Trippki

A Decentralised Ecosystem for Customer Rewards

White Paper
11th October 2017
V1.2

Abstract

Online hotel booking is a classic example of a market that heavily relies on intermediaries. This creates overheads at the expense of both customers and businesses while third parties keep control of customer data in silos and hinder customer relationships. We propose a new decentralised ecosystem - Trippki - that substantially reduces platform commissions and enables direct relationships between the customer and the business. Trippki provides an easy to use crypto token loyalty framework that is designed to align economic incentives and create a broad network effect. An open system that combines booking and customer reward systems can make the travel industry more cost effective and enhance customer / business relationship at the same time.

This document describes an open, decentralised reward protocol and an incentive alignment system (i.e. the TRIP token) built on top of Ethereum and other components: identity service, exchange, integration and application layers. The crypto-economic aspects of the ecosystem are also explained i.e. how the system is bootstrapped to build network effect using techniques of Buy & Burn and The Vault. Readers familiar with blockchain technology can skip section 3 as that explains the basics.

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1. Introduction

Trippki is a new hotel booking channel and customer reward system that incentivises sharing the value transaction in the booking process between guests and hotels - the players that actually create value. By disintermediating the current OTA (Online Travel Agent) model, Trippki gives control back to customers and hotels, allowing not only value sharing, but reducing the costs associated with traditional centralised booking platforms.

Such systems were not possible before the emergence of decentralised cryptographically verifiable computing that allow participants to cooperate and enter business relationships without trusting each other or relying on a third party. Trippki aims to solve common problems with traditional booking platforms and enable more sustainable relationships between customers and hotels.

1.1 Problems

Hotel booking has become increasingly centralised and is dominated by a small number of OTAs. While on the surface they provide convenient aggregation portals, in truth they distort the free market in travel accommodation. This results in a sub-optimal marketplace with low margins, high commissions, low customer retention and difficulty in reaching new customers.

Hotels want to have a direct relationship with their customers. That's how they can offer their guests the best service and the best deals. Reward systems offer an answer, but hotels are struggling with how to implement a reward solution that really works, something that creates true value and ultimately builds loyalty with their guests. Current reward systems are expensive to run, have a low usage, are proprietary and do not encapsulate value and are not transferable.

1.2 Approach

Trippki replaces the traditional closed silo model with an open protocol powered by an Ethereum based token system. In the Trippki model, part of each booking payment is converted into TRIP tokens (see Section 4 - Trippki Ecosystem Architecture) which are given to the customer as a loyalty reward. TRIP token's data persistence and immutability is provided by the Ethereum network, granting a built-in system of reputation that allows hotels to tailor specific, reputation based, offers to their guests.

1.3 Value Proposition

The TRIP token value is derived from access to a cost-efficient universal loyalty points travel economy. TRIP is a cryptographically secure and decentralised token. TRIP is a crypto-asset that is robust and redeemable at the holder's discretion, unlike any other reward point. For customers, TRIP has immediate utility as it can be used to pay for hotel bookings and services on the Trippki platform. Over time, customers can build

reputation on the platform, allowing hotels to serve them with bespoke offers, hence forming a direct relationship with their guests.

Trippki utilises crypto-economic alignment for the different players within the travel economy. Our goal is to build and maintain a network effect that can dramatically reduce channel costs (commissions) from up to 30% within the existing OTA model down to 2.5% - 5%, and possibly gradually to zero.

2. Hotel Industry

2.1 Current State of the Industry

When the world wide web started gaining adoption in the early 1990's one of the first industries to be disrupted was the high street travel agent, as airlines could simply reach out and sell seats through their own platforms, resulting in many retail travel agents closing down.

For hotels the internet meant that, for the first time, they too could also reach out to the consumer, but it was a poor user experience as the onus was on the customer to spend their time on research. The Travel Agent (OTA) solved this problem by providing the customer with the tools to research and select hotels according to their budget. Hotels could now reach customers through a cost effective distribution channel.

However, what at first was a mutually beneficial model for all the players (hotel, guest, travel agent) has evolved into a distortion of an open free market with the OTAs becoming a dominant centralised channel creating a sub-optimal marketplace. Issues within the marketplace include:

High Commissions

Hotels pay between 10-30% to OTAs which cuts straight to their bottom line and results in a poorer customer experience as there is less revenue for hotel improvements, staff remuneration and customer discounts.

