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Blockchain in healthcare gets a reality check from the FDA, doctors, and pharma

Entrepreneurs and executives are using the technology to create data markets and to reduce the burden of bureaucracy.

By Veronica Combs | December 2, 2019 -- 15:33 GMT (15:33 GMT) | Topic: How Blockchain Will Disrupt Business

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The hype around blockchain in healthcare has faded and pilot projects testing real-world use cases have taken its place. Insurance companies are using the technology to improve patient care. The FDA is working with manufacturers and distributors to track the pharmaceutical supply chain. Entrepreneurs are working with doctors and hospitals to reduce the burden of bureaucracy.

Mutaz Shegewi, research director, IDC Health Insights (https://www.idc.com/prodserv/insights/#health), said that the initial hype around blockchain in healthcare has been replaced by a more pragmatic understanding of the technology and potential use cases for the industry.

"There are some applications already, and a lot of forward-thinking provider organizations are piloting or investing in the technology," he said.

Shegewi described five categories of projects for blockchain in healthcare:

1. Health information access and exchange
2. Payer and provider integration
3. Patient engagement
4. Consulting and professional services
5. Consortia and industry collaborations

Shegewi said that blockchain has the potential to improve the democratization of healthcare data.

"A lot of healthcare, and the utilization of data has been designed around regulation and around the providers and very little has been designed around the patient," he said. "It is the patient that ideally should be the owner of that data, considering it was their manifestations of health that generated that data in the first place."

Blockchain platforms could accomplish this in healthcare settings because the data is decentralized and relies on the members of the chain to contribute to it.

"It's a different dynamic of data sharing that healthcare lacks and would benefit from," Shegewi said.

A data market for doctor credentialing research

Two companies -- Hashed Health (https://hashedhealth.com/) and Solve.Care (https://solve.care/) -- are using blockchain to create new data markets and ease the administrative burden on doctors. Hashed Health is focused on the hiring process, while Solve.Care is helping doctors spend more time delivering care instead of dealing with bureaucracy.

When a doctor gets a new job, the hospital has to verify the new hire's work and education credentials (https://www.jointcommission.org/assets/1/6/AHC_who_what_when_and_where_credentialing_booklet.pdf). The manual process takes between four to eight months and must be repeated every two years. Until a doctor's credentials have been verified, he or she can't see patients or get paid for providing services. If this process is delayed, hospitals can lose up to $30,000 per month on a single provider (https://www.beckershospitalreview.com/finance/reclaiming-revenue-a-found-money-trifecta-in-credentialing-privileging-and-enrollment.html).

Hashed Health (https://hashedhealth.com/) founder and CEO John Bass built a blockchain solution for this "hair-on-fire issue in healthcare" where there's been no innovation in 25 years.

"There's a huge ROI, so it's a great place to start in terms of blockchain," he said.

Professional Credentials Exchange (ProCredEx (https://hashedhealth.com/blockchain-healthcare-solutions/professional-credentials-exchange/)) uses a distributed ledger platform to create a data market for credentialing information.

"So the new business model looks like a data market or a data exchange that allows people

who've done the primary source verification work to take the information that they've curated and offer it to other health systems, and people who need to do the same work," he said.

Instead of the hospital down the street repeating the same credentialing process, the institution can acquire verified digital artifacts from another entity, which has already completed the curation process.

"The information that's being exchanged is the primary source verification of the credential, and that's what is important here, because that's where the trust issue is," he said.

ProCredEx fits within the traditional credentialing system, a crucial element for an industry that is slow to adopt new technology.

"We think that's the best way to bring something like this to market, to not ask people to change their credentialing systems or replace something that they're already using," Bass said.

This new data marketplace is built on work that is currently a cost center. Bass described it as "a beautiful example of a two-sided marketplace that creates value for both buyers and sellers of this information."

Bass said Hashed Health uses a variety of blockchain protocols, including Ethereum, Fabric, Corda, and QLDB from Amazon, a server-less infrastructure with cryptographic guarantees.

