

# ACND

A Blockchain Solution for Corporate Travel

## Abstract

The travel space is notorious for late adoption of technology. There are significant opportunities for new, innovative solutions in the industry. The travel industry faces many issues in B2B payments, bookings, and reconciliations. Agencies, travel management companies, and suppliers are faced with many risks such as fraud, foreign exchange, mismatched booking information. There have been payment innovations in the space recently, such as VCNs, but there are still many shortcomings. With the invention of blockchain technology, many payment solutions are facing disruption. Using blockchain technology, we are building a payment solution to improve the travel B2B payment landscape. Our solution will provide a trustless, borderless payment rail for use in the travel supply chain. This blockchain payment solution will eliminate much of the financial risk associated with current payment channels.

# 1 Problem Statement

The travel industry is riddled with issues resulting from a lack of technological improvements in the business processes throughout the entire supply chain – from consumers to agencies to suppliers. In some instances, upfront payments are required (even with VCNs). In some cases there are half a dozen parties involved in bookings which cause mark ups from “middle men”. In the case of corporate travel, there are issues with ensuring the bookings are being made within the corporate travel policies. According to a data from Phocuswright, only 12 percent of travel companies accept 10 currencies or more, which exposes them to many foreign transaction complications. Many agencies are also still using fax machines to scan and send credit card and payment data.

While the travel industry has been notorious for antiquated technology, there have been significant developments in the B2B travel payments space. Travel consumers book bundled travel, often with the help of an agency or travel management company (TMC). The agency then has the responsibility to remit payment to the travel suppliers and other entities throughout the booking process (commissions etc.). These payment channels present several challenges for agencies and suppliers. Agencies and suppliers are faced with foreign transaction exposure and errors in making cross-border payments. Fraud is also a major concern when it comes to traditional payment avenues.

According to recent research from Tipalti, a FinTech firm specializing in Global Payments, 60% of businesses engaging in cross-border payments still use wire transfers for settlement. Many businesses, especially SMEs, require a separate method for dealing with cross-border payments while many others do not have any defined process for international payments. These international challenges are preventing many companies from expanding their business as the demand for international travel increases.

Travel agencies often make bookings with suppliers on behalf of travel consumers and settle payment at a later date. The timing differences arising between booking and payment opens businesses up to increased foreign exchange risk when dealing in cross-border payments. Due to the complexity of international travel payments, very few travel companies have adapted to deal in a multitude of currencies.

In addition to the obvious issues arising from cross-border payments, travel companies are burdened by an error-prone and time consuming booking and payment reconciliation process. There are often issues with data mismatches in the reconciliation process which causes entities throughout the supply chain to miss out on commissions and incur otherwise avoidable losses.

The recent advancements in B2B travel payments are dominated by businesses selling a payment solution via virtual account numbers (VANs) or virtual card numbers (VCNs). These VCNs enable agencies and TMCs to accept payment from customers and use one-time use virtual credit card numbers, which can then be used for remittances to suppliers. While the use of these VCNs addresses some of the issues of cross-border payments, there is vast room for improvement in the space.

## 2 Solution

While there have been advancements in the travel payment space such as VCNs, business still faces massive hurdles related to FX exposure and fraud when dealing in cross-border payments. Using VCNs can reduce exposure, but is far from a perfect solution. Using blockchain technology, VCNs can be replaced by token-based payment solutions which allow agencies to accept and transfer value to suppliers through a decentralized payment ecosystem. A tokenized B2B payment solution offers marked improvements over any currently available solutions, including VCNs.

We are developing a tokenized corporate travel payment solution to address the current challenges faced in the travel industry. Using blockchain technology, we are creating a virtual payment environment to service the needs of agencies, suppliers, and corporate travelers. The use of a tokenized payment system will allow agencies to transfer value by conducting B2B payments through a blockchain instead of generating one-time use virtual credit card numbers or making wire transfers. Implementing blockchain technology as a payment solution will reduce transaction cost and further reduce the risk of fraud and foreign exchange exposure. This solution will also reduce the need for reconciliations and time-consuming audits by further automating AP/AR processes. Using blockchain technology to settle B2B payments also allows for extremely advanced security features since a properly implemented blockchain solution is immutable. Our blockchain solution will create secure, closed-loop transactions to be used without regard to currency or borders.

Our solution will also eliminate many of the issues and cumbersome processes outlined above. With a tokenized payment solution, we can eliminate multiple intermediary parties and outdated payment tracking and accounting solutions. Implementing our token payment solution will take the travel B2B payment space from fax machines and wire transfers to a new age of secure payment processing.

## 3 ACND Ecosystem

### 3.1 Overview

The corporate travel payment ecosystem will use the ACND token. The token will be used to store and transfer value between entities including the corporation and corporate travelers, the agencies, and the suppliers (air, car, hotel). Using a unified token for the entire ecosystem will allow vertical integration of corporate travel payments as well as the accompanying information. This will enable agencies to easily manage bookings and reservations while collecting and remitting payment using the ACND token. Corporate travelers will also be able to use the token to pay for travel directly to suppliers as needed. Suppliers and agencies will be able to accept the token through use of the wallet. Any parties taking part in the ecosystem will be able to operate nodes on the network, which is crucial to this decentralized solution. This will eliminate the need for VCNs, VANs, and corporate credit cards by allowing the parties to transfer value without a trusted third-party payment processor.

### 3.2 Architecture

#### 3.2.1 ERC-20 Token

To implement our proposed solution, we plan to build on Ethereum. For compatibility in working with the Ethereum system, we will develop an ERC-20 compliant token. We chose Ethereum for the capability to deploy smart contracts as part of our payment solution.