Brand Hijacking

OTAs use the commissions they take from hotels and spend it on massive marketing budgets to compete with each other to get customers to utilize their platforms. OTAs then blatantly hijack search keywords on Google et al. to leverage hotel brands and to drive consumers to their websites.

Rate Parity

OTAs commit hotels to what are known as Rate Parity Agreements, to ensure that rates are consistent for the same product across all channels, displaying cartel like behaviour in this respect. This means that no matter what channel the consumer uses, whether it be an OTA or with the hotel directly, they pay the same price. Undercutting in rates is believed to cost hotels $1b per year.

Indirect Relationships

Consumers have a better experience when not having to deal with intermediaries, as the end supplier takes responsibility for the service they are providing. Hotels are in the business of providing a rewarding experience to their guests and can better achieve that through a direct relationship with their customer.

Loyalty

Customer acquisition is costly and with the whole service industry looking to improve margins and improve customer loyalty, it is therefore vital to reward consumers with the best experiences and the best incentives by which they can make the most of in house services. This will result in repeat visits & brand loyalty.

Rewards Systems

Hotels use reward systems to build loyalty with customers, spending a significant percentage of their budgets on such programmes, but to little avail. These programmes are expensive to run and provide a poor consumer experience - they're inflexible, non - transferable, cumbersome and result in minimal redemption.

The current hotel booking model is not sustainable. It drives an inferior consumer experience, it squeezes profit margins and further erodes the direct link between the hotel and its guests. Trippki provides the solution to this problem by establishing a new decentralised ecosystem which uses TRIP rewards to align economic incentives between hotels and consumers.

2.2 Addressable Market

The global hotel booking market is currently worth $528 Billion annually, and is expected to double by 2030. Online bookings through OTAs, make up about 40% ($211 Billion) of the market for which they retain $32 Billion by way of commissions.

In terms of the OTA space, the US and Europe are broadly similar in size and account for 70% of the market, China has a 11% share and the rest of the world make up 19%. The growth in the global market is being driven by Europe and China with strong double digit growth whilst the mature US market is expected to maintain steady single digit growth. There are also a large number of attractive emerging markets with strong growth potential.

The OTA market is dominated by a duopoly of the Priceline Group and Expedia who combined account for over 80% of the OTA market. There is an illusion of consumer choice in the market as the majority of brands sitting under Priceline (Booking.com, Opentable, Cheapflights) or Expedia (Hotels.com, Trivago, ebookers.com). The Priceline Group is the world's largest OTA with a market capitalisation of $70M. It is expected that by 2020 that between them these 2 groups will control 94% of the market.

Hotels are not confined to the OTA space. They can sell direct online through their own website and they can market rooms offline through tour operators. Pricing is the same for both offline and OTA channels as hotels have to adhere to the rack rate (price parity agreement).

The Trippki addressable market comprises both the OTA and offline markets as its booking channel and reward system is not limited solely to the online space.

3. Blockchain Technology Background

Blockchain based crypto-economic systems allow the removal of intermediaries from business processes. The data that underlies those processes, be it asset management or identity and reputation systems, is decentralised and persistent. This means that no party can act dishonestly by controlling the data and that no single party has to maintain the data, because it is maintained on a public network.

This enables the creation of self-sustainable and autonomous digital economies. Trippki's protocol includes: a tamper-proof reward point system combined with reputation and identity layer, as well as a mechanism that ensures liquidity and scalability. These components are implemented by using solutions that are based on a public blockchain.

Blockchains are database-like append-only structures that (alongside consensus algorithms and incentive mechanisms), provide a high level of coherence and persistence of data and code. This is what blockchain technology does: it offers integrity of data (i.e. Bitcoin - as decentralised ledger), integrity of code (i.e. Ethereum - as decentralised virtual machine), and auditability and persistence on the level that server based infrastructure does not. Because of this, blockchains allow intermediaries to be removed from business processes i.e. Bitcoin is a payment processing system that doesn't requires intermediaries, therefore reducing transaction costs and attack vectors associated with centralised control.