As the technology platform took shape, Hashed Health built a network of business partners who would use the technology, including 14 large organizations that include insurance companies, health systems, and big data partners.

Now that ProCredEx (https://hashedhealth.com/blockchain-healthcare-solutions/professional-credentials-exchange/) is an independent company, Hashed Health is working on Bramble (https://hashedhealth.com/blockchain-healthcare-solutions/bramble/), another data marketplace idea. With this product, the data asset is a digital representation of a healthcare service. The asset includes the provider name, a service description, terms and conditions of the service, and a price. The healthcare service could be CT scans, MRIs, colonoscopies, lab tests, or knee replacements. The creator of the asset makes it available to purchasers. Self-insured employers could buy these services directly from the provider, essentially cutting out the insurance company.

"Using this model, you're creating kind of like (Health and Human Services Secretary) Alex Azar's dream here, which is a peer-to-peer marketplace that's very much focused on transparency, competition, and value," Bass said. "These are exactly the types of cost-reduction opportunities that you can recognize if you were to adopt this kind of peer-to-peer, stripped-down market structure that's focused on rationality, competition, choice and value."

Bass sees blockchain as a way to create a new business structure for the healthcare industry that makes it easier to reduce costs and improve patient care.

"We have to start questioning the wisdom of continuing to innovate on top of these traditional siloed infrastructure and data infrastructure," he said.

Bass said that blockchain has the potential to make value chains in healthcare much more transparent.

"Along comes a technology that allows you to start to question and drive visibility and accountability into, 'Who's adding value and who's not in these value chains?'" he said. "A lot of our customers recognize that they need to innovate in that world and be a part of these solutions."

Using blockchain for administrative tasks

Solve.Care is also working with blockchain and doctors, but this use case is focused on using technology to make using, providing, and managing healthcare easier. The platform can take over some of the administrative work that doctors have to do during a visit. It also can be used by patients to look up benefits, check costs, and make appointments.

Solve.Care's platform has five components:

- Care.Wallet - The umbrella app for doctors and patients
- Care.Cards - Applications inside the wallet for patients and doctors
- Care.Coin - A programmable token used to pay healthcare providers
- Care.Protocol - The system that connects and synchronizes wallets, cards and coins between users
- Care.Vault - The data management system

Solve.Care CEO Pradeep Goel said that clients use the platform to manage healthcare

administration networks, including benefit networks (insurance companies), clinical networks (healthcare providers), and financial networks (payment arrangements among insurers and providers).

"Solve.Care's platform is useful to accountable care organizations (https://innovation.cms.gov/initiatives/ACO/), medical practices, insurance companies, hospitals, pharmaceutical companies, employers, and government agencies -- any organization managing or providing healthcare," Goel said.

The Care.Coins serve as digital currency for healthcare on a blockchain system (https://youtu.be/sl1du-AMYnY). Goel said that if a care network administrator chooses to use Care.Coins within their CAN, the administrator sets the worth of the Care.Coin and links it to specific services. For a patient, that could be a ride to the doctor's office or an annual preventive care visit. For a doctor, the coin could be used to pay an incentive for meeting a certain criteria of care.

The Arizona Care Network (https://www.azcarenetwork.org/) (ACN) started using the Solve.Care platform in mid-2018 (https://www.healthcareitnews.com/news/aco-arizona-care-network-piloting-blockchain-wallet-docs). ACN is a group of doctors and other healthcare providers whose goal is to improve healthcare and reduce costs by actively coordinating care for patients. The network includes 5,500 doctors in 1,800 care locations. The ACN is using Solve.Care to set specific metrics for patient care and then to reward doctors for hitting those goals.

Using the Solve.Care app, doctors can view their own performance data as well as data from their peers and then can compare it to the network overall. This is part of the Provider Rewards Program -- a set of metrics to measure a doctor's progress in keeping patients healthy. These "value-based arrangements" are the opposite of "fee for service." With value-based care, financial incentives are linked to keeping patients healthy, instead of performing procedures.

