DIGITIZE AND MAKE DMV SERVICES MORE SECURE WITH BLOCKCHAIN

Abstract

State government agencies, like the DMV and others, provide identity and ownership credentials in the form of driver licenses, business licenses, vehicle titles and registrations, and other types of documents to residents and businesses.

Residents and businesses need to produce these credentials to access various services offered by the state. These credentials are also needed to conduct several daily transactions, whether it's getting through security at the airport, applying for a loan, renting a car, paying taxes or when documents need to be presented to merchants and vendors or law enforcement. Repeating the same process is costly to the state and businesses, and time-consuming for the customer.
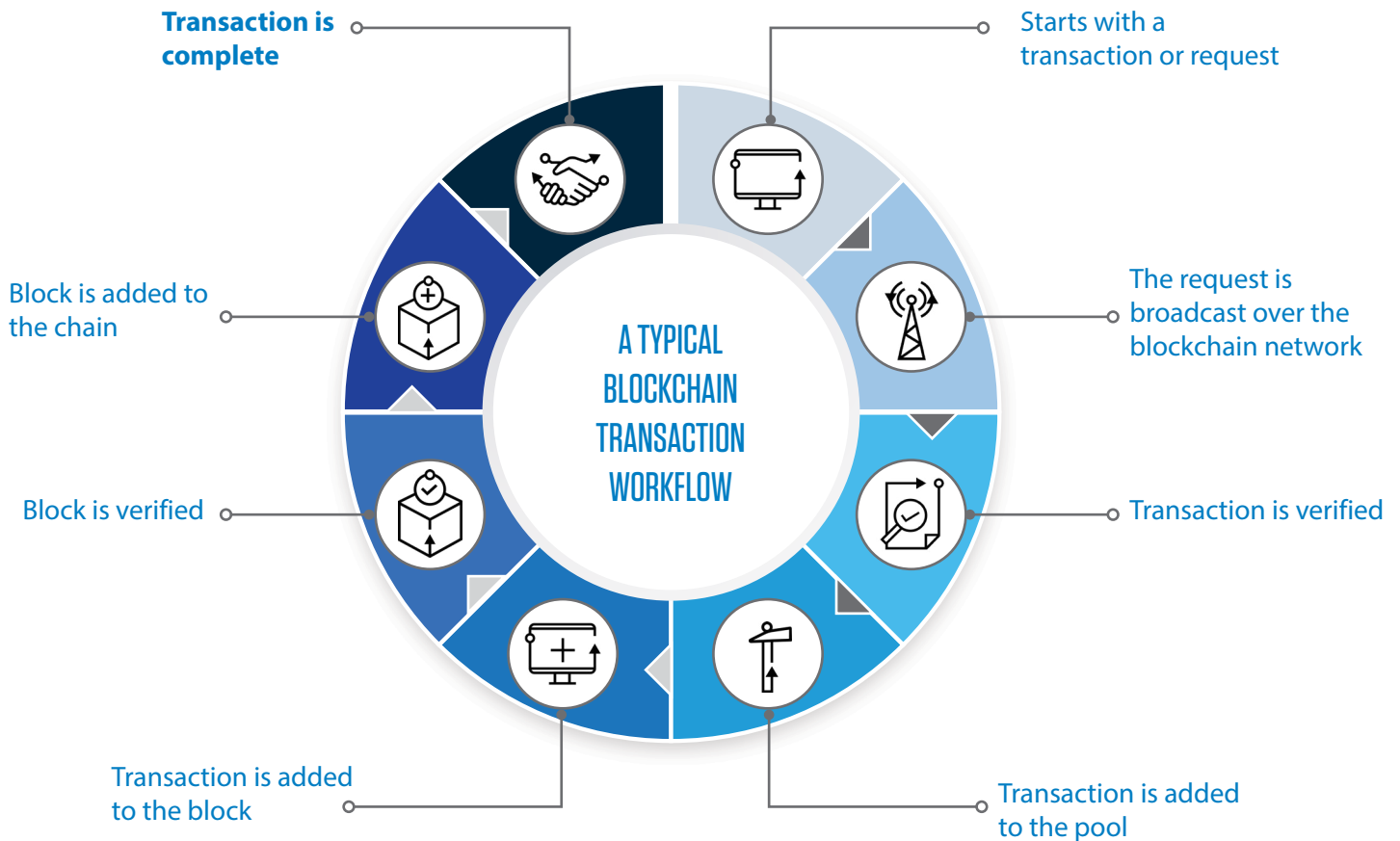
With blockchain, agencies can digitize this process, making it more efficient and secure. Let's see how with a few use-cases.