Tokens: Crypto-tokens can be regarded as data entries that are persistent and auditable. The token behaviour is programmable, and as such can mimic and act as different kinds of value transfer instruments and assets. Tokens can represent access to services or information and power reward systems. The value proposition of tokens is not limited to traditional financial instruments. Most importantly, regardless of their particular functionality, tokens align incentives amongst network participants.

Smart contracts: A smart contract is cryptographically verifiable code that executes instructions over cryptographically verifiable data (i.e token balances). The main feature of such code - integrity - is enabled by blockchains. Smart contracts run exactly how they have been programmed. While crypto-tokens remove intermediaries from payment processing, smart contracts remove intermediaries from business processes and agreements.

One simple example is an automated escrow - parties agree on conditions that will trigger a certain behaviour i.e. an escrow release. When the predefined conditions are met, predefined instructions are performed automatically, exactly as programmed.

Decentralised Applications (DApps): Applications powered by smart contracts that are, roughly speaking, deployed to the network rather than to a server and run exactly according to their programming. Decentralised applications are sometimes referred to as "ecosystem applications".

Decentralised Autonomous Organisations (DAO) Definitions of DAOs vary. In short, DAOs are complex systems of smart contracts that act as autonomous entities. Instead of being controlled centrally they are governed by incentives and counter-incentives of their participants: individuals, groups, machines, authenticated data-feeds (Oracles) and other DAOs. The earliest example of a DAO is Bitcoin: the network is maintained by the miners who are rewarded with bitcoin, while the value of bitcoin essentially comes from the access to the network that it represents - access to the network that the miners maintain. DAOs can have a different degree of autonomy, or become more autonomous overtime.

When combined, the components and tools mentioned above bring business process automation to a new level. If business agreements can happen without a need to trust a third party, a lot of overheads as well as attack vectors associated with a third party, can be reduced or removed. Removing intermediaries allows businesses to be built differently - as ecosystems, rather than silos such as traditional hotel booking platforms.

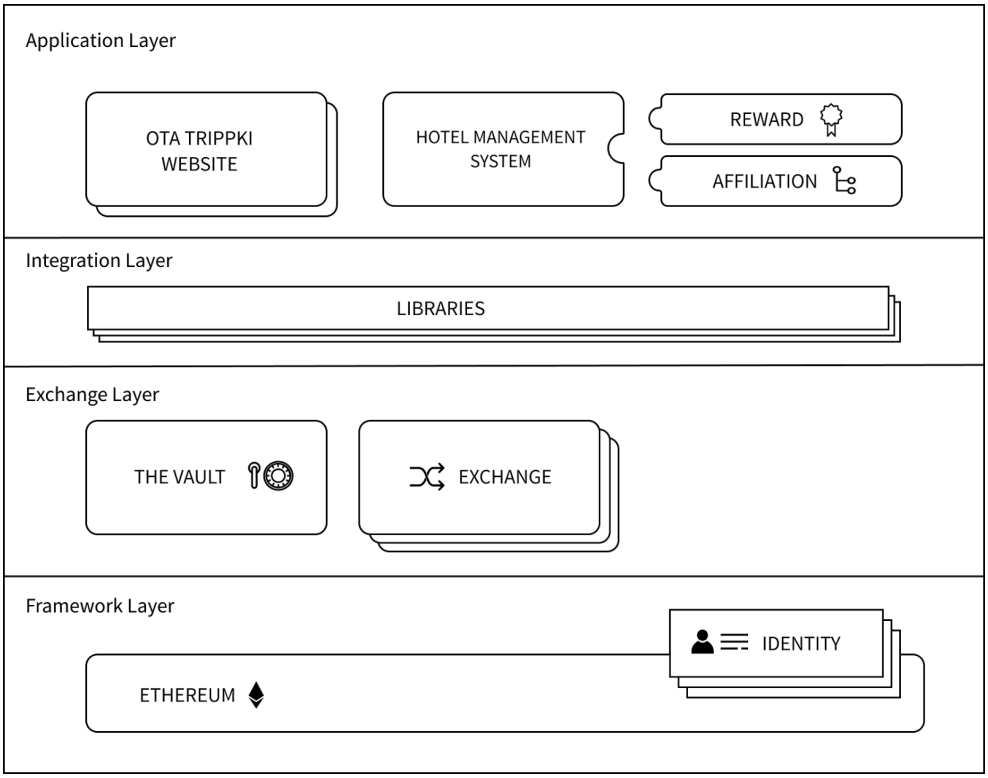
4. Trippki Ecosystem Architecture

Trippki is designed to evolve into a fully decentralised autonomous economy. The TRIP token as well as other fundamental components are fully decentralised from the start. This will include an identity service to encapsulate the connection between cryptographic pseudonymous identities (ECDSA* keypairs) and hotel customers accounts.