In late 2019, ACN launched a new addition to the Care.Wallet: the Diabetes Care Administration Network (https://www.hcinnovationgroup.com/population-health-management/article/21112644/arizona-care-network-looks-to-evolve-blockchain-project-with-diabetes-care-initiative). The healthcare system is working with Boehringer Ingelheim Pharmaceuticals, Inc., to help patients manage the chronic condition.

Dr. David Hanekom, CEO Arizona Care Network, said that Solve.Care is driving a transformation (https://youtu.be/l3t7T7MYFi4) in healthcare delivery, finance, payment, and information sharing.

"Blockchain is going to help us take those administrative processes that intrude on the relationship between the patient and the physician and free them to do what they are trained on, which is to deliver healthcare to humans and not do administrative tasks," Hanekom said.

"Without provider satisfaction, we can't drive better patient care, lower costs, and more satisfied patients."

Blockchain consortia in healthcare

Whether the goal is to reduce paperwork or coordinate payments, all blockchain projects in healthcare require collaboration among multiple stakeholders. Just as Hashed Health has built a group of partners to support a data market for doctor credentialing, several other partnerships have formed to explore blockchain use cases in healthcare.

Blue Cross Blue Shield's NASCO division (https://nasco.com/) has created a consortium with BCBS health insurance plans and pharmacy benefit manager Express Scripts (https://www.businessinsider.com/blue-cross-blue-shield-forms-blockchain-consortium-2019-4).

Blockchain in Healthcare Global (https://www.blockchaininhealthcare.global/) is a consortium working to identify best practices and challenge legal barriers to the application of blockchain. Dr. Tiffany Gray, MPH, is a member of the working group that was formed about a year ago.

"We are identifying the key standards that need to be put in place as this technology develops, as well as the policy implications and the ethical implications," she said.

Gray said she is also watching a pilot project from the FDA: the Drug Supply Chain Security Act (https://www.fda.gov/drugs/drug-supply-chain-security-act-dscsa/dscsa-pilot-project-program). This project will develop an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the United States. The project includes healthcare system, pharmaceutical companies, and retailers.

"That will be very crucial to expanding the discussion of blockchain technology and what that could potentially look like in the future," she said.

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A recent TechRepublic Premium poll shows that while 87% of respondents think blockchain will positively impact their industry, only 10% actively use it.

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We like blockchain. At least, that's the takeaway from a recent TechRepublic Premium survey where the majority of respondents (87%) stated that blockchain will have a 'positive' effect on their industry, and 27% indicated a 'very positive' effect.

