MEHUL DAMANI, SUBJECT MATTER EXPERT,

## BLOCKCHAIN IN TRAVEL: A COMPELLING CASE FOR ADOPTION







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"It's the first native digital medium for value, just as the internet was the first native digital medium for information."

- Harvard Business Review on Blockchain

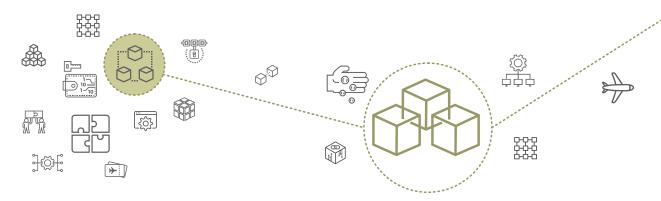
In the digital age, as customers move across the travel value chain, they leave a trail of complex commercial transactions between traditionally unconnected players. Despite automation, payments and settlements in the travel industry continue to be challenging and time-consuming. A complex distribution system, frequent cancellations and refunds, and disconnected customer touch points add to the operational challenges in the travel industry.

Blockchain, the distributed ledger technology, can bring in the seamless integration, agility and speed required between disparate systems as:

- It enables shared, simultaneous access to the same version of updated data across multiple players, while also enabling diverse points of data entry
- It embeds cryptographic protection and a transaction validation mechanism<sup>1</sup> giving all

- stakeholders a level of trust and data protection not available with other technologies
- Transactions once entered into the digital ledger of a private blockchain can be moderated only by the owners, assuring the participants of the integrity and authenticity of transactional data

Drawn to the potential of this technology, travel players are exploring the role blockchain can play in key areas.



 $1. \ http://sammantics.com/blog/2016/3/6/how-transactions-are-validated-on-a-shared-ledger and the same and$ 





#### **Inventory Management for Greater Visibility**

Poor visibility on the inventory often leads to overbooking, cancellations and refunds. In a blockchain, each confirmed booking, be it a direct sale or a booking made by an agent, will be added as a transaction block. All participants will thus have a unified view of the remaining inventory. It

can also help airlines and hotels monitor the fill rate.

Switzerland-based travel platform Winding Tree<sup>2</sup> is developing a fully public, blockchain-powered marketplace for travel inventory (hotel rooms, flights and even experiences). This will enable

suppliers to list their inventories and agents to book through it. The TUI Group<sup>3</sup> is already using smart contracts on its private blockchain to manage bed inventories across its partners' property management systems.



### **Seamless Transactions and Settlement**

The sheer volume of transactions in the travel industry leads to data discrepancies and costs companies billions of dollars. When all transactions are shared simultaneously across the distributed ledger, the reconciliation time for each transaction will reduce significantly.

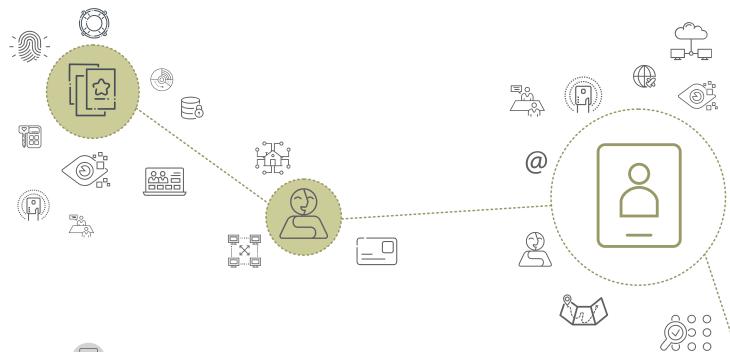
Transactions on blockchains will be governed by smart contracts that encode the rules of the commercial relationship between participants. Digitally shared contracts increase trust in the ecosystem and significantly reduce the time and costs involved in executing them.

For instance, the Winding Tree public blockchain incorporates a set of smart contracts on Ethereum (one of the two largest public blockchain networks, the other being Bitcoin) with a Decentralized Autonomous Organization (DAO) governance platform.

