers will help you hone in on a use case that is productive and doable in the near term. It will identify those that can deliver value to all participants.

> "Blockchain is, collectively, a way to **eliminate the cost of data replication.** And it also eliminates the need for reconciliation of that information."
>
> —Mike Jacobs

Q4 How does a health care organization approach blockchain implementation?

MIKE JACOBS: Blockchain works when organizations come together to share and audit information and automate common processes. The first step is evaluating the groups of organizations or types of organizations that will benefit from a single source of truth. As you build an alliance, you want to make sure that there's a good cultural fit among members. Find potential allies who have an appetite for early adoption of new technology. Look for people who are open and willing to learn. They are often more risk-tolerant and flexible. And we often start with IT professionals because the solution requires technological expertise to establish a blockchain node.

Our advice is to proceed deliberately and quickly to explore how blockchain may help you leap ahead in your business. Blockchain has the potential to give you and your business partners speed and visibility. It can impart the convenience your members demand, and the control and cost-savings you need in health care transactions. CIOs will need to educate their leadership on the benefits of joining forces with other organizations to tackle data problems and costs together.

Q5 What is the process for engaging participants in an alliance?

LORRAINE FRIAS: Blockchain requires a different business mindset. Blockchain technology will put you in the race. Relationships will get you across the finish line. All alliance members are responsible for the result of the alliance, but none owns the blockchain. Instead, every participant is working together to solve an issue for the industry.

Go to prospective members with a high-level conceptual overview. Present one that clearly demonstrates the mutual benefit of blockchain to solving a specific business issue. Define how the collaboration will work. Use a memorandum of understanding that defines roles and resource commitments. As the pilot gets underway, the collective can formalize these variables. Tools can include project charters, governance processes and decision-making frameworks. Ultimately, these efforts will culminate in a definitive legal agreement.

The beauty of blockchain is that it facilitates trust in the data. But that's only the starting point. Defining the business benefits and building a business case for a blockchain project is critical to rallying support inside alliance organizations. When the rubber hits the road, it still comes down to:

- Creating a well-defined set of objectives
- Clarity around project scope
- An efficient organizational structure for the alliance
- Open and transparent communications
- A use case that will deliver return on investment for all alliance parties

"Working collaboratively lets you solve problems differently. **Blockchain technology will put you in the race.** Relationships will get you across the finish line. "

—Lorraine Frias

Conclusion

A successful blockchain experiment will achieve hard value for the organization. If it falls short of that, you will learn about the suitability of the use case and your cohort, and reveal additional dependencies. These types of explorations create a culture of innovation and cross-sector engagement that underscore health system transformation.

Visit optum.com/CIO to hear more from Mike and Lorraine on taking a realistic approach to your blockchain initiatives.

[1]11 Blockchain Companies shaking up the Healthcare Provider & Payer Industries Published October 2017 © Black Book Market Research 3

[2]Issue Brief: Administrative Provider Data. CAQH [Analysis completed by Booz & Co., now Strategy&.] (December 2011). Retrieved April 10, 2018, from https://www.caqh.org/sites/default/files/solutions/ events/2011/q4/IssueBrief.pdf