

How to use blockchain to reinvent asset management

By [Bas de Vos](#)

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Without going into the specifics too deeply, blockchain is a huge, global distributed ledger or database running on many devices and open to anyone within the blockchain. In the blockchain, information or anything of value can be stored. Its purpose is to ensure a 100% secure, verifiable, and traceable database protocol.



Bas de Vos

So far, most use cases have been focused on the financial sector, including transaction management whereby costs are reduced by keeping property ownership and records or using it to track high-value goods such as diamonds. All these cases are about creating secure, verifiable, and traceable storage of information.

“ There is, however, a huge untapped market in the area of asset management. Let me highlight this by describing an example from the aviation industry. ”

Aviation – a highly regulated market with complex supply chains

Take a look at the highly regulated aviation industry. Modern aircraft consist of roughly two to three-million parts. It is crucial to know the provenance of these parts, i.e. original manufacturer and exact product model and version, in order to assure that they have the right specification and that they are not counterfeit. In addition, many of these parts are so-called “tracked items”. Not only their provenance, but the entire maintenance history of these parts need to be transparent.

Today, the many participants in an asset’s lifecycle — from manufacturer to transporters, maintainers, and operators — each have their own disparate systems for managing assets. Consequently, it’s quite difficult to establish and maintain a single version of the truth when looking at that asset’s entire lifecycle. Often, these records can be incomplete or still non-digitised, and communication between the different participants is often conducted on paper or even verbally.

Lack of standardisation leads to limited traceability and the cost of compliance, if even possible, can be very high.

“ What if all of these participants submitted a transcript of the transactions into a purpose-specific, distributed ledger, like blockchain, to which only authorised participants would have access? ”

The manufacturer would initially start the blockchain for the asset and each participant would add the relevant blocks to it. The distributor would let the chain's participants know that the asset was transported from point A to point B, while the operator would register the number of flight hours that the asset has undergone. Using blockchain for this asset management scenario would give you a 100% verifiable, 100% traceable, and 100% trustworthy history of the asset's lifecycle in real-time. Each individual participant in the chain still has the features and benefits of their own business applications to run their business.

Potential benefits for the blockchain participants:

- Improved data quality through minimised need for manual data entry by the various participants
- A single, traceable record of serial numbers
- Complete and more accurate maintenance history
- Increased trust between service providers, suppliers and operators
- Reduced cost for compliance
- More flight hours for the aircraft thanks to improved reliability of the parts

Integration is key

How do we achieve these benefits in reality? There are several players that need to work together to make this happen: the technology providers like Microsoft (with Azure blockchain-as-a-service) must work together with the regulating authorities, such as the Federal Aviation Administration (FAA), and the airlines and their partners, as well as with software vendors.

“ We all need to work together and be willing to share information to integrate with the blockchain. ”

We're not there yet, as there are still several challenges to overcome. Things like technical performance need to be thought about as latency of transactions and computing power could stand in the way of achieving consensus within a chain. Data ownership, privacy and security must also be addressed.

There are certainly a few things to consider in order to succeed with blockchain for asset management, but there are a huge potential and possible competitive edge for those who are willing to get in on the ground floor.

ABOUT THE AUTHOR

Bas de Vos is director of <http://www.ifsworld.com/za/solutions/ifs-applications/ifs-labs/> IFS Labs] at <http://www.ifsworld.com/za/IFS/>.