

## OBADA the Open Blockchain for Asset Disposition Architecture

### An NFT Registry *for Physical Asset Data*

**A tool for ITADs to provide chain-of-custody.**

Built and run by stakeholders in the asset disposition sector.  
Based on an open data standard stewarded by the **OBADA Foundation**, a 501c(6) nonprofit.

**E-Scrap / E-Reuse Chicago**

November 2021

# Introductions



**Rohi Sukhia**

- Founder, OBADA Foundation
- Founder & CEO Tradeloop Corp.
- Repair.org BOD Member
- ISO TC 307 "Blockchain and Electronic Digital Ledger Technologies" Committee



**Charles Brennick**

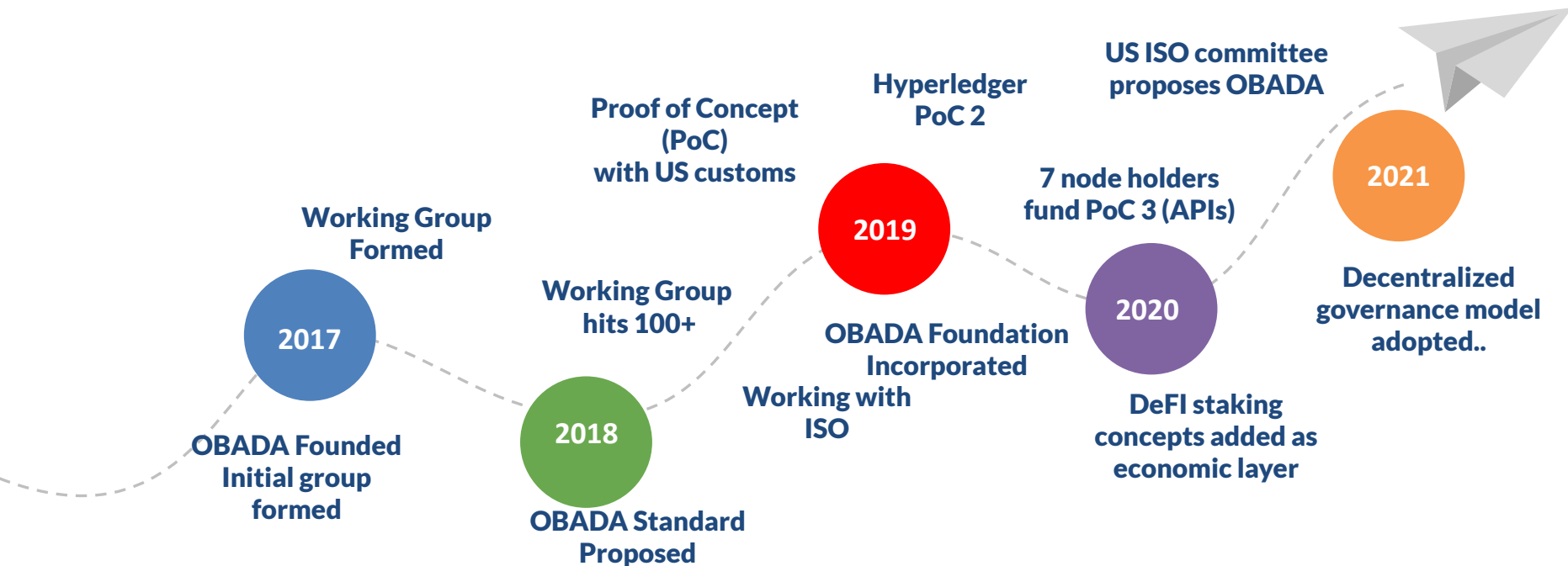
- Over 20 years of experience in ITAD, charitable computer reuse, and recycling.
- Director of Business Development at 3R Technology
- Founder, InterConnection.org
- Owner, TechReuse
- Board Member, OBADA Foundation



**Dr. Ron Lembke**

- Chair, Standards Committee, Reverse Logistics Assoc.
- Lead author, 12N QR code standard
- Board Member, OBADA Foundation
- Chair, Marketing Department, University of Nevada
- Assoc. Professor, Operations Management and Business Analytics

## OBADA's History



## OBADA Organizations

### OBADA Foundation

- A nonprofit 501(c)6
- Steward of the Standard
  - with ISO

### The Foundation helps the DAO deal with “Real World” issues.

- Banks, lawyers, industry, etc.
- Industry outreach

### OBADA DAO (decentralized autonomous organization)

- A Wyoming DAO LLC. One of the first legal DAOs in the world.
- It's basically an *agreement* to collaboratively run the decentralized software.
  - the *implementation* of the standard
  - Not a company in the traditional sense.

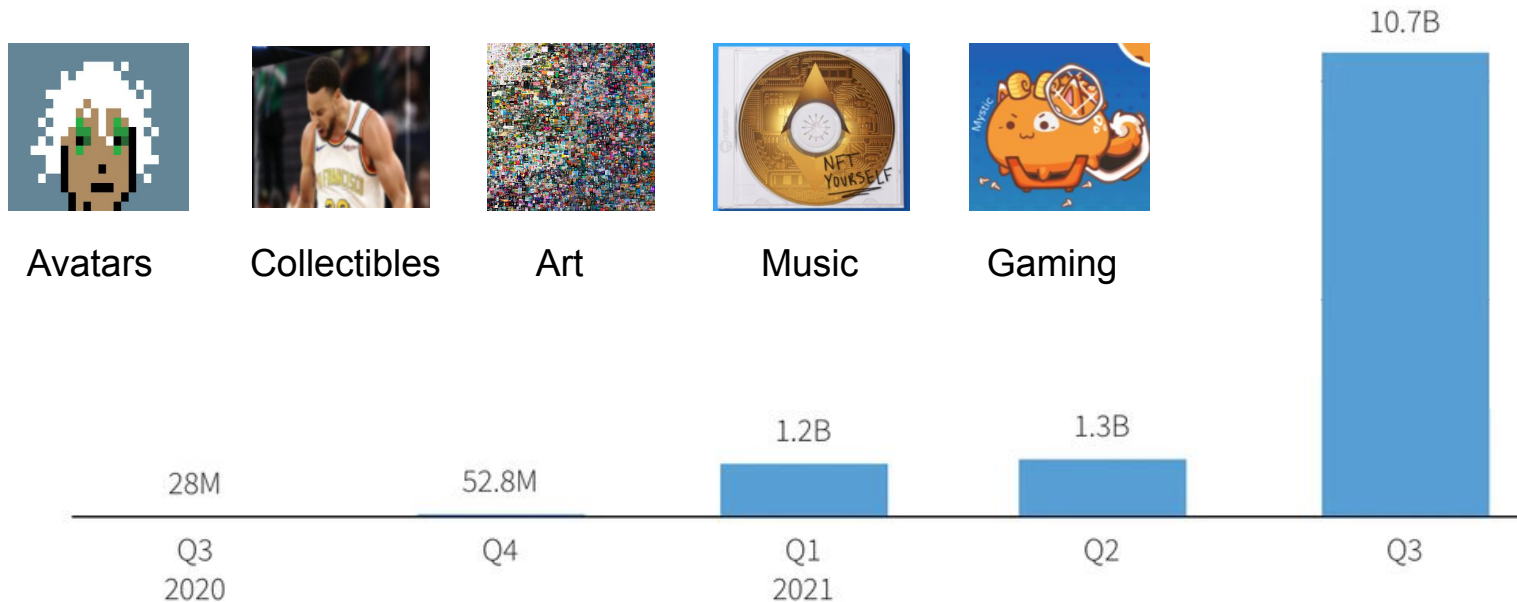
### 100 DAO Members total

- All in the ITAD sector.
- Operate the nodes.
- Votes on major changes.
- Shares the revenue