### 3.2.2 State Channels

In creating a blockchain payment rail, we plan to explore the use of state channels. State channels can facilitate transactions without publishing to the blockchain until a predetermined amount of time or amount of transactions has occurred. This enables faster transactions and makes the solution more scalable as the transactions are tracked off-chain. Transactions occurring within state channels are instant. When the state is finally published to the blockchain, only the net result of transactions within the predetermined time frame are pushed to the blockchain regardless of transaction volume occurring between parties within the state channel. This allows for instant transactions with much lower associated costs.

### 3.2.3 Smart Contracts

Our implementation of smart contracts within our travel payment ecosystem will revolutionize the current processes used by corporations, corporate travelers, and agencies. The smart contracts are written as code on the blockchain and facilitate automation of processes associated with the payment rail. Our solution uses smart contracts to automate payment of commissions to the various parties throughout the vertical travel supply chain.

### 3.2.4 Application Layer

[Complete app layer architecture detail]

### 3.2.5 API Integration

[Complete API integration detail]

## 3.3 Seamless Integration

Another important consideration is the integration of the ACND token ecosystem with current payment channels. Corporate travelers may be required to use traditional payment methods such as entering 16-digit card numbers when purchasing travel, especially to suppliers who do not yet accept ACND tokens. Also, many hotels require a physical card when a guest arrives for a stay. To solve for this inconvenience, our solution will include the use of 16-digit card numbers as needed. Corporations will have the ability to request digital and physical card numbers for their employees to use while traveling. A given digital or physical card will be associated with a ACND wallet and allow travelers to exchange value using their ACND token balance. Through the use of smart contracts, the ACND tokens will be called and converted for use in payment in real time as purchases are made. Users will also be able to control access to the card remotely by toggling the card on or off in the case of loss or theft.

## 3.4 Fiat Considerations

While cryptocurrencies are becoming more widely acknowledged and adopted, we recognize the need to allow the ACND token to be easily converted to fiat and vice versa. Corporations will be

able to use fiat (or other cryptocurrencies) to purchase ACND tokens for use in the ecosystem on an as-needed basis. Agencies and suppliers will also have the option to convert to a local currency to fund business operations once payments are settled and services are rendered. By partnering with exchanges, we will be able to offer quick and secure conversion to or from fiat for any parties using the ACND token.

### 3.5 Back-Office Implications

Often, there are disparate payment methods for any given trip taken by a corporate traveler. The consumer may book a flight through an agent while paying for a rental car and hotel with their corporate credit card on site. This creates challenges for corporations when reconciling travel spend and performing audits to ensure expense reports are within the travel policy. The use of the ACND token eliminates these back-office issues by providing a single source of payment and related information. Travel managers will be able to assign wallets on an as needed basis to employees. All purchases made through a given wallet will then be easily reviewed and the information will be available in one location, eliminating much of the hassle of reconciliations. The use of ACND tokens will also eliminate the need for employees to complete expense reports. In eliminating expense reports, travel expense audits will also be eliminated. By eliminating the need for these processes, corporations will enjoy a great deal of savings.

### 3.6 Travel and Expense Policy Automation

Using smart contracts, corporations will be able to set expense policies for specific wallets. Travel managers will have the ability to set spending limits as well as limiting the type of transactions allowed (i.e. limited to travel expenditures). The feature will allow travel managers to use the app and vary settings depending on the traveler's status which is feasible since varying policies can be assigned to each individual wallet. This is another feature that will create efficiencies and savings for the corporations using the ACND ecosystem.

### 3.7 Payment Remittance Automation

Often, agencies collect payment from a corporate traveler and are required to remit payment to multiple suppliers. This process will be automated as smart contracts will interface with the travel data to auto-escrow funds and remit as services are rendered. Any commissions to the agency will also be accounted for apart from the supplier payment. This will improve the speed and accuracy of payments between agencies and suppliers.

### 3.8 Settlement

Payments made using the ACND token will settle in real time. As most agencies do not have a single method for cross-border payments, settling with suppliers in the ACND token will eliminate the costs associated with wire transfers. There will be a small mining fee paid at the time of transaction, but the fee will be a small fraction of the transaction (less than 0.5%). Settlements made using the ACND token will take place in a matter of seconds compared to the multiple days required for settlement of a cross-border wire transfer. Settlement will be tracked through the ACND blockchain as an immutable distributed ledger. Thus, eliminating payment disputes between agencies and suppliers.

## **4 Strategic Partnerships**

### Teplis Travel

Teplis Travel is an Atlanta-based Travel Management Company. We are partnering with Teplis Travel in providing the ACND solution as a means for B2B payments and a solution to offer their corporate clients. Teplis Travel has been in business for 45 years and remains one of the top travel management companies in the US. Teplis generates about \$200 million per year in travel revenues. As a member of the Frosch Travel Group, Teplis Travel has a critical mass of clients and will be a key strategic partner to ACND. As part of our roadmap, we plan to rollout our Beta by providing exclusive access to Teplis Travel and their clients.

## **5 Conclusion**

The travel industry is in dire need of innovation. The current state payment solutions in the travel space requires antiquated, slow and expensive processes. There is great opportunity for a payment solution which tokenizes the corporate travel ecosystem.

The potential value of bringing such a solution to the marketplace is immense. Travel companies' margins are squeezed by exorbitant payment processing fees and expenses caused by inefficiencies. Commissions are lost due to low data quality and means for collection. Back office expenses are growing as reconciliation becomes more difficult due to the increasing complexity of the travel landscape.

ACND allows for an efficient and effective solution to these costly issues facing the travel industry. With a decentralized solution to payment and data issues, ACND will be a disruptive innovation in the space.