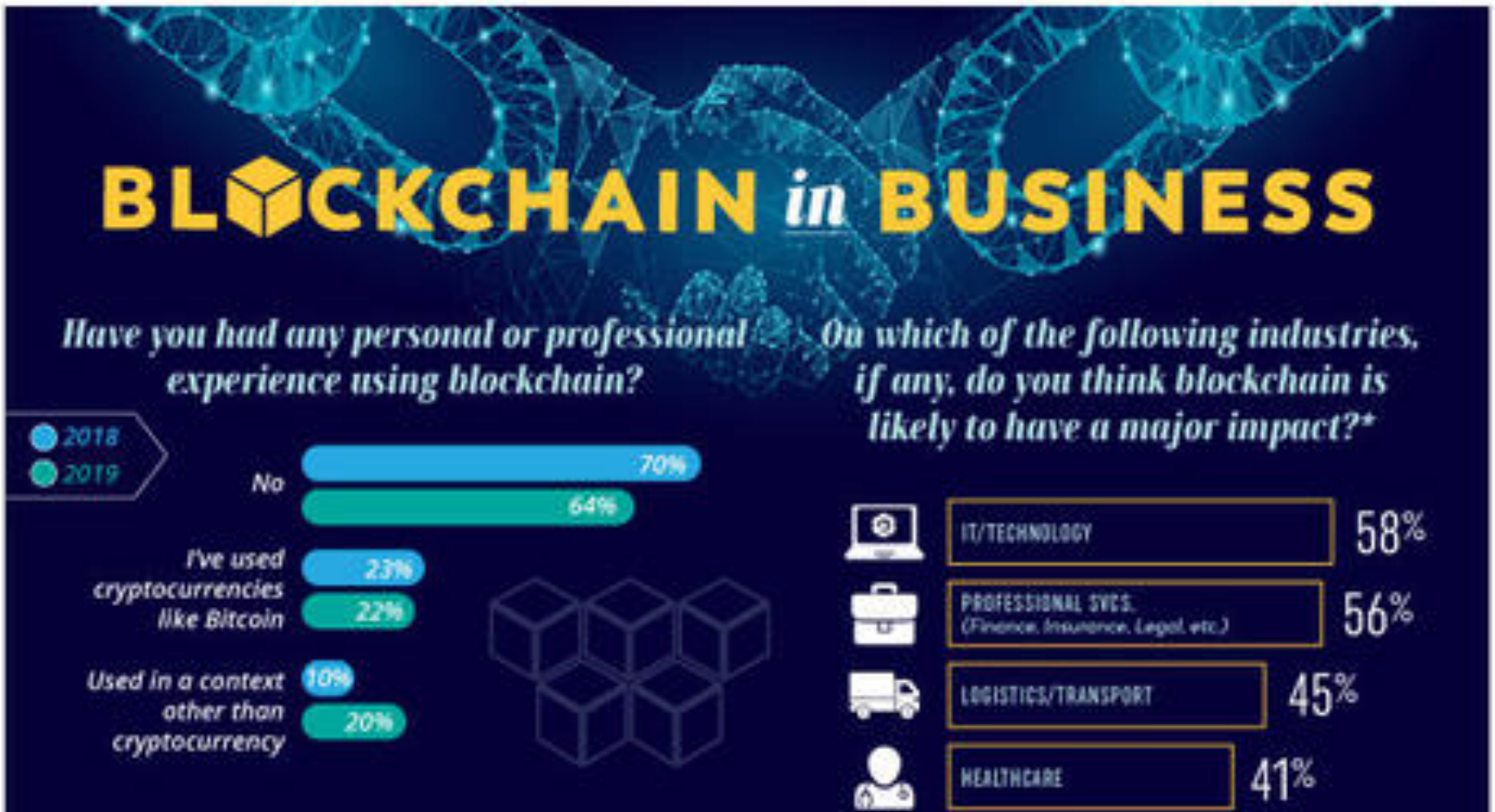
However, thinking something and actually doing it are two different actions. Despite the enthusiasm for the technology, only 10% of those respondents actively use blockchain at their company. Blockchain appears on 13% of the strategic roadmaps for respondents' organizations, compared to 7% in 2018.