## Physical NFTs The OBADA Standard

Rohi Sukhia

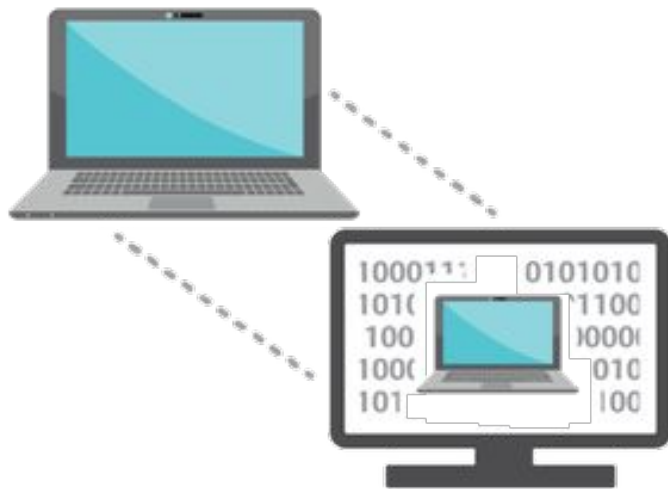
## NFT sales surge to \$10.7 billion in Q3 - DappRadar



Note: DappRadar is a company which tracks on-chain NFT sales across multiple blockchains including Ethereum, Flow, Wax, and BSC.

Source: DappRadar

# Physical NFTs (pNFTs): “Digital Twins”



## All Documents

- Purchase Receipt (Ownership)
- Diagnostic Reports
- Warranty Information
- Service Records
- etc..

## IOT Endpoint

- Talk to the device

## The NFT is a "Carfax" for every device.

This "Carfax" is a NFT.

- a non-fungible token

A "**digital twin**" of the physical asset, permanently "tied" to the physical device.


It includes a **digital certificate of ownership**.

It's like a digital logbook of the devices' history.

It creates an universal address for connected **IOT devices**.

**OBIT NFT** *Digital Twin*

**USN: 1V3Z-JwPg**



OBIT ID: 0f89...c43e  
Physical Asset: Dell model 2714h, SN# CN0NV2C46418045H1CBS  
Owner: 9De6....A69j  
Asset Status: **Functional, Authentic**  
Disposition Events: [view](#)

**Data Root Hash:** d9b97a2fcace15764057d06f4d47ca754760235e3a5f6684bcff961bb07e80f6

**Service History & Proofs**

Authenticity: **Genuine** (ZKP) - [proof](#) from Dell  
Warranty: **Active** - [proof](#) from Dell  
Data Status: **Sanitized** (ZKP) - [proof](#) from TechSpec  
Functionality: **Functional** (ZKP) - USODY [Diagnostic Report](#)  
Operating System: **Valid COA** (ZKP) - [proof](#) from Microsoft

**Pre-paid CoC Orders**

- \$3 for Drive Wipe
- \$2 for Recycling Report

Send reports to: [happyguy72@hotmail.com](mailto:happyguy72@hotmail.com)

**No central authority.**  
**You create the NFT. You own the NFT.**



## The OBADA Standard

### Steward of the Standard

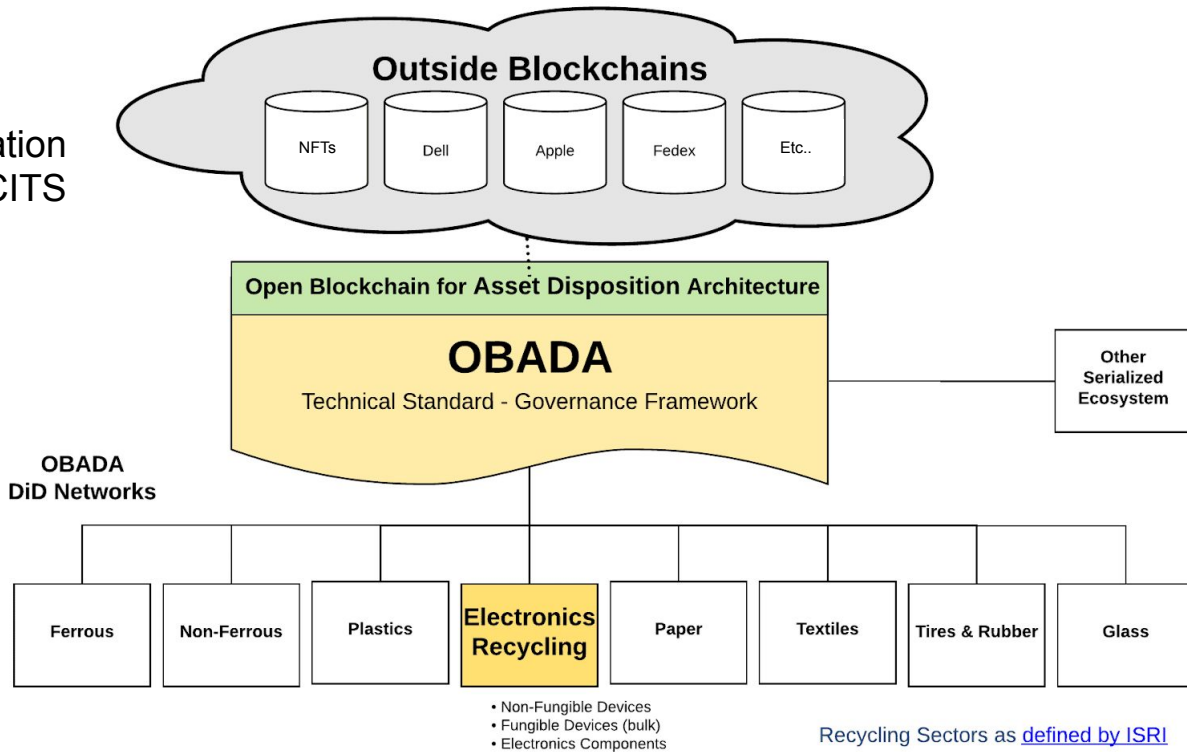
- The 501(c)6 OBADA Foundation
- Standards development: INCITS
- Standards body: ISO
- 12 BOD members

### The Standard Defines

A open standard for representing a physical asset as an NFT.

### Broader than ITAD

- An open standard for **any** physical asset
- The initial implementation is for IT asset disposition



## OBADA Standard: 3 main sections

### 1) The Physical Layer

Defines the machine-interface.



### 2) The Data Model

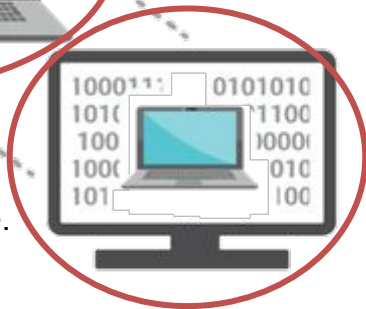
Formulas define the NFT address and data structure.

Manufacturer  
Part Number  
Serial Number



**USN** Universal Serial Number

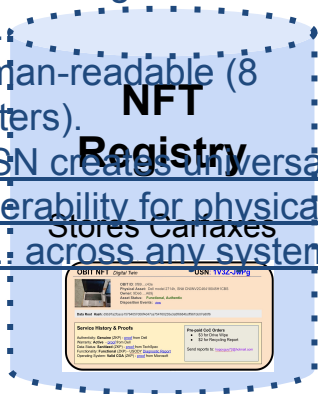
e.g. **2zEz-xLJR**



### 3) The Communication Protocol

The USN is a universal unique identification, based on serial numbers. Defines how to store, access, and transfer the pNFTs.