 $<sup>2.\</sup> https://venturebeat.com/2017/08/23/blockchain-startup-winding-tree-could-upend-the-travel-industry/$ 

<sup>3.</sup> https://skift.com/2017/07/11/blockchain-will-disrupt-expedia-and-airbnb-tui-ceo-says/







## **Identity Management with Enhanced Security**

Biometric information, once stored, authenticated and encoded in a distributed blockchain ledger, can be used to validate customers' identities without requiring them to repeatedly share their personal or financial information. It will also enable travel players to

provide personalized offerings to their customers.

Air transport communications company SITA4 is researching the use of 'single travel tokens' built on the principle of Single Sign-on (SSON) stored on

mobile or wearable devices, and authenticated by blockchain to reduce document checks during customer journeys. Airbnb is already using blockchain to secure the sharing of user profiles with third parties.



## Frequent Flyer Program Management

Blockchain can transform the loyalty membership experience for both businesses as well as customers. On a distributed blockchain ledger, loyalty rewards offered by travel companies can be tokenized and redeemed immediately. In a vast blockchain that includes almost all travel players, customers' redemption options will multiply exponentially, including the option to transfer tokens to friends or convert them to cryptocurrencies.

Loyyal, a technology startup, has launched a blockchain-based universal loyalty and rewards platform. This will make it easier for companies to manage loyalty liabilities while offering multi-brand rewards programs as well as customized redemption options. The Jumeirah Group, in partnership with Dubai Holding, is using the Loyyal platform to enhance the efficiency of its loyalty programs. Scandinavian local governments are also using the platform to boost tourism.

4. https://www.sita.aero/innovation/sita-lab/identity-management/the-single-travel-token







## Maintenance, Repair & Overhaul

The digital ledger can be shared by airlines, Maintenance, Repair and Overhaul (MRO) teams and Original Equipment Manufacturers (OEMs) to record flight operations, conditions and scheduled aircraft maintenance

checks. It can also help forecast when repairs should be made. Payments for parts or services will not be subject to delays.<sup>5</sup> Blockchain can also help calculate the average stopover and based on the average traffic handled by the Air Traffic Control Center, the average take-off time can be calculated, thus providing all players accurate runway information.



## **Supply and Vendor Management**

Blockchain can enable hotels to get visibility on supplies right from the farm or factory till it reaches the end customer in a room. A private blockchain can connect exporters/importers, packers and others in the supply chain. By understanding clearly what is being farmed/grown and when the harvest occurs, distributors can assess to what extent market demands can be catered to, and also map what consumers want to increase the demand and supply of specific products.

5. https://medium.com/@akme\_c/blockchain-platform-ideas-that-will-enable-the-airline-industry-80b1eaeb9b56



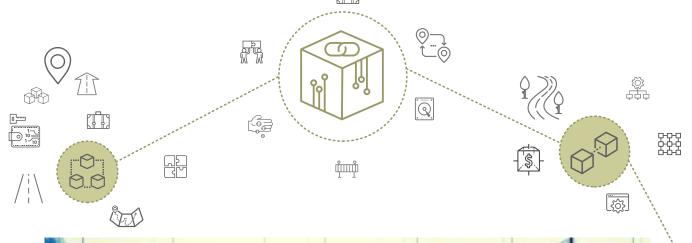


## Adoption of Blockchain: A Long, Hard Road?

The blockchain market is pegged to be worth around USD 2.3 Billion by 2021. However, true broad-based adoption might still be far away. For all the buzz that blockchain is generating, experts believe that a firm understanding of its nuances

and techniques — even limitations— has not been achieved.

A Deloitte<sup>7</sup> survey of large companies in the U.S. found that almost 39 percent of senior executives indicated they had little or no knowledge about blockchain technology. Businesses are wary of investing in a technology that is still at a nascent stage. But senior executives who are well-informed about the potential of blockchain have begun investing in this technology.





