



The Forthcoming Use of BlockChain Technology in Automotive and Financial Systems

Where did BlockChain Technology Come From?

Bitcoin and its network serve as the best working example to date of blockchain technology in action. If you are not familiar with Bitcoin you should come out from the rock you've been living under and explore this (relatively) new (crypto)-currency. But how does Bitcoin actually work?

The answer is a bit complicated but centers on a somewhat recent innovation called blockchain. Blockchain is a distributed database technology which maintains a continuously-growing list of transaction records that each refer to previously stored values in the database as a means of hardening the data against tampering or falsification.

How Blockchain technology works with Bitcoin:

Bitcoin utilizes a peer-to-peer network that consists of computers—run by “miners” set up specifically to verify the validity of transactions and record these entries in the blockchain database. The miners race to be the first to compute/solve a cryptographic puzzle accompanying each transaction. The "winner" is awarded bitcoins for the effort. Other computers in the network also check the winner's solution, creating a built-in redundancy designed to guard against transaction fraud. Once a transaction is entered into the blockchain ledger, it cannot be deleted or changed. The blockchain is designed so that each block contains a hash drawing on the blocks that came before it. This is designed to make it more tamper-proof.

Transaction Management in Bitcoin:

All confirmed transactions are embedded in the bitcoin blockchain. SHA-256 cryptography is used to ensure the integrity of the blockchain applications – all transactions must be signed using a private key or seed, which prevents third parties from tampering with it after the transaction is verified by the miners and written. Transactions are confirmed within 10-20 minutes by bitcoin miners on the network. Again, the term mining is used to confirm transactions through a shared consensus system, and usually requires several independent confirmations for the transaction to go through. This process guarantees random distribution and makes tampering very difficult.

Applications of Blockchain in Commerce:

The blockchain approach is well-suited to operate as an online payment network because it does not require a central bank or transaction clearinghouse like more traditional debit and credit card transactions. The computer/miner that successfully validates a bitcoin purchase or transfer does receive a small piece of the currency changing hands, but this is a fraction of a percentage.

As an example Stripe, a payment processing service that enables businesses to accept different methods of online payment, announced in February that it will charge customers 0.5 percent per successful bitcoin transaction. In contrast, the service charges more than 2.9 percent per credit card transaction. Some processors of credit card transactions charge nearly 5% of the transaction value making the "cost" associated to miners negligible by comparison.

Developers are experimenting with blockchain applications, but we have yet to see large scale projects built around blockchain technology that are not bitcoin or "altcoin" related. The Internet of Things (IoT) could bring blockchain technology into our lives in different ways other than Bitcoin and crypto-currency.

Blockchain Growth Projections:

Pundits expect to see the user base grow at a compound annual growth rate (CAGR) of over 17.5% this decade, with up to 28.1 billion IoT devices in the wild by 2020. This will create a number of new challenges and opportunities to manage, maintain and interact with the devices.

There are numerous industries where blockchain technology will be disruptive and/or formative. Voting, proof-of-ownership, contract management and escrow/custodian services are just a few examples of places where blockchain can and will play a significant role. Some newer ideas include the use of blockchain technology in less than intuitive places like car security and traffic management (we could sure use something new here in Austin).

Blockchain is a Disruptive Technology

A former colleague went as far as to say blockchain has the capacity to disrupt every industry where (1) the industry is heavily intermediated by legacy gatekeepers or (2) those entities which perform transactions as a service have opportunity to create a conflict of interest with the transactor. Examples include international remittance/transfer, real estate escrow and energy trading and financial derivatives trading. The most compelling use of blockchain, in my opinion, will be to manage IoT by enabling scalable architectures and ensuring repeatable outcomes/expectations.

Do you see BlockChain migrating into auto CRMs and financial systems?

The accountability and transparency of the automotive industry - especially F&I -could be improved by the usage of blockchain. So, “migrating into CRM”(customer relationship management)? I’m not certain. Into financial systems? More likely.

What is of particular interest is the possibility to track an automobile from the instantiation of the tracking VIN# (presumably when the frame is created) through the very end of its life. Such a VIN database of all cars -complete with data from *all* owners and handlers/service providers- would essentially be like the holy grail for so many in the automotive industry/ecosystem.

So, less of a marketing tool, per se, and more of a public ledger with widespread business process implications.

How to Observe and Follow Integration of BlockChain Technology into Commercial & Soon Automotive Transactions?

Again, probably as a conduit for managing information about ownership or in circumstances of trust like escrow. Blockchain elegantly facilitates a sort of registry.

An industry-based solution could evolve that might use blockchain for a sort of open registry that would be open to read for a fee. Entities would sign up to help administrate the blockchain (“the miners”) and would of course be paid for the services provided (validation of the blockchain data) from the fees collected.

The users of such a blockchain registry could include a broad array of F&I entities benefiting from the pooled data resource and the ability to look in one place for the most complete view of a VIN’s history available. Cradle to grave in a sense.

Such a resource might also include information from dealer management systems (DMS) vendors like Reynolds & Reynolds and DealerTrack and wholesale/auction services companies like Manheim. Privacy concerns are presently driving a great deal of the thinking around the management of information in the automotive services ecosystem. Equally significant could be a system to help validate/authenticate the ownership and lifespan of automobiles so there can be trust and expectation in an industry composed of literally thousands of different service, financial and sales entities. A blockchain solution that is considerate of privacy but provides transparency for relevant parties would be beneficial to the industry as a whole.

Blog Author:

Loren Parker
Contributing Editor
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