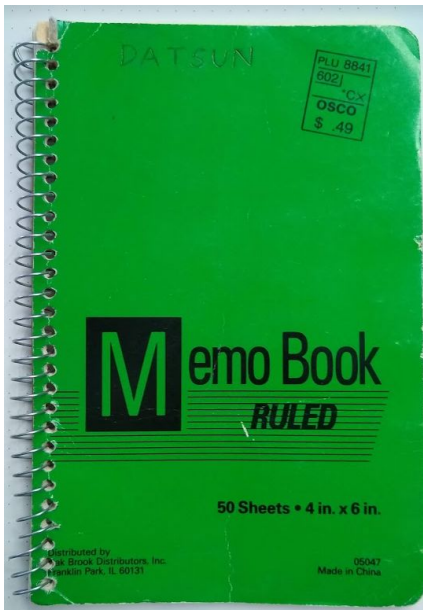
- It can be self-generated for any device.
- It's human-readable (8 characters).
- The USN creates universal interoperability for physical assets across any system.



# A Blockchain for ITAD - Explainer

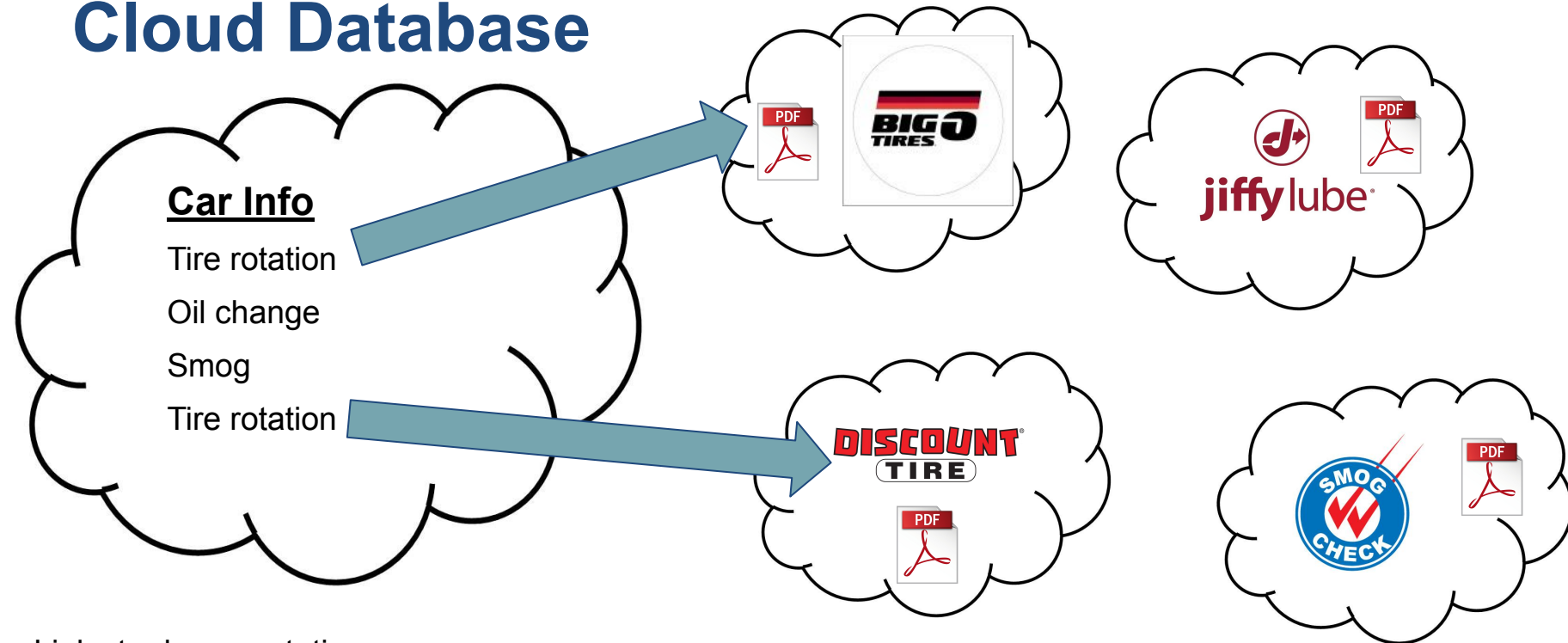
**Dr. Ron Lembke**

# Paper-based Recordkeeping



- Difficult to update (therefore out of date)
- Only trusted by creator
- List of transactions
- Documentation offline in manila folder