<sup>7.</sup> https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-survey-blockchain-reaches-beyond-financial-services-with-some-industries-moving-faster.html

While many companies in the travel industry mull over whether to invest or how to infuse the technology into their existing systems, the adoption of blockchain will center on four key parameters.



#### Business and Stakeholder Buy-in

For businesses still reeling from digital-led transformations, adopting blockchain will probably mean another round of process reorientation, infrastructure alignments and business model modifications. This is probably the main reason why until now the adoption of blockchain has been slow.



#### **Increase in Security Awareness**

Blockchain is a difficult technology to understand and requires both internal and external learning. For example, in the current digital ecosystem, a hacking incident, if not detected on time, can have possible implications on future transactions.

However, the loss of a blockchain key will not only wipe out an entire account, it can pose a threat to all the data and transactions that had preceded the hacking. Companies will need to invest considerably in educating employees, customers as well as the industry at large on the norms of using blockchain-based applications.



#### Use Case Prioritization

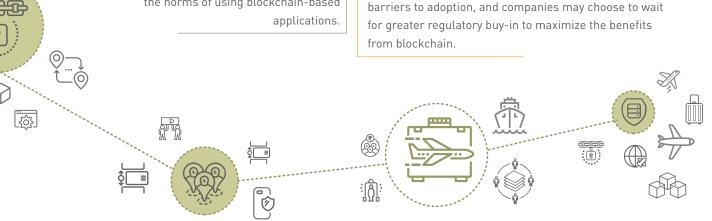
As blockchain is still an evolving technology, it's hard for developers to build their systems on top of it. Apart from the lack of standards and domain-specific protocols, blockchain might actually be slower and more resource-intensive in some processes. In such cases, a company will need to bet on the 'network effect' to make the investment worthwhile.



#### Regulatory Buy-in

Smart contracts are at the heart of the efficiencies that can be delivered by blockchain, be it in effecting immediate settlements, doing away with the need for reconciliations, or even managing loyalty liabilities of companies. However, until smart contracts are accepted as legal contracts in a court of law, the benefits will be undermined by the need for companies to maintain redundant legal contracts and prove compliance.

Financial auditing is another area where regulators will need to accept records on the distributed ledger as the final authority. Regulations will be one of the leading barriers to adoption, and companies may choose to wait for greater regulatory buy-in to maximize the benefits from blockchain.



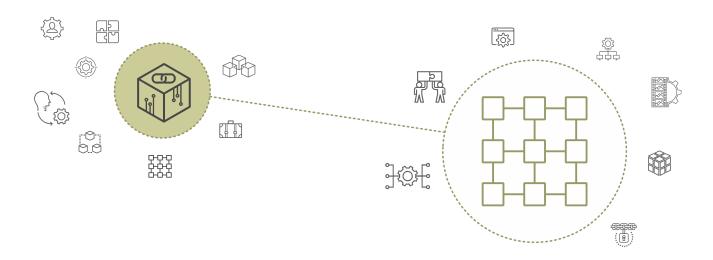




Perhaps one of the most telling illustrations on the state of adoption of blockchain is a recent survey response<sup>8</sup> by executives wherein the *likeliness* of adoption of blockchain to resolve specific problems trailed the *potential benefits* delivered by it. Although this particular survey was for the logistics industry, it exemplifies the

current thinking on blockchain adoption across all industries — everyone seems to acknowledge that it delivers benefits, but can't see how they will adopt it.

While the game is all set to change in the next three to five years, it's imperative to remember that blockchain is not a 'disruptive' technology, but a 'foundational' technology.' Industry-wide public blockchain initiatives might open up newer business opportunities or lower barriers to entry in some parts of the travel value chain. Can there be a more compelling proposition to watch this technology closely?



 $<sup>8.\</sup> https://www.researchgate.net/figure/318724655\_fig7\_Figure-5-Evaluation-of-Use-Cases$ 

<sup>9.</sup> https://hbr.org/2017/01/the-truth-about-blockchain



#### **About WNS**

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