XYO Network in eCommerce

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Contents

Abstract

The XYO Network (XY Oracle Network) incentivizes the reporting of locations and archiving of ledgers by awarding XYO Tokens to nodes within the web. For example, when a last-mile courier like a UPS driver encounters an XYO Network node on their route, the node will record their XYO Network ledger to be archived. Leveraging cryptoeconomics in this way takes advantage of a key feature of blockchain technology - it's a trustless, decentralized system. This means it can offer third-party verification and a degree of reliability that current tracking systems simply can't provide.

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1 Problem

According to a recent study released by Comcast, more than 30% of Americans have had a package stolen from their porch or doorstep [1]. As the market share of eCommerce continues to grow, this problem will only become more prevalent. Megasites like Amazon are experimenting with different solutions to offer confirmed secure delivery as a premium service to their customers.

2 Solution

By utilizing the XYO Network and XYO Tokens, companies like Amazon and UPS can offer, as a premium service, an independently confirmed ledger to track every step of a shipment's progress, starting at the fulfillment center and ending with the package's secure delivery within the customer's home. As a trustless and decentralized system, the XYO Network provides independent confirmation not only of a package's delivery, but of its entire shipping history. This also allows a retailer or eCommerce site to offer payment-upon-delivery, utilizing an Ethereum smart contract to protect the merchant from fraud or loss.

3   How it Works

When a customer finalizes an order, an Ethereum smart contract is created which will release payment to the merchant upon successful delivery of the purchased product. The shipment will include an XYO Network Sentinel, a low-cost electronic device that records its interactions with other devices on the XYO Network on its blockchain ledger. Other XYO Network devices will likewise record their interactions with packages being shipped. Every one of these interactions will be independently verifiable, asserting a web of locational certainty that stretches all the way back to the shipment's point of origin. When the shipment reaches its destination, as confirmed by its interaction with XYO Network devices within the buyer's home, the smart contract will be fulfilled, and payment will be released. Should there be a dispute, the ledger will provide a history that can confirm the delivery of the shipment or show where it went off track.

The terminal point of the transaction - the point where the package is delivered and payment is released - will be determined at the time the order is placed. Amazon has experimented with multiple secure delivery systems, including lockers in public places like convenience stores and even electronic locks that give their delivery team access to customers' homes. XYO Network devices within these secure locations will confirm delivery. In an Amazon locker, the shipped package will interact not just with its locker, but with XYO Network devices in other lockers and the customers that use them. In the customer's home, the XYO Network nodes could include the customer's phone, IoT devices, and even the Amazon Echo that was used to place the order.

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References

[1] Comcast. *Survey: Nearly One-Third of Americans Have Had Packages Stolen from Their Doorsteps.* Business Wire, Philadelphia, PA, December 14, 2017.

Glossary

cryptoeconomics A formal discipline that studies protocols that govern the production, distribution, and consumption of goods and services in a decentralized digital economy. Cryptoeconomics is a practical science that focuses on the design and characterization of these protocols. 1

Sentinel A Sentinel is a heuristic witnesses. It observes heuristics and vouches for the certainty and accuracy of them by producing temporal ledgers. The most important aspect of a Sentinel is that it produces ledgers that Diviners can be certain came from the same source by adding Proof of Origin to them. 2

smart contract A protocol coined by Nick Szabo before Bitcoin, purportedly in 1994 (which is why some believe him to be Satoshi Nakamoto, the mystical and unknown inventor of Bitcoin). The idea behind smart contracts is to codify a legal agreement in a program and to have decentralized computers execute its terms, instead of humans having to interpret and act on contracts. Smart contracts collapse money (e.g. Ether) and contracts into the same concept. Being that smart contracts are deterministic (like computer programs) and fully transparent and readable, they serve as a powerful way to replace middle-men and brokers. 2

trustless A characteristic where all parties in a system can reach a consensus on what the canonical truth is. Power and trust is distributed (or shared) among the network's stakeholders (e.g. developers, miners, and consumers), rather than concentrated in a single individual or entity (e.g. banks, governments, and financial institutions). This is a common term that can be easily misunderstood. Blockchains don't actually eliminate trust. What they do is minimize the amount of trust required from any single actor in the system. They do this by distributing trust among different actors in the system via an economic game that incentivizes actors to cooperate with the rules defined by the protocol.. 1

XY Oracle Network XYO Network. 1

XYO Network XYO Network stands for "XY Oracle Network." It is comprised of the entire system of XYO enabled components/nodes that include Sentinels, Bridges, Archivists, and Diviners. The primary function of the XYO Network is to act as a portal by which digital smart contracts can be executed through real world geo-location confirmations. 1, 2