## Cloud Database

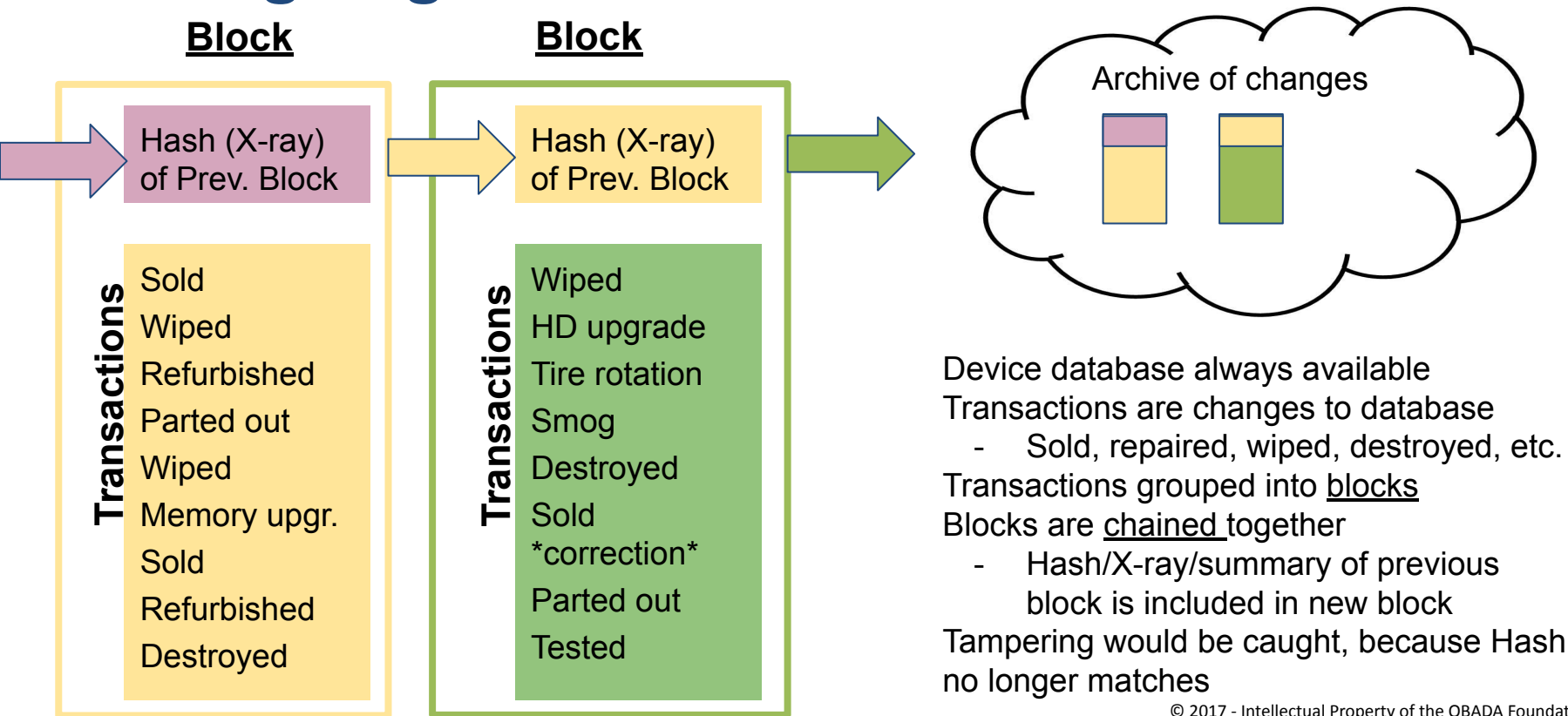


Links to documentation

Data online, up to date, verified, trusted

User chooses what information to share with whom

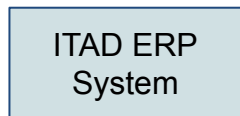
# Changelog Archive = Blockchain



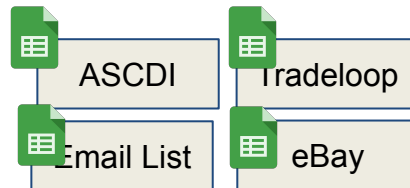
## The Platform

## How the ITAD sector manages asset info today

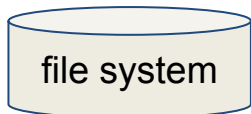
Inventory **copies** are sent around **manually**.



- Something sold? Update each site.
- None are “in synch” with the current stock.
- These sites are in “control” of your data.



Device documentation is sent **manually**.



- Functionality Reports
- Cert of Data Destruction
- Other device info



Collate &  
Organize



Payment processing is done **manually**.



- PO, Invoices, etc..
- “the check is in the mail”
- etc..



Buyer



## These "Carfax" NFTs are stored in an open Registry.

Like a cloud database

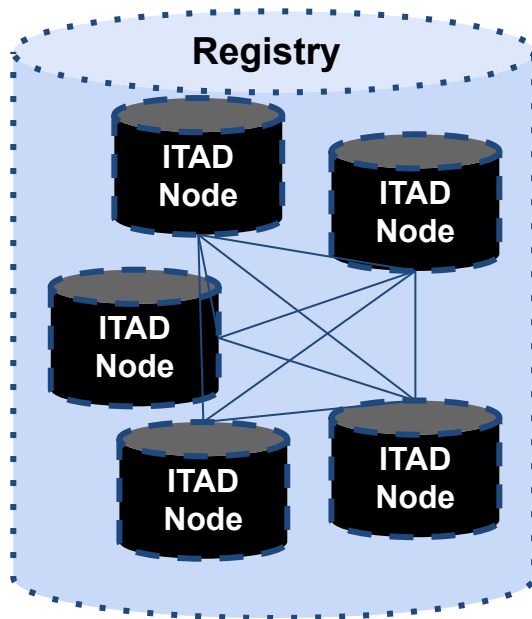


It's really just a collection of synchronized database "**nodes**".

ITADs run the nodes. ITADs vote on changes. ITADs set the fees. ITADs share the platform profits.

These ITAD **Node Holders** are in effect the "owners" of this **decentralized business**.

But it's decentralized.



## How the ITAD sector will manage assets, using NFTs

### Inventory **syncs**

and **you control**  
who sees it.

ITAD ERP  
System

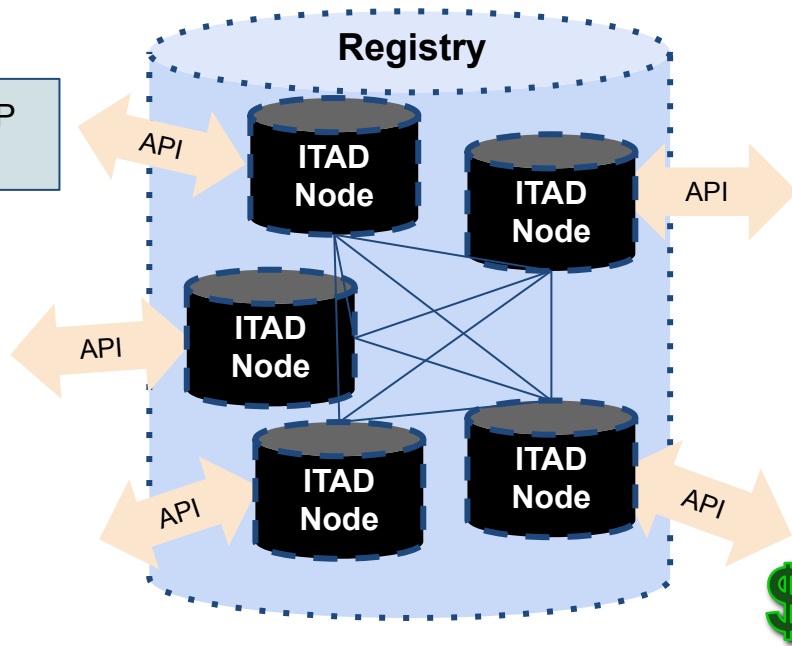
### All documents **sync.**

Docs are **provable**.  
All changes are  
**transparent**.

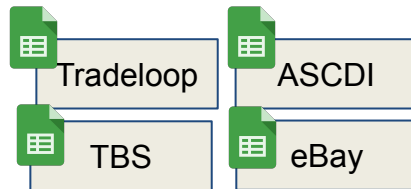


### Services are **provable**

Drive wipes, functionality  
reports, and proof of  
recycling are all recorded to  
the blockchain.



All parties see the **same**  
**syncd devices**.



### Payments are **digital**

The go directly from user  
to user. **No middleman.**  
**No bank.**

# Platform Economics

**"Gas" (the platform fee)**

**"Rewards" (the network incentive)**

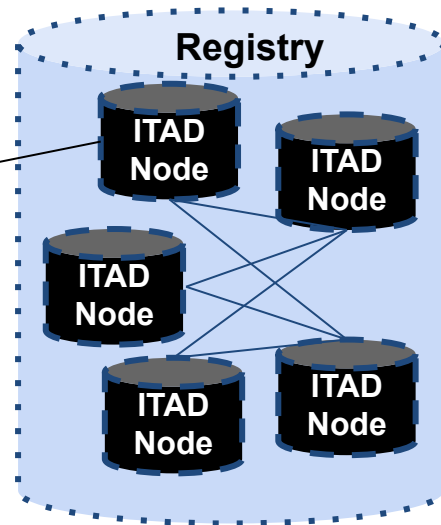
**Dr. Ron Lembke**

# The system is paid for with “Gas”

**Users buy "Utility Tokens" from their favorite Nodeholder.**



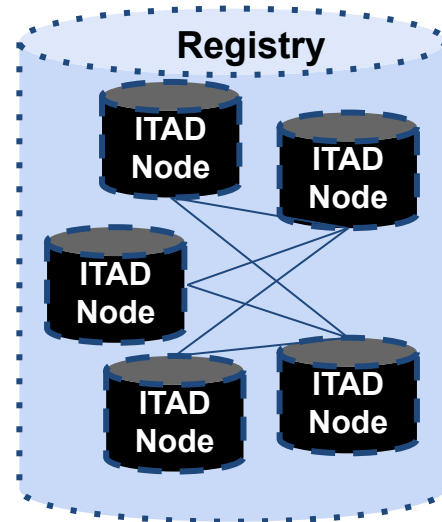
Tokens are “credits”, akin to casino chips or video arcade tokens.



