



Farm to Blockchain to Table

Peter St.Geme Supply Chain Research
Wynham Guillemot Product Manager
Samual Prutton Frontend Engineer
Norman Chen Blockchain Engineer

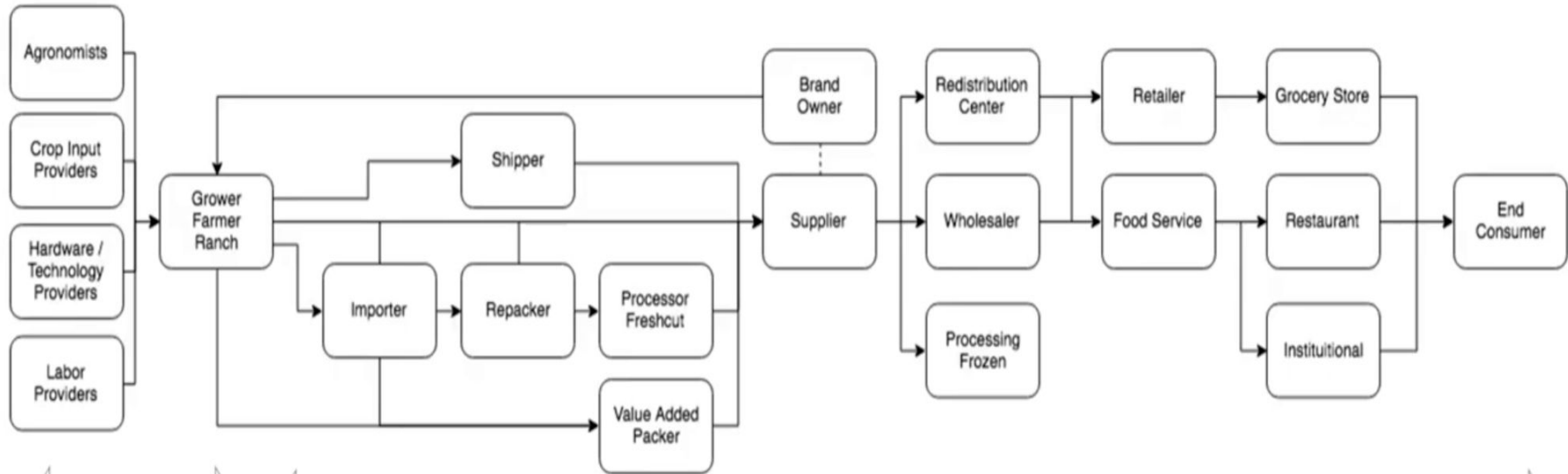
Why we're here.



48 million foodborne illnesses each year costing tens of billions of dollars

30% of the global food produce is lost along the food supply chain every year (**nearly \$990 billion globally!**)

Agriculture Produce Supply Chain



Innovating Supply Chain Management



Confronting Supply Chain Challenges in Agriculture

- Countless transactions between stakeholders and businesses
- Increased globalization and growing competition in markets increases complexity
- Lack of traceability, slow financial transactions, poor quality of food

