



Qliktag's IoT Platform & Where Does Blockchain Fit In?

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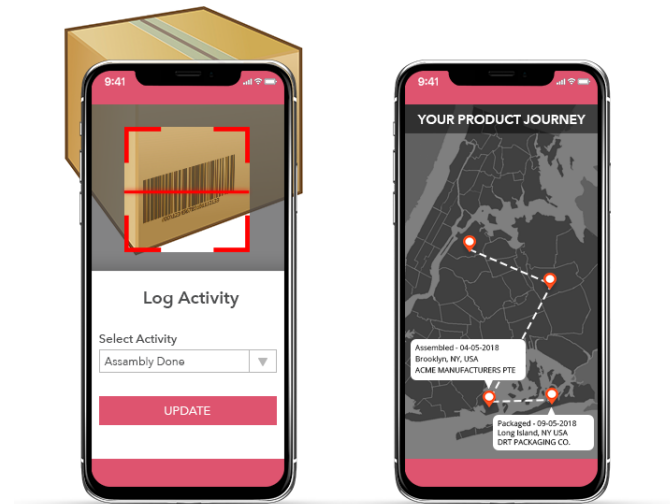


QLIKTAG'S IOT PLATFORM & WHERE DOES BLOCKCHAIN FIT IN?

An Overview

There is tremendous hype around Blockchain these days and we started to wonder how Blockchain applies to Qliktag's IoT platform. Clearly Qliktag's IoT platform is not a blockchain and there is no intent to ever incorporate or turn the Qliktag Platform into a blockchain.

In fact, to achieve the goals of Product Trust which include Truth, Transparency and Traceability, both an IoT platform like Qliktag's and blockchain have a role to play.



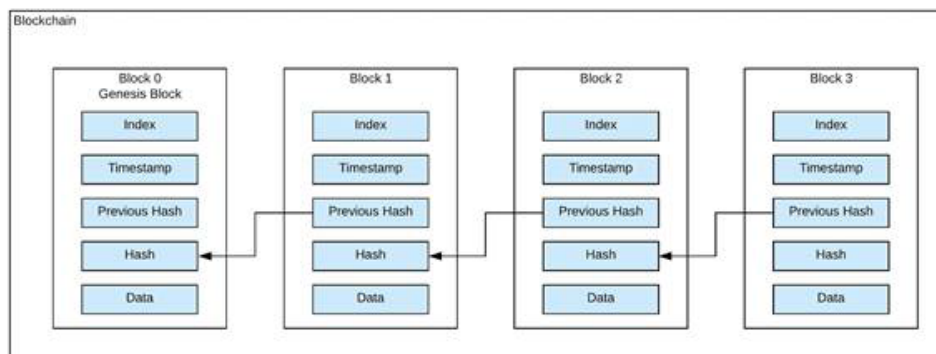
Product Trust emerges from being able to deliver Truth, Transparency & Traceability.

HIGH LEVEL LOOK AT QLIKTAG IOT DATA VS BLOCKCHAIN DATA



Digital Twins vs Non-Fungible Assets

At a high level, one can think of Qliktag's IoT platform as the repository of digital twins of non-fungible assets much like a web address holds the digital asset associated with a NFT that can be transacted on the Ethereum blockchain. So while the blockchain is suitable for storing and maintaining ownership & transactions through a token that digitally represents an asset, individual product or batch of products, it is limited in storing large numbers of data attributes consumer products require which can be represented by the token. For example, within the Qliktag Platform today, some food product manufacturers store over 500 attributes / data points for a single product SKU. This can include product certification data, allergen information, nutrients, ingredient percentages, ingredient provenance and more. Blockchain data is designed to store ledger type data attributes like tokens representing a product or owner, datetime stamps and similar data points. In a real world scenario a combination of both would be used in tandem to digitize both the product as well as changes in ownership and journey of the product as it moves.