# A Gas payment is required for Registry updates

**A small payment via the Utility Token  
is required to update the registry.**

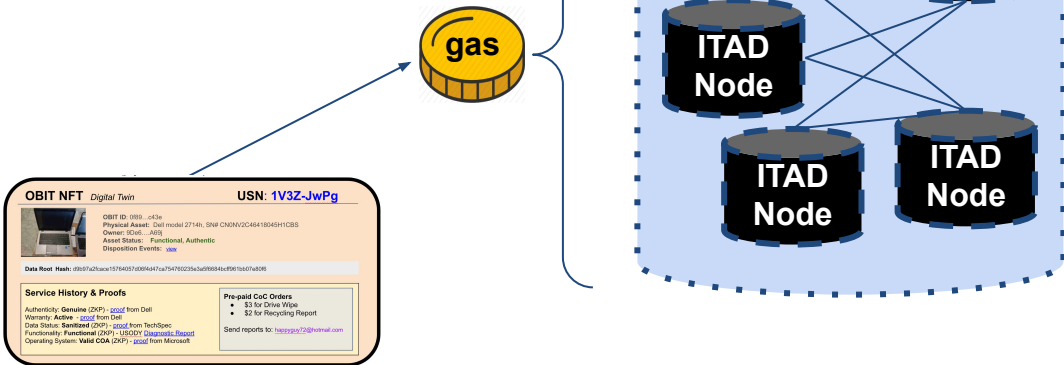
Reading the registry is free.



# Collected Gas fees pay the Nodeholders

**The Utility Tokens collected as gas are distributed back to the Nodeholders**  
...to compensate them for their computer power.

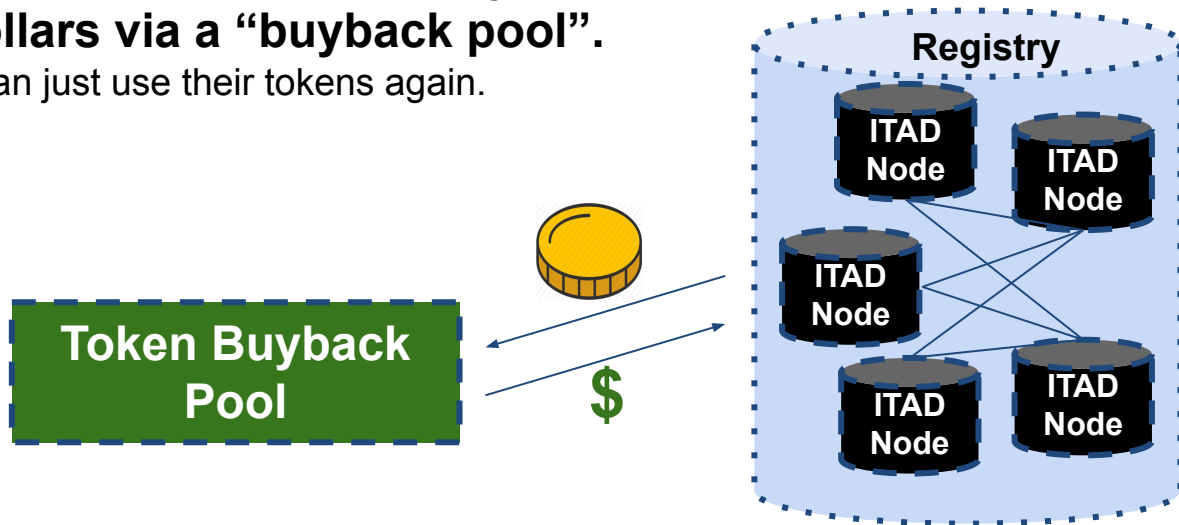
*There is no middleman.*



# Utility Tokens can be swapped back to dollars.

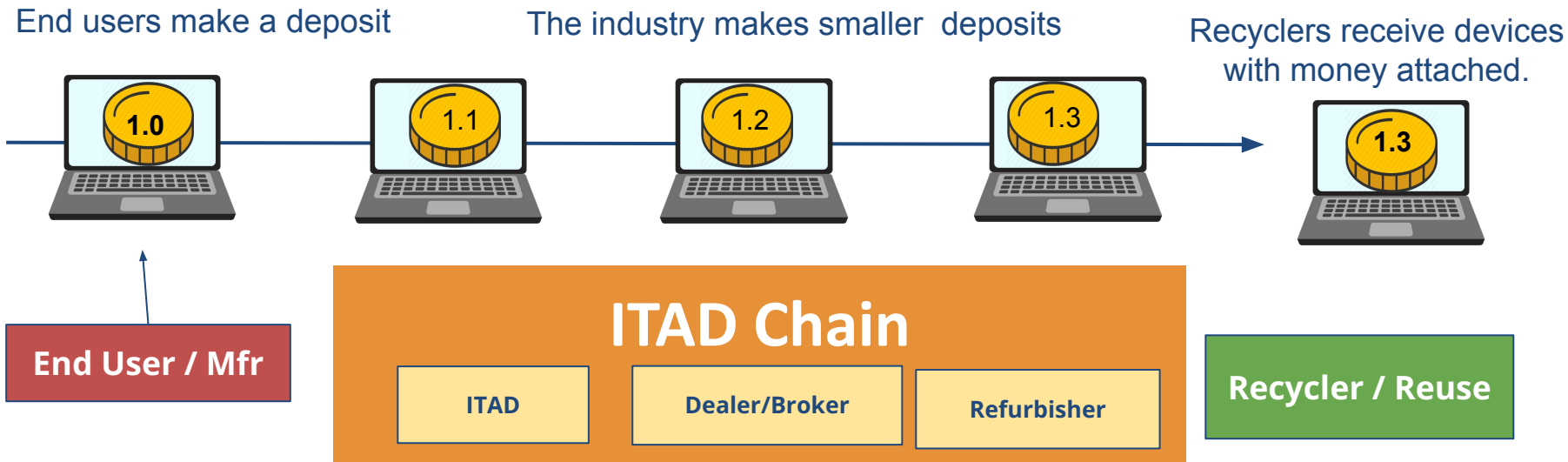
**Platform users can convert their Utility Tokens back into dollars via a “buyback pool”.**

Or they can just use their tokens again.