Initially the higher level aspects of the ecosystem, such as the User Interface, will be hosted centrally, but once the MVP is out, releasing Swarm and IPFS versions is on our roadmap.

The Trippki ecosystem is represented in the diagram below and is comprised of the following layers:

- Framework layer
- Exchange layer
- Integration layer
- Application layer



The remainder of this section provides an explanation of the components of the ecosystem and how they interact.

4.1 Framework Layer

The Framework Layer provides the most fundamental components for the system. It is where all TRIP transactions take place and where the identities of the different players are held.

The information about who holds which TRIP is the basis for the entire system.

4.1.1 Ethereum

The Ethereum Blockchain provides the open, shared, decentralized backbone of the system. It's used to create TRIP Tokens and transfer them securely and robustly between different parties.

TRIP will be issued according to the Ethereum Token Standard as per ERC20. Following is a list of the functions that will be implemented in the solidity issuance contract (the bare minimum required by the standard):

- totalSupply - initial issuance
- balanceOf - get balance of address, this is where the initial distribution of wealth happens
- transfer - basic transfer of TRIP between addresses
- transferFrom, approve, allowance, Transfer, Approval - additional functions and events required by the ETS

4.1.2 Identity

The Identity component is responsible for storing shared information on the users of the system, this includes end users such as hotel guests, and service providers such as Hotels and OTA sites.

It will enable a hotel guest to identify themselves to any of the other participants, and share verified personal information between them.

There are many ways to hold and store such data, and we expect many different implementations as the ecosystem grows i.e. local, remote, private, public, centralized and decentralized.

For the purpose of bootstrapping Trippki, we will develop and run our own implementation of an open Ethereum based identity service, which will integrate with the Trippki OTA.

In this model, implementation Identities will be represented by asymmetric cryptographic keypairs, where each guest holds a private key and uses a public key to prove their identity and link it to shared information such as registration information and crypto addresses.

By using such a system, a guest can allow an OTA to store specific information about them and associate it with their identity upon registration. Guests can then prove their identity to any other entity in the system, including new players, and allow them to view selected parts of stored information.

For example, the guest registers with the OTA and stores their booking information and their TRIP address on the service. Upon reaching the hotel, the guest can use the service (and their private key) to prove that they booked the room, and share their TRIP address so that the hotel can reward them. Were the guest to make a subsequent stay at the hotel, they can prove that they stayed previously, and that since that first stay they have stayed in a dozen other hotels and collected rewards in TRIP. This is the basis for any number of reward system strategies that can help the hotel to retain its patrons.

To simplify the process of generating asymmetric keypairs and storing them, the Trippki OTA will supply a service for generating and securely storing a customer's private key, properly protected, while using that key to sign identity requests as instructed by the customer.

The identity service will support two API calls, which will pass over HTTPS to the service.

- write(pubkey, kwargs)
    - The guest's software (e.g. the client side of the OTA site they use) composes a request to associate a dictionary of key/value pairs, signs it and hands it to an authorized entity (for our first Identity service this will be the OTA, or any hotel authorized by it).
        - The request contains a timestamp, so it quickly expires and can not be replayed or reused in any way.
    - The authorized entity signs it again and sends it to the service.
    - The service stores the dictionary and indexes it according to the pubkey.
- read(pubkey)
    - The guest's software (e.g. a mobile application on their phone) composes a request for the values of specific keys associated with his pubkey, signs it and hands it to the hotel.
        - The request contains a timestamp, so it quickly expires and can not be replayed or reused in any way.
    - The hotel's software sends the request to the service.
    - If the request is valid and properly signed, the service returns the selected stored values.

4.2 Exchange Layer

The exchange layer is responsible for converting ETH (or an Ethereum based stable coin) and fiat into TRIP tokens.