Sample of Data in Blockchain



Sample of Data in Qliktag IoT Platform

▼ modules

▶ Nutritional Product Information Module

▶ Food And Beverage Preparation Information Module

▶ Product Allergen Information Module

▶ Product Usage And Safety Module

▶ Food And Beverage Ingredient Information Module

▶ Product Instructions Module

▶ Product Claims And Endorsements Module

▶ Product Origin Information Module

▶ Basic Product Information Module

▶ Product Quantity Information Module

▶ Nonfood Ingredient Information Module

▶ Product Sustainability Module

☐ recall


Recall Message

▶ recallMessage

▶ Included Product Variants

▶ Product Components

Information Accuracy As Of DateTime



2021-04-21 

11

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11


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Food And Beverage Ingredient

▼ Food And Beverage Ingredient #1

Ingredient Name *
Dextrose en 

Ingredient Definition
Dextrose is the name of a simple sugar that is made from corn and is chemically identical to glucose. It is as a en 

Ingredient Purpose
Sweetener or sugar substitute en 

Ingredient Animal Source
▶ Ingredient Animal Source #1
Add Ingredient Animal Source

Ingredient Growing Method
▶ Ingredient Growing Method #1
Add Ingredient Growing Method

Ingredient Sequence *

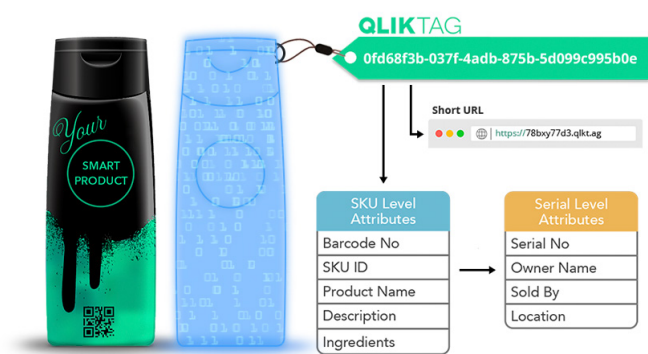
Ingredient Content Percentage

Ingredient Country Of Origin Code

As such the token typically points to an external location where detailed information (digital twin) is maintained or in the case of a digital asset, the asset itself can be located. Because the data that can be kept on a blockchain is limited it cannot be used as a substitute for a platform like Qliktag's Platform. Furthermore, by definition, the data in a blockchain is generally open to all participants. However, there is often information that needs to be maintained and only made available to specific participants.



Nevertheless, the blockchain has an important role to play in ensuring the digital twin is accurate.



Qliktag's IoT platform is different than most IoT platforms in that it is not meant for connecting devices and industrial equipment. It is specifically geared towards everyday products such as a Shampoo bottle or a box of cereal, that one does not think of as being connected to the Internet. However, via a trigger such as QR code, barcode, NFC, RFID, image recognition and a corresponding reader like a mobile phone, POS scanner, etc., these products can participate in the Internet of Things via "digital twin" and enable novel approaches to processes such as track and trace, labels, warranty registration, and product authentication. However, it is key that this information is accurate.

PRODUCT DIGITALIZATION

The Complete Picture

Let's take the lifecycle of a consumer product. It originates at a manufacturing facility that could be owned by the brand or a third party that is manufacturing on behalf of the brand. The product then typically gets passed to a logistics company for delivery to the brand's warehouse or perhaps directly to the retailer or e-commerce company and then finally to the consumer.

The "digital twin" maintains data and information about the Thing as it traverses its lifecycle from production to consumption. Along the way, the data and information about the Thing gets modified as required through the use of triggers and readers or simply updating the data. The brand is clearly relying on other parties to update the digital twin as it moves through its lifecycle. Therein lies the issue. How can one be certain the data within the "digital twin" is accurate, reflects the true state of the physical product?