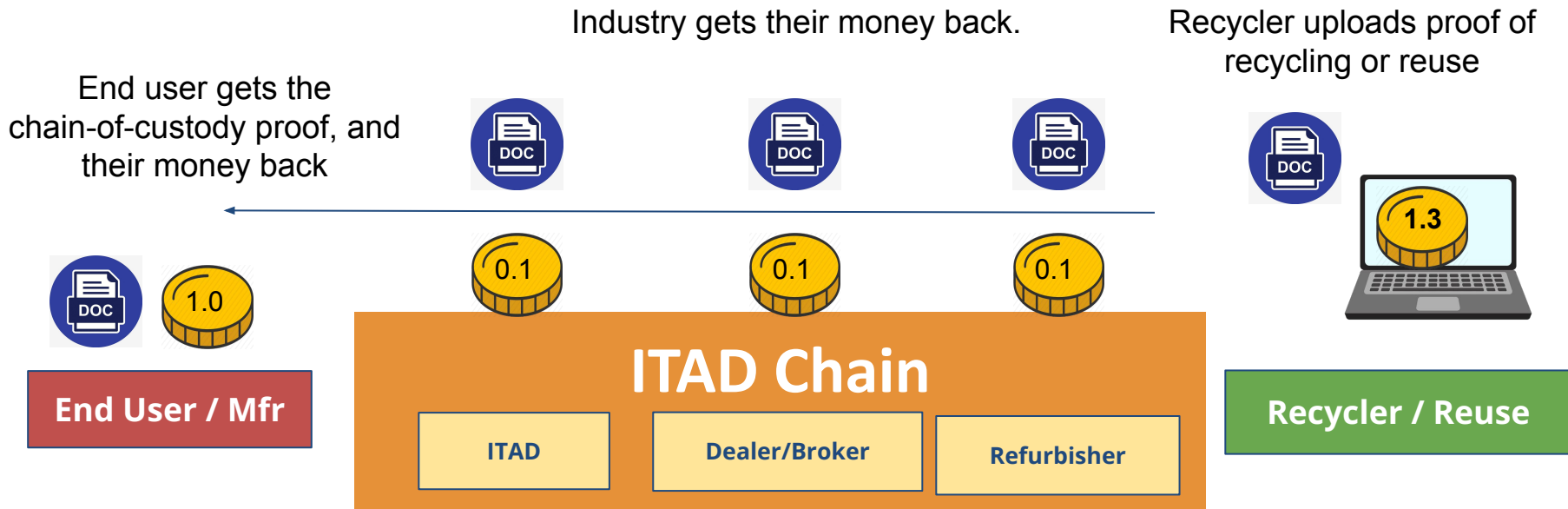
## A "Recycling Reward" for ordering chain-of-custody reports

"Staking" an NFT with a Utility Token enables chain-of-custody reporting.  
When the device is recycled, the Staked Utility Token is returned, and a reward is issued.





## "Proof of Recycling" is generated and the Stakes are returned



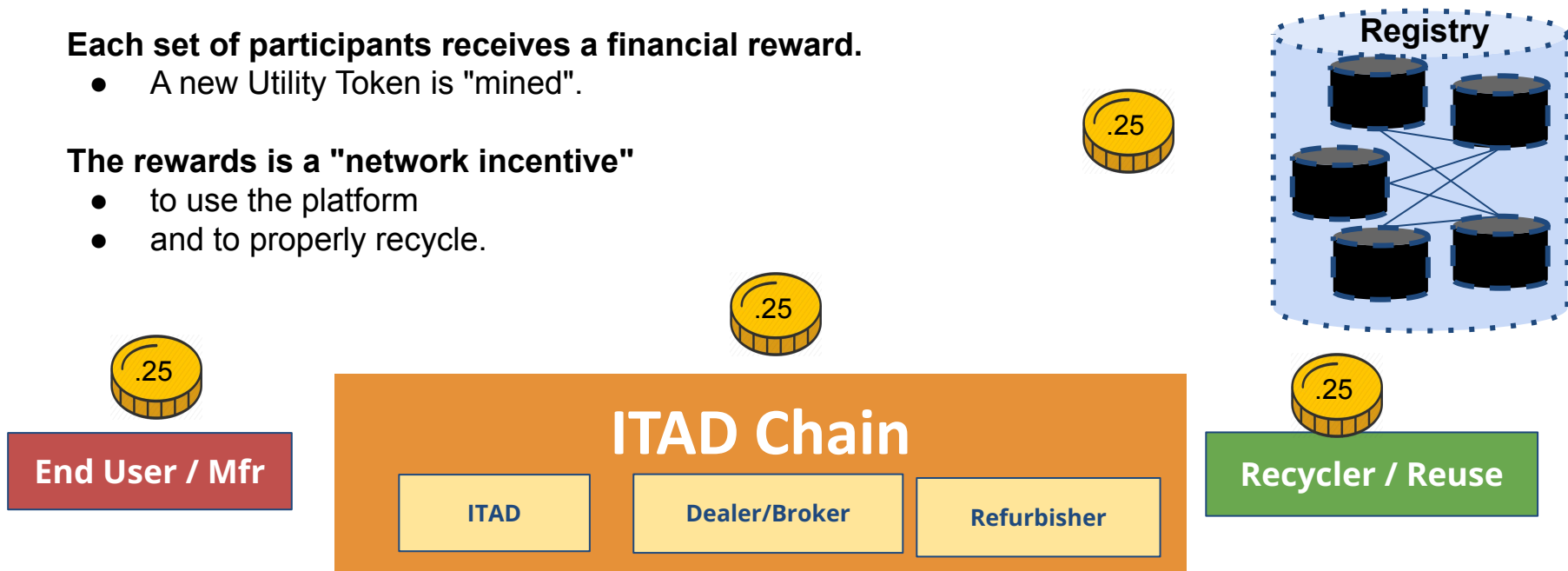
## A "Recycling Reward" is issued upon Proof of Recycling / Reuse.

Each set of participants receives a financial reward.

- A new Utility Token is "mined".

The rewards is a "network incentive"

- to use the platform
- and to properly recycle.



## How is the Reward paid for?

### Some of the Utility Tokens will be "lost"

- Sold off-chain, stuck in a warehouse, or just lost.

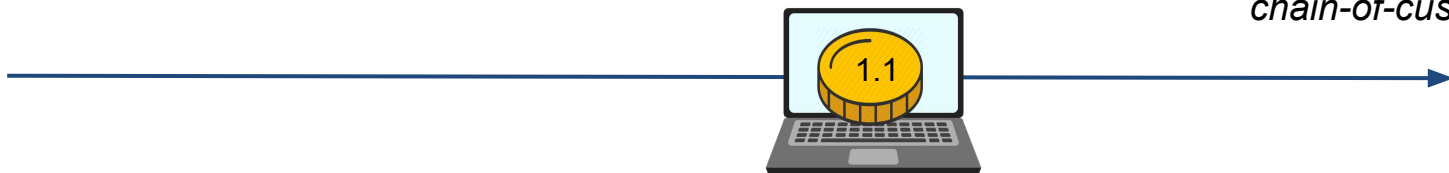
### The Rewards System replaces lost Utility Tokens

- to maintain a constant supply



### The Reward is a Network Incentive

- To use the platform.
- To properly recycle / reuse
- *It pays end users, ITADs, and recyclers to maintain chain-of-custody*