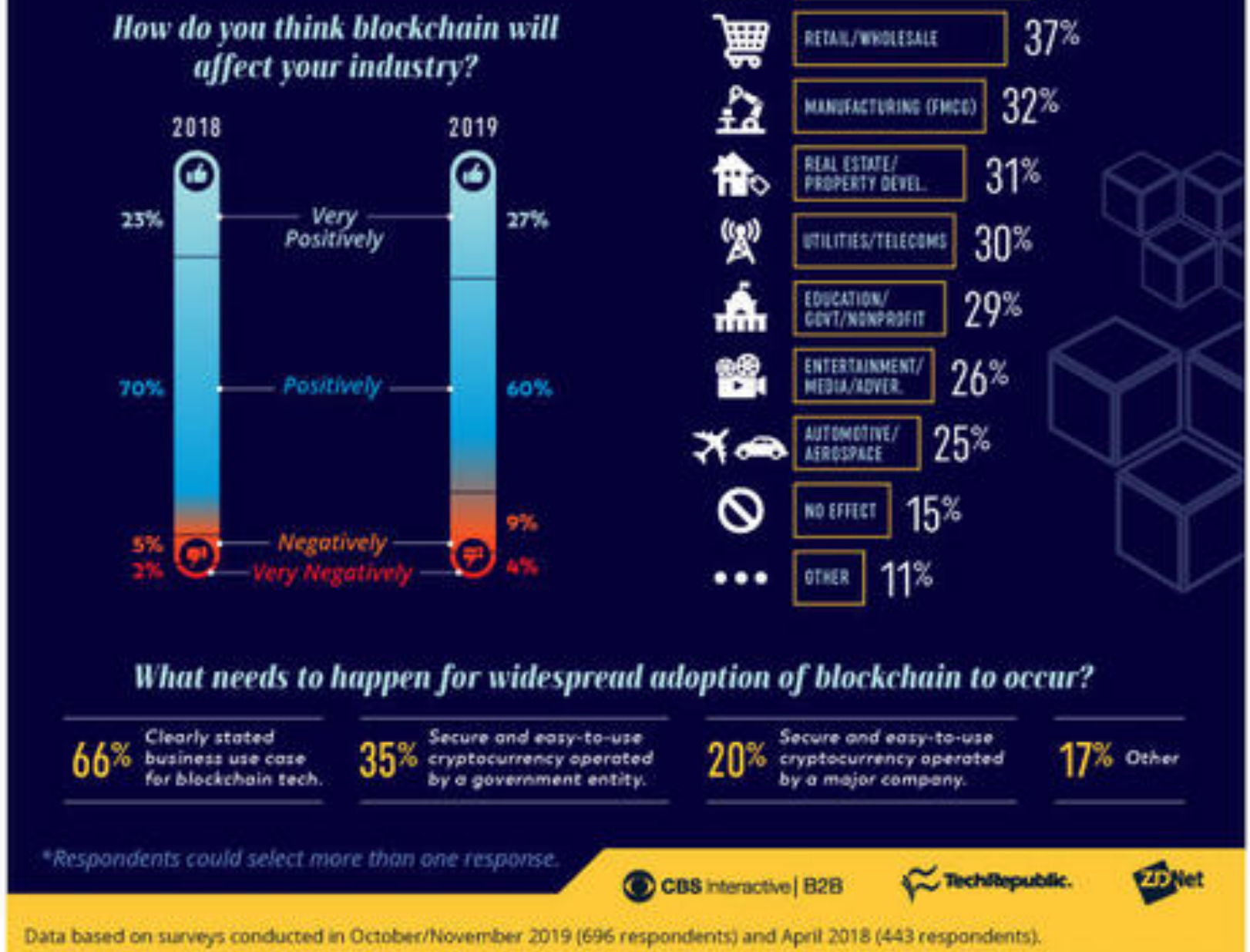
SEE: IT leader's guide to the blockchain (http://www.techproresearch.com/downloads/it-leader-s-guide-to-the-blockchain/) **(TechRepublic Premium)**

Which industries will blockchain most likely impact? IT and technology was chosen by 58% of respondents, with professional services -- including finance, insurance, legal, and consulting -- a close second at 56%. Rounding out the top five cited industries were logistics & transport (45%), healthcare (41%), and retail & wholesale (37%).

What needs to happen for the widespread adoption of blockchain? Two-thirds of respondents (66%) indicated the need for a clearly-stated business use case. A cryptocurrency operated by a government entity was suggested by 35% of respondents, while a company-controlled cryptocurrency was favored by 20%.

The infographic below contains selected details from the research. To read more findings, plus analysis, download the report: **Blockchain in business: Where are we now, and predictions for the next decade** (https://www.techrepublic.com/resource-library/whitepapers/special-report-blockchain-in-business-where-are-we-now-and-predictions-for-the-next-decade/) (TechRepublic Premium).