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How blockchain-supported transactions work

One of the advantages of blockchain is that it can provide verifiable data using distributed ledgers and peer to peer networking. A blockchain public database or "ledger" is stored in multiple locations across a decentralized network. Data is added to the ledger in "blocks". Each time a new block is added, it must first be verified by participants in the network. Basically, blockchain technology transfers ownership and the control of data from a centralized source to those contributing the data.

Transaction is complete

Block is added to the chain

Block is verified

Transaction is added to the block

A TYPICAL BLOCKCHAIN TRANSACTION WORKFLOW

Starts with a transaction or request

The request is broadcast over the blockchain network

Transaction is verified

Transaction is added to the pool

With a blockchain network, residents can initiate a service request with their primary service provider/agency. The primary service provider will collaborate with other departments/agencies as needed and request the information only once. If the documents are needed again, the agency will be able to inform the requestor in advance and provide complete visibility on how these documents will be accessed and by whom.

Many of our DMV legacy data structures, including data silos, centralized data repositories and others, impede the free flow of transactional data across state agencies and businesses. These data structures within an organization are often disjointed and comprised of disparate data elements, in that individual data silos may share many common data elements but do not share a standardized format.

The blockchain architecture is inherently a decentralized environment of trusted data exchanges between business partners. The ability to decentralize data across a network of trusted partners supports a transparent, unified and dependable repository of information.

Blockchain-based vehicle registration

Motor vehicle agencies share data with many organizations when citizens purchase and want to register their vehicles. Blockchain technology provides a collaborative tool that can conduct these multiple data exchanges in a secure and efficient manner.

Let's consider our scenario. Jane is in the process of buying a car from an auto dealership. Of course, the first step is that she needs to visit the dealership (we won't confuse things by talking about Carvanna here) to purchase the vehicle. As part of the purchasing process, Jane must buy insurance and secure a loan so that she may register her new vehicle. Additionally, she must provide identity credentials and have them verified.

Instead of engaging with all these organizations separately, a blockchain-based solution allows Jane to initiate these tasks through a single portal if the DMV and other institutions are part of an identity blockchain network. In this scenario, workflows are digitized and automated and relevant information exchanged securely while servicing a request.

Jane schedules an appointment and visits the dealership to purchase and register her new vehicle. The dealership is authorized by the DMV to process Jane's registration transaction. As the diagram to the right indicates, using blockchain technology she can also secure insurance, apply and be approved for financing and verify her identity with the DMV. She supplies all the documents and ID proofs to the dealership, that collects the necessary information and starts the transaction request.

Verification is performed by a trusted third party. Smart contracts are used, providing a digital lock that only unlocks when specific predefined conditions are met. Official transfer of ownership is possible only if the conditions of the transaction are met by all trusted third parties, such as the dealership in combination with the insurance company, financial institution and the vehicle registration authority, the DMV.