End User / Mfr

## ITAD Chain

ITAD

Dealer/Broker

Refurbisher

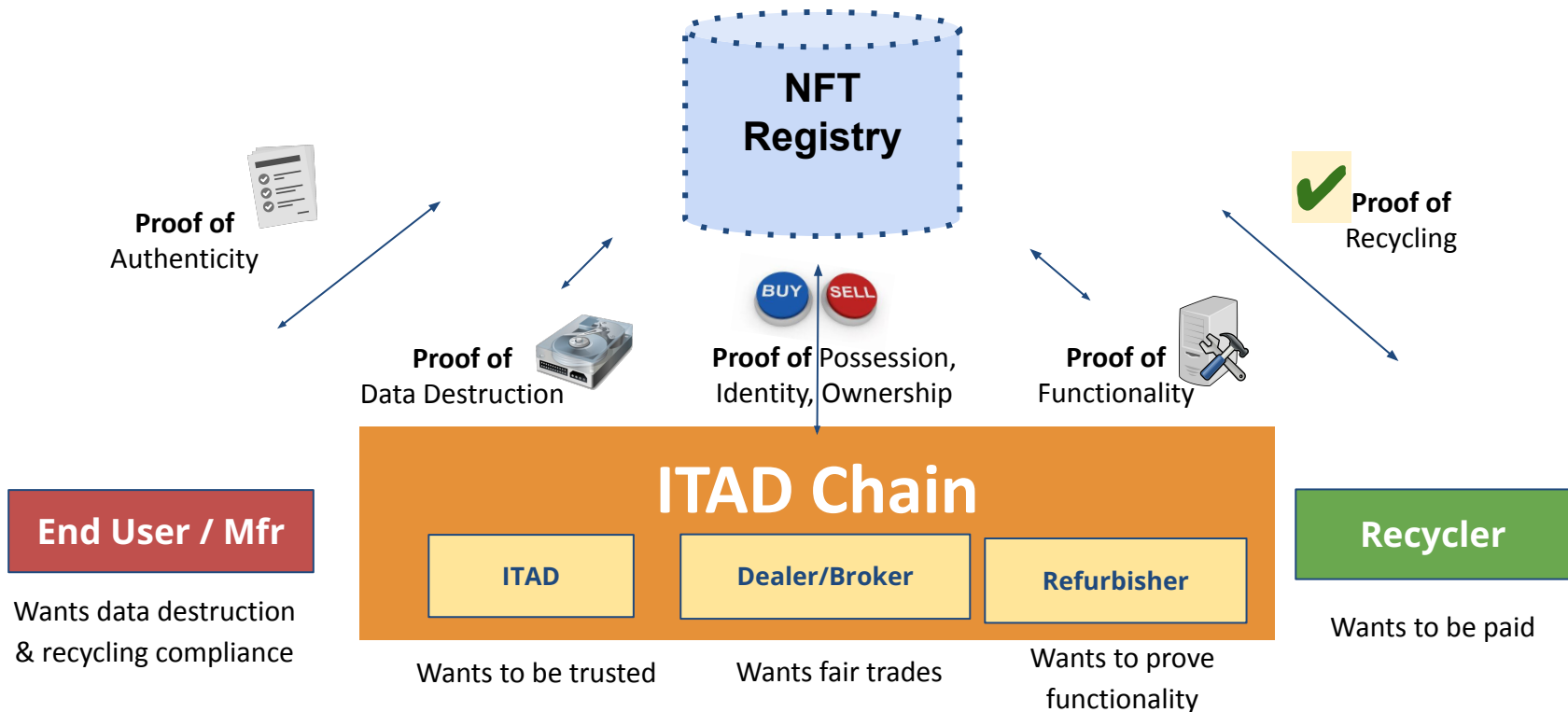
Recycler / Reuse

## Use Case

### Data Wiping *with Blockchain Proof*

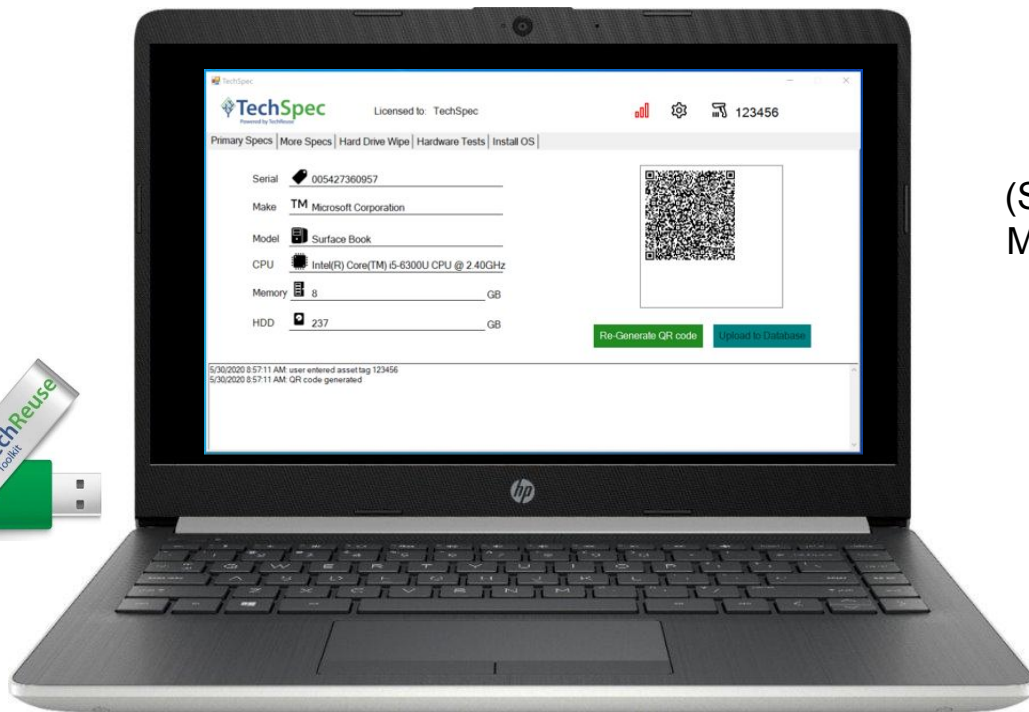
Charles Brennick

## The Registry enables proof of "chain-of-custody" events.



## How ITADs can make NFTS

Refurbisher  
uses software  
to capture  
specs. Can  
also be done  
by using an  
online form.




(Serial Number hash +  
Make + Model) hash =  
NFT

## Device Passport

Status	18	Snapshots
<b>Date Created:</b> 01/05/2021 03:42:23	<b>Condition Description</b> Grade A	04/13/2021 13:00:41
<b>Date Processed:</b> 01/26/2021 11:44:34	<b>Dell Inc.</b> Make	
<b>Ownership Change Date</b> 2/05/2021	<b>Latitude E5450</b> Model	
<b>Processed by:</b> TechReuse	<b>9CKQN32</b> Serial	
<b>Lot ID:</b> 9yvdkG	<b>Intel(R) Core(TM) i5-5300U CPU @ 2.30GHz</b> Processor	
<b>Ower ID:</b> jQBp34C	<b>8 GB</b> Memory	
<b>Last GPS Location</b> 47.6902919, -122.33355369999998	<b>466 GB</b> Storage	
	<b>Integrated</b> Video Card	
	<b>Location</b>	
	<b>OS Install</b>	
	<b>SKU</b> 6640	
	<b>Type</b> Notebook / Laptop	
	<b>Storage Type</b> HDD (Hard Disk Drive)	
	<b>Screen Size</b> 14	
	<b>Operating System and Edition</b> Windows 10	

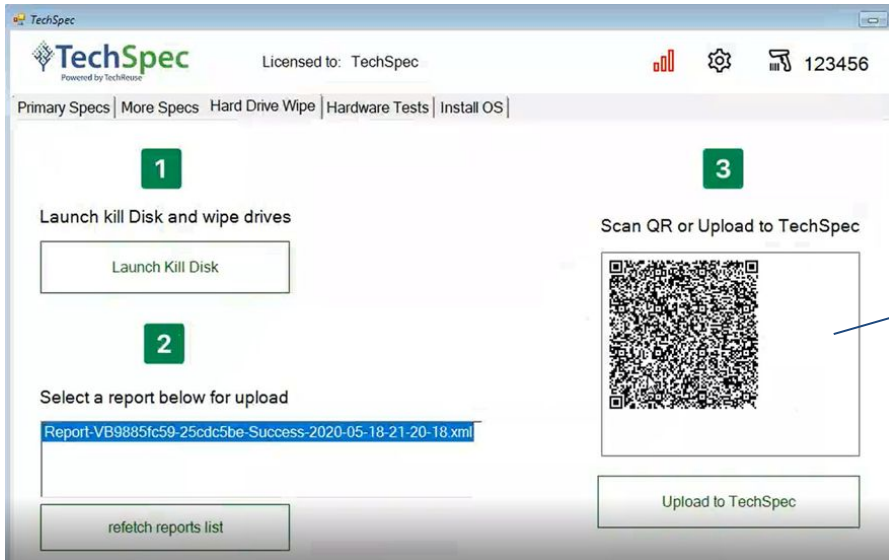
**Verify on Blockchain**  
**NFT:**  
35987A0F9AE77012A5146A982  
966661B75CDEAA4161D1D62B  
1E18D39438E7396  
**Wipe Report Event Hash**  
8DFE551D193396A2AA71D95F2  
2F105B7E346847D919A9255163  
F370F5690CC85  
**Hardware Test Event Hash**  
2E69FE54A73D42E86376E0AF0  
2F8C873A3B1D3551F578ED0D8  
4A5323F1E18490