The exchange layer comprises external exchanges and The Vault, a smart contract that holds TRIP tokens to provide liquidity and a deflationary effect during the bootstrapping process.

4.2.1 Exchange

There can be any number of external exchanges with which the system integrates, as long as they allow for the exchange of ERC20 standard tokens. The types of exchanges will vary and will include private, public, centralized and eventually distributed implementations as they become available.

The system will use an Oracle to obtain information about current market rates to set the rate of TRIP within The Vault.

4.2.2 The Vault

To provide liquidity and fair pricing during the bootstrapping phase of the project, a substantial portion of the issued TRIP (40%) will be put under the control of a specialized smart contract - The Vault.

The Vault will provide a dependably good rate of TRIP for ETH, but only for verified, identifiable reward transactions, and only in a limited predefined volume.

On pre-defined milestones, the accrued ETH (or an Ethereum based stable coin) will be used to buy back TRIP tokens from the exchange and destroy them, thus boosting the value of all remaining TRIP tokens.

The Vault is a part of the bootstrapping process, and is expected to function for a limited time only, until all TRIP tokens and ETH are exhausted, and network effect has been achieved.

If, for any reason, a large amount of TRIP remains "stuck" in the vault for an extended period of time, the governing contract will burn some or all of its TRIP content in a predefined fashion.

The behaviour of The Vault can be defined as follows:

- Vault contract:
    - sellTrip
        - Move TRIP from The Vault to an identified address (booked hotel guest) in exchange for ETH to be paid from an identified address (hotel) if all business conditions are met (verified by The Vault).
    - burnTrip
        - Burn a specified amount of TRIP from The Vault if sufficient predefined milestones were reached.
    - buyAndBurnTrip
        - Use ETH accrued from sellTrip transactions to buy TRIP in the exchange and burn it if sufficient predefined milestones were reached.

4.2.3 Conditional Exchange

Until external exchanges reach maturity, there exists a need to provide a stable supply of TRIP for the single purpose of rewarding hotel guests.

The Vault will be able to convert ETH to TRIP for a set price, based on its price setting algorithm, which is intended to offer a market influenced price. This will only be available under the following terms:

1. The buyer is a known, identifiable* player in the system (a hotel) and has not passed a predefined limit over a predefined time period
2. The recipient is a known, identifiable player in the system (a booked guest) and has not passed a predefined limit over a predefined time period
3. The Vault contains TRIP
4. The Vault is Active

* pseudonymous

The Vault may be deactivated according to a throttling mechanism that will ensure that it's depleted in an orderly fashion over time.

Eventually, The Vault will be exhausted of its TRIP and ETH, the bootstrapping phase will be over. At this point the network effect of the ecosystem will be reached.

4.2.4 Price Setting

One goal of The Vault is to provide the ecosystem with **relatively** stable pricing, and discourage the incentive for players to act as bad actors within the ecosystem. It will do so by using a price average from exchanges, providing a stable pricing over time/volume intervals. We assume that until the ecosystem reach maturity it will lack stability, and when price changes drastically it can become unfair for participants and may adversely affect the building of a network effect.

The Vault will provide an exchange rate that is much more stable, and generally lower than that offered by external exchanges.

Simple Example of price setting:

F = floor price (set by Tippki)
wF = weight for Floor price
Xma = Exchange moving average (provided by an open, examinable and changeable software deployed by Trippki - Oracle)
wXma = weight for Xma

$$Price = max(F, \frac{F*wF + Xma*wXm}{wF+wXma})$$

This will provide a price that is floored by F while influenced by the market moving average price, which can be set daily, for example.

4.3 Integration Layer

The integration layer is a toolset composed of software libraries and code samples that interact with the lower layers and tie them together. It is intended to simplify and speed the process of development within the Trippki ecosystem, specifically at the Application Layer, both for Trippki products (OTA UI) and for any third-parties who are incentivised to build products for the TRIP community.

The chief purposes of this layer is to make it as easy as possible to compose provable reward transactions in which hotels reward guests with TRIP.

The integration layer will greatly simplify the development of software that transacts in TRIP - from simple wallets to complex, decentralized exchanges.

It will simplify the process of safely storing, retrieving, approving and verifying identity data from multiple identity services, and the process of traversing the Ethereum blockchain and cross referencing it with said identity data. **This will supply the system with a robust, secure, decentralized and immutable reputation ledger**.