TRADITIONAL VEHICLE REGISTRATION

BLOCKCHAIN-BASED VEHICLE REGISTRATION
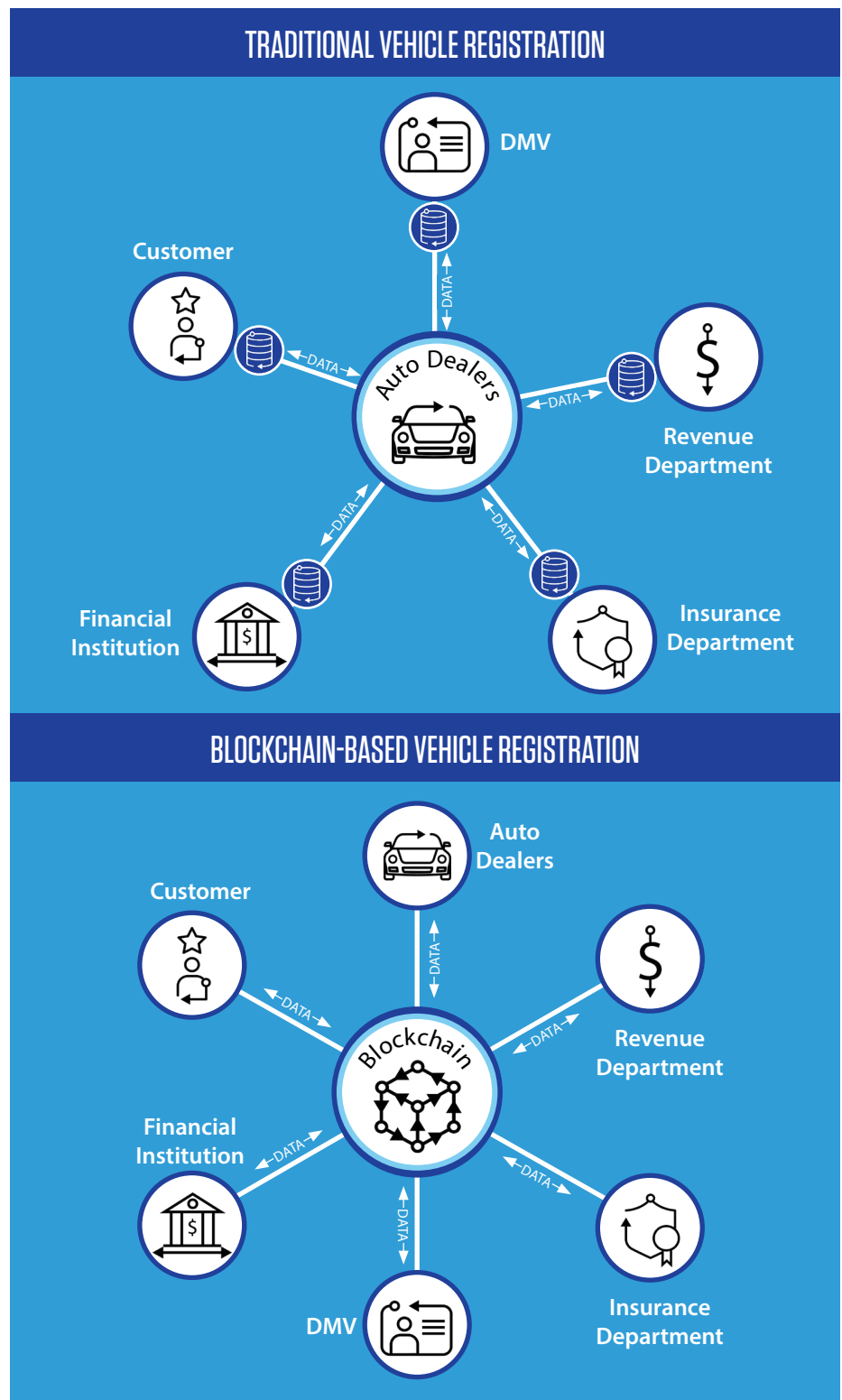
Once the required verifications are completed, the dealership collects the fees, taxes and other related payments from Jane and completes the transaction. The dealership provides Jane with her new vehicle registration, insurance card, loan agreement and purchase documents, all within one visit. Blockchain enables sharing of their data transparently without any risk of identity theft.

In conclusion

In legacy scenarios, seemingly simple tasks like purchasing a car require interactions with multiple entities – the dealer, the insurer, the DMV, and so on. It is time consuming and often frustrating. As we have seen, blockchain consolidates all these interactions into one single point of contact. Blockchain-based ecosystems like the example we have provided here can enable state agencies to provide services in a seamless, transparent, and fully secure manner. In the future, with a network like this in place, state agencies will be able to help residents obtain and renew their vehicle registration, driver licenses and other state-issued digital credentials through a digital wallet stored on their phone. Blockchain will provide a unified trusted source to expand DMV services through one digital user experience.

BENEFITS OF BLOCKCHAIN-BASED ECOSYSTEMS

IMPROVE DATA INTEGRITY

REDUCE RISK OF FRAUD

IMPROVE COLLABORATION

REDUCE COST OF OPERATIONS

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