**Photos**  


Public webpage  
that allows  
events to be  
viewable  
(the Carfax)

Zero knowledge  
proofs

## Wipe Report Event



### Verify on Blockchain (Proof)

#### NFT:

35987A0F9AE77012A5146A982966661B75CDEAA  
4161D1D62B1E18D39438E7396

#### Wipe Report Event Hash

8DFE551D193396A2AA71D95F22F105B7E346847  
D919A9255163F370F5690CC85

#### Hardware Test Event Hash

2E69FE54A73D42E86376E0AF02F8C873A3B1D35  
51F578ED0D84A5323F1E18490



## Ways to Retrieve NFTs

Once NFT is created it can be retrieved by running software on the computer again, scanning QR code, RFID and more



**Sticker**



**RFID**



**Printed on  
paper**



**Software to  
recreate**

## Value for ITADs

Proof of hard drive wipe

Proof of recycled

Change of ownership from client to ITAD

Record of sale

Proof of ownership

Software providers will be able to connect to it

## The OBADA DAO

### Decentralized Autonomous Organization

Rohi Sukhia

## OBADA DAO Members "own" and run this "distributed business"

### OBADA DAO Key Facts

- A **Wyoming DAO LLC**.
- Target: **100 Members** from the asset disposition sector.
- No BOD. No controlling body. **All members are equal.**

### DAO Member Rights

- Governance rights: each member gets one vote
- Nodeholder Rights to sell production tokens and other services.
- Token Rights: DAO Members receive an allocation of the Utility Tokens.

### DAO Member Requirements

- Must run a node. Node responsibility can be transferred.
- OBADA can set up and maintaining the node for you.

# Current DAO Members

Currently at 22 of 100 total. Starting Round B.

## DAO Members - Seed Round

Recipient	c/o	# Tokens	Status
1 Network Commerce International	Joseph Marion	2,285,714	closed
2 Robin Ingenthron	GPR	2,285,714	closed
3 Rhapsody Ventures	Vincent Liu	2,285,714	closed
4 Tech Reuse	Charles Brennick	2,285,714	closed
5 University of Nevada	Ron Lembke	2,285,714	closed
6 USODY	David Franquesa	2,285,714	closed
7 Tradeloop Corporation	Rohi Sukhia	2,285,714	closed
		16,000,000	closed

## DAO Members - Round A1

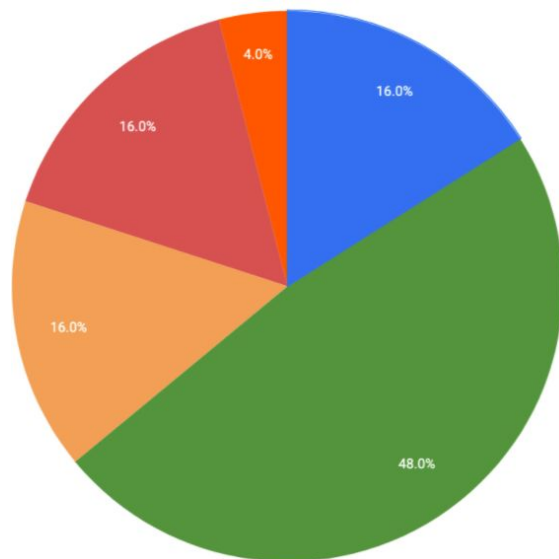
Recipient	c/o	# Tokens	Status
8 World Data Products	Neil Vill	1,500,000	closed
9 The Broker Site	Mario Beimens	1,500,000	closed
		3,000,000	closed

## DAO Members - Round A2

Recipient	c/o	# Tokens	Status
10 ASCDI	Joe Marion	1,000,000	closed
11 CELX Advisory, LLC	Guennael Delorme	1,000,000	waitlist 12/1/21
12 Dynamic Lifecycle Innovations	Bobbie Suhr	1,000,000	waitlist 12/1/21
13 E-Reuse Services Inc.	Sarah Kim	1,000,000	waitlist 12/1/21
14 JT Environmental Consulting, Inc.	Jason Teliszczak	1,000,000	waitlist 12/1/21
15 KATLAS Technology Ltd	Edward Cole	1,000,000	waitlist 12/1/21
16 Non-Profit Computing, Inc.	John L. German	1,000,000	waitlist 12/1/21
17 SEKANGI International Ventures Limited	Seth Munyambu	1,000,000	waitlist 12/1/21
18 The Repair Association	Gay Gordon-Byrne	1,000,000	waitlist 12/1/21
19 Towards Zero Waste	Jakob Lennartsson	1,000,000	waitlist 12/1/21
20 Unduit	Omar Javed	1,000,000	waitlist 12/1/21
21 VIG Computers	Vince Bettencourt	1,000,000	waitlist 12/1/21
22 XS International, Inc.	Todd A Bone	1,000,000	waitlist 12/1/21
		13,000,000	

# Utility Token Allocation

100,000,000 total



● Founding Team   
 ● DAO Members   
 ● ITAD Allocation  
● End-User Allocation   
 ● Development Incentives

## Token Cost and Discount Schedule

Round	% of Total	Max Recipients	Cost	Tokens / Recipient	Token Price	Funds Raised	Fully Diluted Market Cap	Status
Founding Team	16%	~10						Closed
DAO Members - Seed Round	16%	7	\$5,000	2,285,714	\$0.0022	\$35,000	\$218,750	Closed
DAO Members - Round A1	3%	2	\$5,000	1,500,000	\$0.0033	\$10,000	\$333,333	Closed
DAO Members - Round A2	13%	13	\$5,000	1,000,000	\$0.0050	\$65,000	\$500,000	Closes Dec 1, 2021
DAO Members - Round B	8%	28	\$5,000	285,714	\$0.0175	\$140,000	\$1,750,000	Q1 2022
DAO Members - Round C	8%	50	\$5,000	160,000	\$0.0313	\$250,000	\$3,125,000	Q2 2022
ITAD Community	16%	1000			\$0.50	\$8,000,000	\$50,000,000	Time-based \$0.25-\$0.75 TBD
End-User Community	16%				\$1.00	\$16,000,000	\$100,000,000	
Development Incentives	4%							
	100%							

We are here, Round B.

## Use of Funds

- Early rounds of \$500,000 for operations and platform development.
- Production rounds of \$24,000,000 primarily for a "token buyback pool".

## How to Get Involved

### DAO Membership Interest

- The Round B waitlist is starting for the next 28 DAO Members.
- Contact us and we'll send you the OBADA DAO Operating Agreement
- **Email Mark Schaffer at [bizops@obada.io](mailto:bizops@obada.io)**

### To learn more or get involved.

- The monthly Working Group meets the 1st Thursday of every month (since 2018)
  - **12pm ET on <https://meet.jit.si/obada>**
- Or visit our website at [www.obada.io](http://www.obada.io)