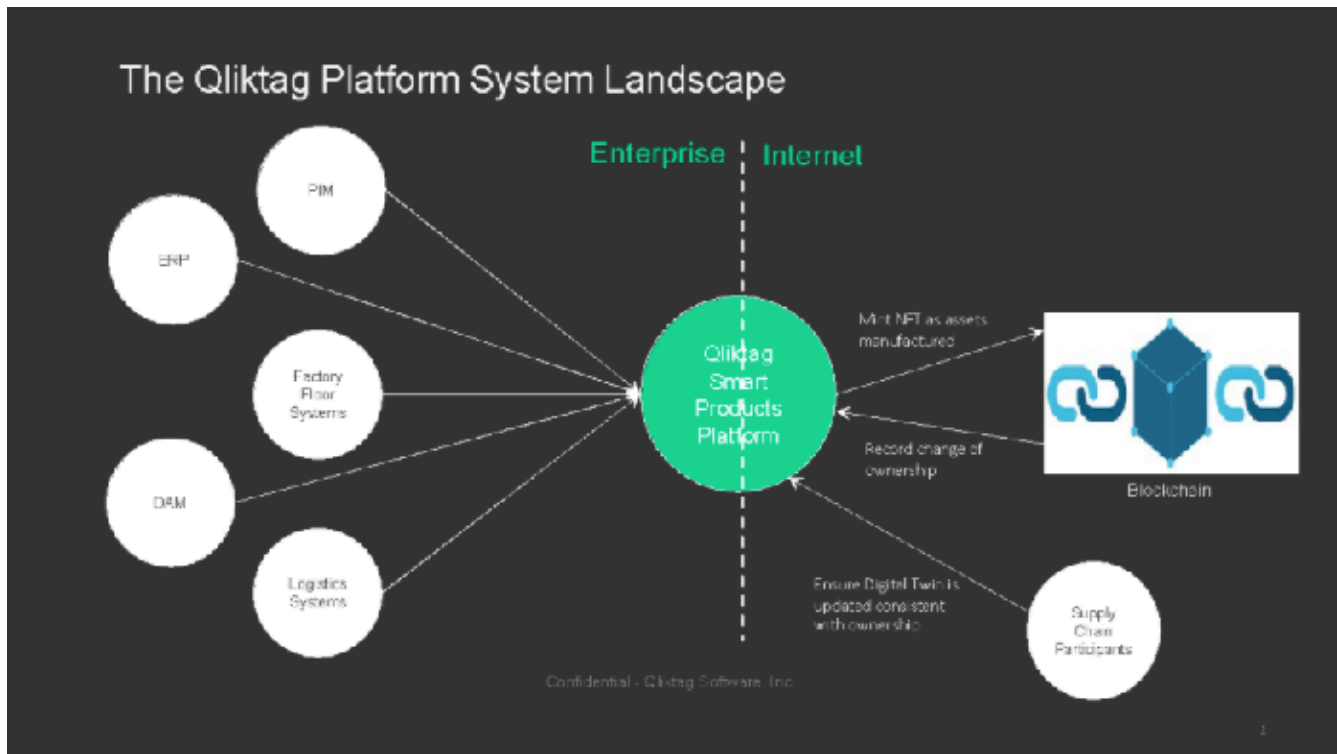
For simplicity sake, let's assume that the digital twin should only be manipulated by the party that has physical possession of it. If we look at the lifecycle, the physical possession goes from manufacturer to logistics company to brand to retailer and finally to consumer – there can be of course other parties in the chain but let's assume this is the chain for a given product.

Blockchain is an ideal solution for recording ownership and title transfer using non fungible tokens (NFTs) that point to the authoritative Digital Twin.

As the product gets transferred from one party to the next, that information can be recorded in a blockchain. This information can then be used by the Qliktag Platform to ensure that the data is only being updated through an account consistent with the ownership recorded on the blockchain.

“Blockchain is an ideal solution for recording ownership and title transfer using non fungible tokens (NFTs) that point to the authoritative Digital Twin.”