The integration layer will also include functions to determine the optimal exchange in which TRIP can be bought according to custom rules, and functions to make the TRIP purchase. This includes any Trippki exchange, external third-party exchanges, and - during the bootstrapping phase and for reward transactions only - The Vault.

In addition, it will include a javascript library that will simplify the handling of asymmetric cryptographic signatures and keypairs on the client side of web applications. Other library functions will include:

- Composing and publishing ordinary TRIP transactions.
- Integration with the identity management.
- Cross referencing transaction data with identity data.
- Exchange ETH to TRIP:
    - On Trippki exchange.
    - As a reward transaction with The Vault exchange.
    - On external exchanges.
- Javascript library to handle signatures and keypairs.
- Exchange TRIP to ETH.

4.4 Application Layer

The Application Layer provides the different applications that the end users interact with e.g. a hotel booking platform (OTA). In developing this layer great care will be taken to interact with the lower layers exclusively using the Trippki integration layer, so that the different libraries and components will get an early chance to evolve and respond to actual needs as well as be more thoroughly tested.

At the MVP stage this layer will contain a fully functional and running OTA with a customizable Website, a hotel management system and a mobile application of a specialized TRIP wallet for hotel guests.

We believe that this will only be the first of many customer focused offer applications to build on top of the integration layer and into the Trippki economy.

4.4.1 OTA Website

This is the booking Website which displays offers from different hotels and lets users register and make reservations. In addition to all the things an ordinary OTA Website does, our implementation (and probably any other user application built on top of the Trippki infrastructure) will also possess the following abilities:

- Handle asymmetric cryptographic keypairs, either client side generation and storage or hosted generation and storage.
- Reputation savvy.

4.4.2 OTA Hotel Management System

This is the software used by the hotel's staff to publish offers, track reputation and build loyalty programs. It is also a tool for purchasing, storing and sending TRIP as reward. The Trippki implementation will also allow for the following:

- Handles reward transactions:
    - Direct reward transactions, from the Hotel's wallet to the Guest's, as identified by an identity service.
    - Subsidized reward transaction from The Vault to the Guest's wallet, as identified by an identity service.
- Track reputation on both blockchain and identity services.
- Handle purchase of TRIP on different exchanges.

Our implementation will be based on a plugin architecture so that third party providers can easily develop and deploy their own versions of the following components:

- Reward plugin - calculate the appropriate reward according to a set of easily definable rules, taking into account factors such as original transaction value, TRIP price in different exchanges and the guest's reputation.
- Affiliation plugin - handle TRIP and reputation rewards to third parties referring guests to the hotel.

4.4.2 Mobile TRIP wallet

A mobile application that manages the guest's TRIP, tracks their rewards and reputation with the hotel, and allows the guest to spend and exchange TRIP for other services and currencies.

The wallet will be able to:

- Handle identities and remotely stored private keys.

- Interface with identity services to prove such identities.
- Traverse the blockchain, query identity services and use the data to track the reputation of the guest and the hotels he wishes to visit.
- Handle direct TRIP transactions.
- Interact with TRIP exchanges.

4.5 Example User Story

The following provides an example of how the components described in this section interact to provide an end user customer with TRIP rewards.

- Guest books a hotel, registering on the OTA Website to a hotel offering a TRIP reward.
    - OTA Website uses the integration layer's javascript library to generate a keypair and publish the public key.
    - OTA Website uses the integration layer to store the registration data and associates it with the public key on an identity service.
- Guest arrives at the hotel and identifies themselves, for example by using their mobile app which uses their private keys to ensure they are correctly identified.
- Hotel uses the OTA's management suite to calculate an appropriate TRIP reward. The reward plugin is tasked with doing the calculation based on the business rules the Hotel defined.
    - This calculation may be very simple (e.g. 10% of payment) or more complex (e.g. 5% of payment + 1.5% for every prior stay in any of the hotels in a hotels chain during the last 18 months) - in which case the plugin will make use of the blockchain traversal and identity cross referencing abilities of the integration layer.
- If the Hotel does not have enough TRIP, it uses the OTA's management system to purchase the required TRIP.
    - Hotel uses the integration layer to discover the best price in which TRIP can be bought for whatever currency the Hotel wishes to use and according to any other business rules and restrictions.
    - Hotel uses the integration layer to purchase TRIP. During the bootstrapping phase, the best price will be usually offered by The Vault, in which case the integration layer will be used to enable this special exchange and get TRIP for what is effectively a subsidized price.
- Finally, the Hotel uses the integration layer to identify the Guest and send them their TRIP reward.

