

BLOCKCHAIN



Blockchain Revolution in the Airline Industry

An approach by TCG Digital



Blockchain Revolution

Blockchain is perhaps the biggest buzzword in the technology landscape today. Simply put: a blockchain is a distributed ledger that provides a way for information to be shared and recorded by a network of users. The key feature of blockchain is that every user of the network stores a full copy of the information. And, each new update made by any user on the network

must pass a consensus validation check from all the other members, after all members agree the ledger is updated. Any digital form of information can be stored such as transactional data, identities, artefacts and even contracts. Each new block of information is then added to the chain.

The transformational aspect of blockchain, a result of its distributed nature, is that each transaction is accessible to the entire network. This aspect increases transparency and trust as it offers the possibility to every user to view

every transaction in the network. The cryptographic algorithms validate how transactions are bundled into blocks and how blocks are added (consensus), thus ensuring the integrity and immutability of the network. If any one member of the network attempts to change, rather, defraud the ledger, the network will immediately reject the transaction as it not valid.

This is the key feature of blockchain technology because it allows the blockchain to replace trusted middlemen with a mathematic algorithm. By automating the validation process, it helps reducing the cost because the same job can be performed for a fraction of the cost and in a much quicker time. Blockchain technology builds trust across this system by leveraging cryptography, which is the core building block of this technology.

Potential use cases for Airlines

The following examples of uses cases of blockchain technology just scraps the surface and it offers a perspective on a technology that could completely alter the future of the airline industry. The structure of the broader airline industry aligns very well with the characteristics of blockchain technology. There are plethora of touch points and systems, such as GDS, OTAs, airports, immigration authorities, government bodies, and industry bodies, which power the travel journey, resulting in an explosion of data and data exchange services.

Each actor across the travel journey requires, collects, stores and often shares traveler and operational information. This results in a web of complex and seemingly endless data reconciliation that takes place behind the scenes.

Even within an airline, there are a number of systems in play that does not allow data exchange to be straightforward in most scenarios. And in the airlines industry, not only are operational integrity and revenue generation at stake when something goes wrong, but so are safety and security.



- **Loyalty:** Loyalty is a significant part of the airlines industry. In a traditional setup, there is a time lag between points earned and accrued in a system and when a traveler can redeem those points. The blockchain technology transforms this part of the business by tokenizing loyalty points that will help customers to instantly unlock value by allowing them to redeem the points instantly. The blockchain based digital wallet will allow the loyalty member to redeem their frequent flyer credits at retail partners.



- **Ticketing:** An e-ticket is at the center of the entire airline industry. An e-ticket stores a lot of information not only in terms of volume but also qualitative. By using blockchain technology, airline can dematerialize this massive data to ensure better performance and tracking. The airline industry can strategically decide to use smart contracts and define how a ticket is sold and used across the entire system. This opens a number of possibilities to maximize real-time distribution of tickets to customers.

Conclusion

The above list of use cases are just the starting point and there are other applications for blockchain. With more technologies entering the market, it offers an opportunity to further improve efficiency across the entire travel journey.

Blockchain technology, in most cases, will run in the background and will be leveraged by other software applications across the value chain. It is evident that blockchain technology is here to stay and airlines need to leverage the technology to gain a competitive edge by reducing costs, increasing transparency by presenting a true picture, improving operations and finally, enhancing customer experience.



- **Maintenance:** The current system of maintenance logs is cumbersome and, in many instances, is based on plain paper binders. The blockchain technology can help transform the way the maintenance logs are accessed thus unlocking a great potential to improve operational efficiencies across the entire value chain. The blockchain technology enables the industry to ensure the authenticity of the parts by storing and sharing information such as where they were sourced from, who handled which part and where is it going from here. This visibility is a game changer, and can push the practice of maintenance, safety and aircraft security to a whole new level.



- **Security & Identity Verification:** The fundamental value proposition of blockchain technology is its ability to enhance security. The primary concern for every airline, like any other organization, is data privacy. This unique value proposition and the primary concerns present a great opportunity for the airline to further improve its data security. The security features of blockchain technology, especially the data wrappers, further enhance data authenticity and security.



About TCG Digital

TCG Digital, the flagship technology consulting and solutions company of The Chatterjee Group (TCG), is a leading Consulting, IT solutions & services provider to the global aviation industry for 18+ years. We have been razor focused in delivering value-driven business solutions to our clients across North America, Central America, Middle East & Turkey, South East Asia and India leading to satisfaction and delight for our valued customers.

Our focus is on modernizing enterprises enabled with digital technologies like Mobility, Cloud, IoT, Blockchain, Automation and powered by insight-driven analytics and AI.

Our experience with clients across FSCs and LCCs to name a few, our understanding of business models, domain excellence and deep technical expertise in legacy and new-age technologies makes us a strategic partner for our airline customers.

For more information about our Airline solutions, please visit <https://www.tcg-digital.com/airlines.php>

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