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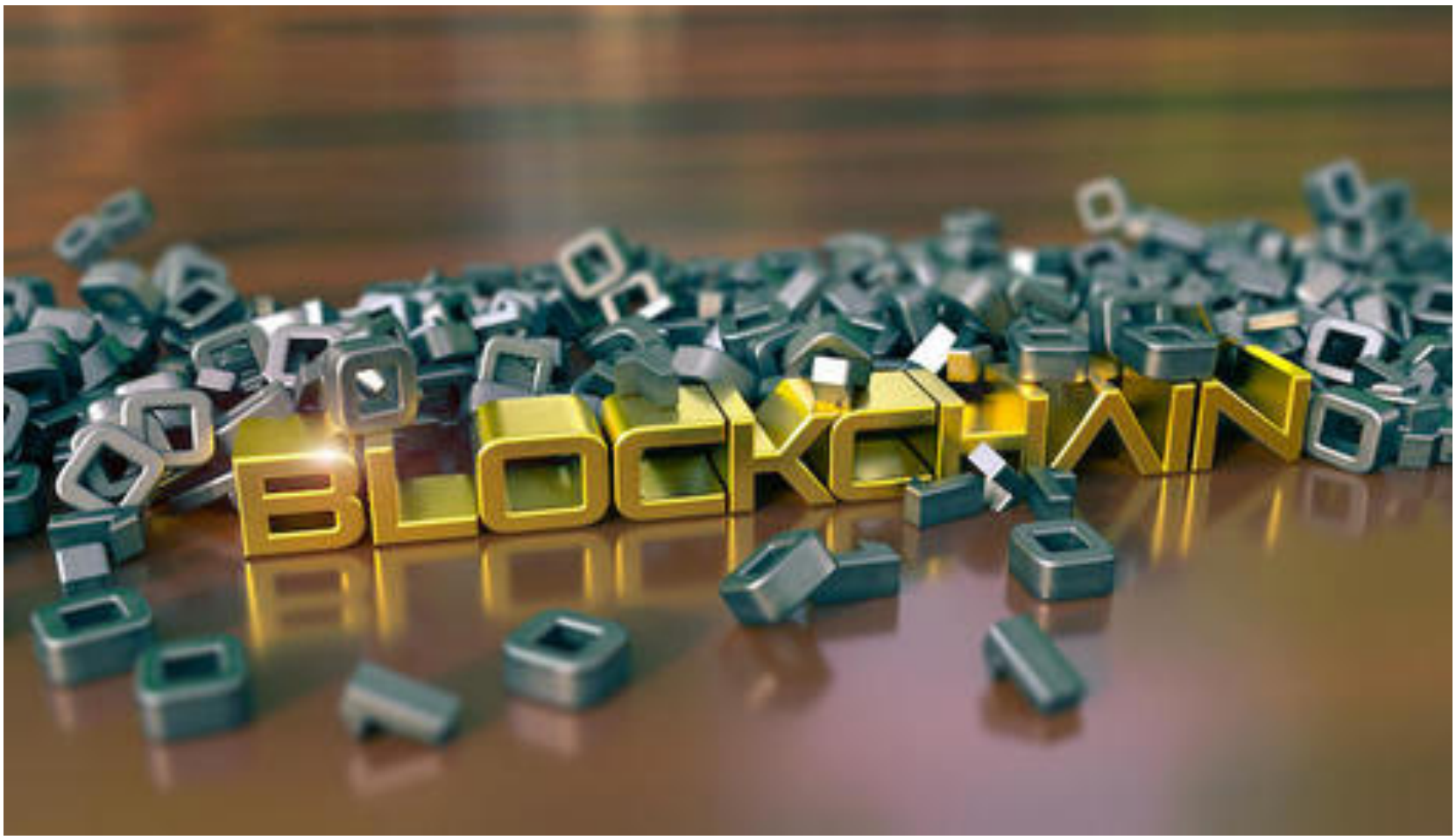

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