The Qliktag Platform System Landscape



“

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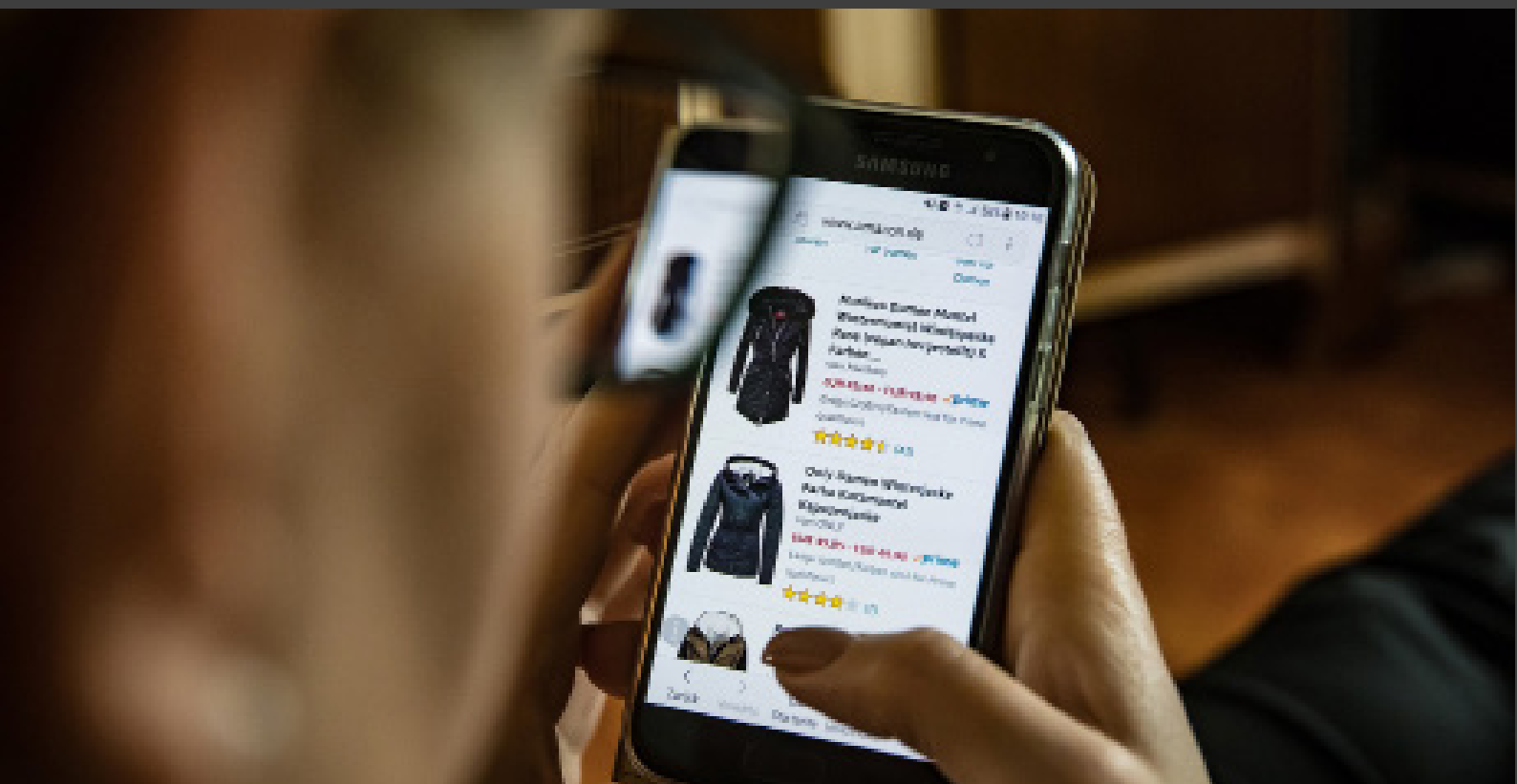
ABOUT

Qliktag Software

Qliktag Software Inc. is an innovator of software solutions working towards intuitive technology solution that bridge the gap between brands and buyers fostering stronger relationships and more personalized connections between the two.

Headquartered in Newport Beach, California, USA The Qliktag “Internet of Products” Platform is a one-of-a-kind solution for managing product data, serving that product data to other applications and systems in the retail ecosystem while also delivering digital product experiences and interactions for end consumers. With “Product Content Hub” & “Digital Interaction Engine” the Qliktag Platform is an enabler for driving new-age digital businesses for the consumer products industry.

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