5. Summary - Trippki Economic Alignment

There are a number of different crypto-economic aspects to the system that are designed to align the economic incentives of customers and hotels to build a network effect that disintermediates existing OTA platforms.

Due to rate parity agreements hotels must charge the same price for the same product across all channels including those that are direct, otherwise they break contractual agreements and will be removed from OTA booking channels. They can, however, offer redeemable reward points without breaking their contractual agreements. Customers on Trippki will, at the initial transaction, pay the same amount that they would through an OTA, but on Trippki they receive a portion of the transaction value back in TRIP tokens once the transaction is irreversible (usually after they have checked out and paid, but this is hotel specific). The amount of TRIP tokens guests receive is at the discretion of the hotel and will be dependent on the reputation that they have built with the hotel.

Therefore, although customers on the Trippki platform initially pay the same amount as they would on an OTA platform, they will always receive an additional value reward in a limited and deflationary crypto-asset (TRIP Tokens) that unlike other rewards are redeemable at the holder's discretion.

As there is a limited supply of TRIP tokens customers are incentivised to use the system and gain TRIP rewards at the earliest opportunity to maximise the potential value of their reward. Each TRIP holder is incentivised to encourage new users into the ecosystem to further maximise the value to the network.

The value transaction between the hotel and the customer can be split in a number of ways. Say the hotel has offered the customer 10% of the transaction value in TRIP tokens once they have completed their stay, they might offer further incentives for writing a review, for using in house services or for getting another customer to complete a successful stay at the hotel. With hotels and customers engaging in a direct relationship, they will be working for each other in building the value of the network.

The building of network effects through incentivisation is how Trippki differentiates itself from the existing OTA model, which relies on using a large percentage of the value transaction for platform brand marketing as they compete with one another to offer the same deals and provide no additional value to the customer.

To ensure that the system can be bootstrapped effectively the system uses The Vault to provide liquidity within the ecosystem, with 40% of all TRIP Tokens being distributed in this way.

In addition to providing liquidity The Vault exists to put deflationary pressure on the TRIP token supply and create further incentive for holders to build network effect. Funds (ETH and/or an Ethereum based stable coin) accumulated from selling TRIP tokens will be used to buy back TRIP tokens from the open market and 'burn' them on pre-defined milestones. These purchase transactions will not be deterministically predictable, as this will enable front running and will distort the open market value in TRIP tokens.

The Trippki ecosystem provides an alternative economic model to the market in hotel bookings, and a platform in which third parties are incentivised to build applications and services targeting the TRIP growing community.

6. Roadmap

Trippki plan to launch an MVP towards the end of 2018. The will be a full stack release of all the components outlined in Section 4 - Trippki Ecosystem Architecture. It will include an Identity Service at the Framework Layer, basic libraries on the Integration Layer and the opening of a public facing website through which customers can book hotels and earn TRIP tokens.

Testing and release of The Vault smart contract will form an integral part of the development process and we plan to present a separate paper and bounty programme on this later in 2017.

We have already started to onboard hotels into the programme and are working with them to define requirements for the Hotel Management System and how it can be integrated into their existing systems. For example some hotels have a requirement to port over customer reputation from their existing reward systems.

Before and after the token sale we will be releasing a series of supporting blog posts giving in an depth understanding in how we are approaching building out the Trippki architecture. This will include aspects of the system that are outside the scope of the white paper, such as how we plan to integrate payment processing with traditional third parties.

Longer term, we will also looking into scalability solutions for Ethereum. We will be evaluating how other platforms may support the Trippki ecosystem, be that through state channels or an assessment of blockchain interoperability.

Some key dates:

- **Public Launch**. 5th September 2017
- **White Paper**. 15th September 2017
- **Token Sale Summary**. 5th September 2017
- **Token Sale**. 14th November 2017
- **Partner Onboarding**. Q1- Q4 - 2018
- **MVP Release**. Q4 2018