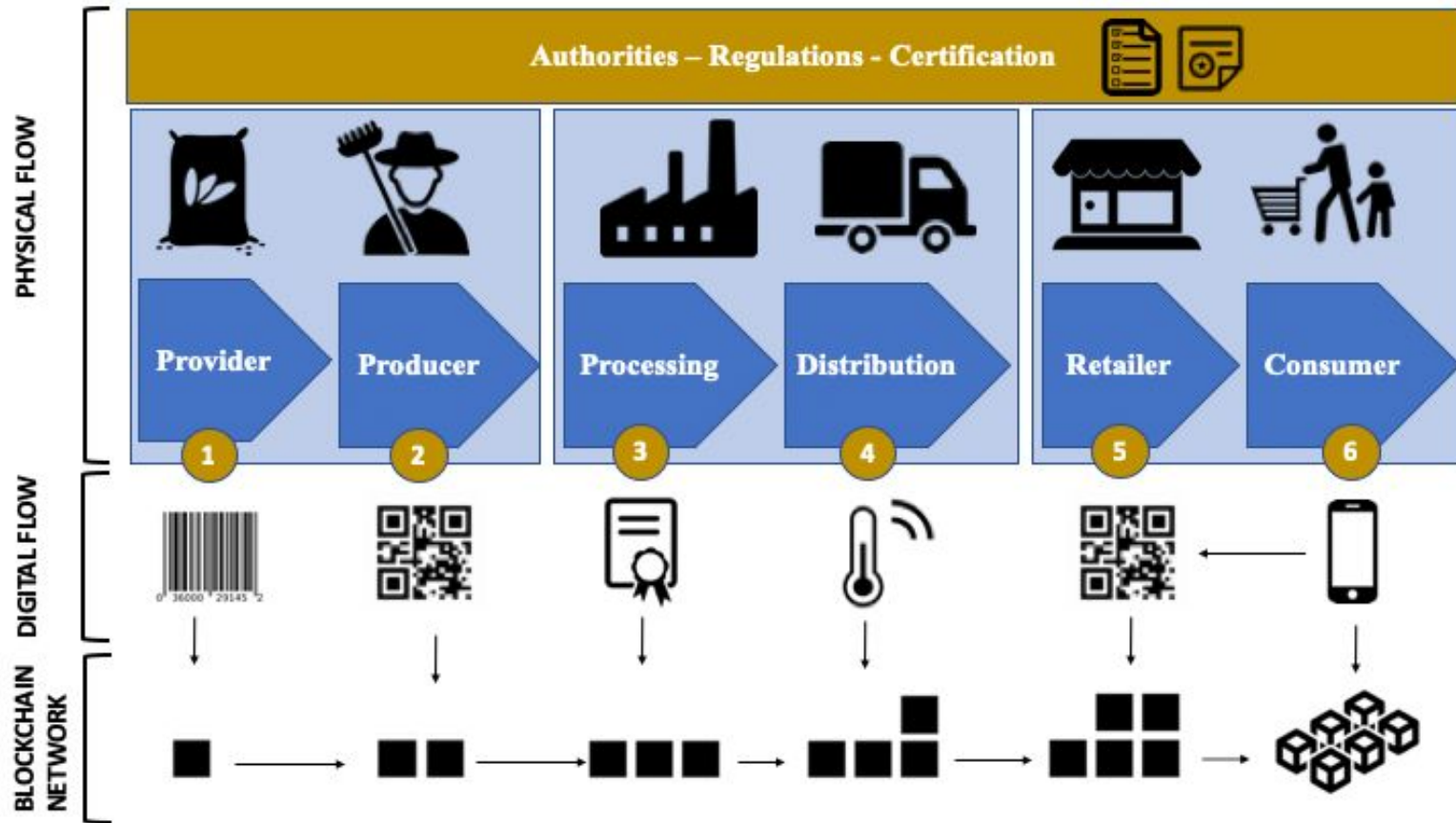


Smart Contracts and Blockchain Offer a New Path



Farm to Blockchain to Table Solution

- **Smart Contracts** deployed on **Ethereum Blockchain Network** increase traceability
- **Tokenized system** that tracks supply chain orders from inception to end-user consumer
- **Automated verification** and **execution** of transactions
- **Decentralized, immutable** record system enforces trust and efficiency
 - Ledgers will match up and can be verified by the blockchain



Marketplace

Platform:

- Heroku

Languages:

- Frontend:
 - HTML
 - CSS
 - Javascript
- Backend:
 - Python
 - Postgresql

Libraries:

- asgiref
- certifi
- chardet
- dj-database-url
- Django
- django-heroku
- gunicorn
- idna
- Pillow
- postgres
- psycopg2-binary
- psycopg2-pool
- pytz
- requests
- sqlparse
- stripe
- typing-extensions
- urllib3
- whitenoise
- qrcode

Blockchain

Front End:

- Streamlit

Back End:

- Solidity

Blockchain:

- Ethereum

Wallet:

- Metamask

Environment:

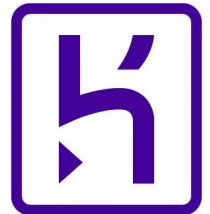
- Ganache

Wallet:

- Metamask



django



Project Approach

Purchasing Process in Marketplace (Python + Django)

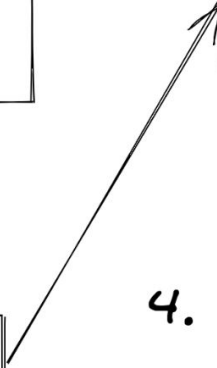
1. The customer orders a product (lets say 7 bananas) from a vendor on:
harvestblocks.com

2. The vendor receives the customer information and generates a unique QR code and attaches it to the physical order

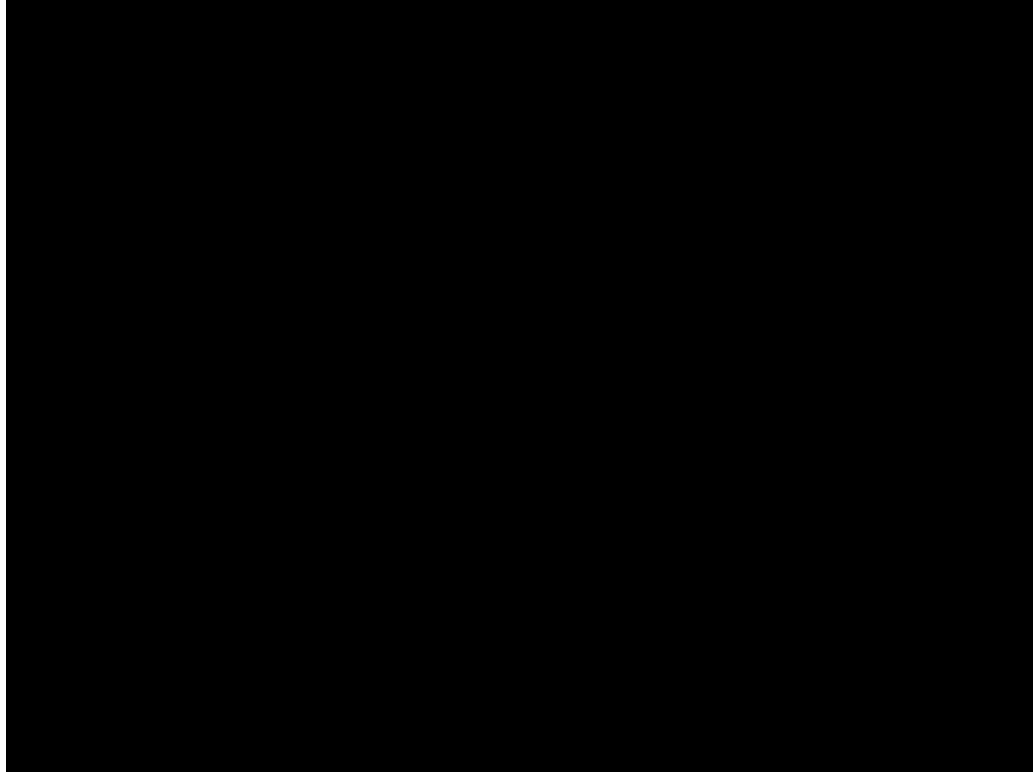
Supply Chain Tracking Process (Solidity + Streamlit)

3. The vendor enters the customer information and an image of the QR code into their blockchain system, creating a unique NFT for that customer's order.

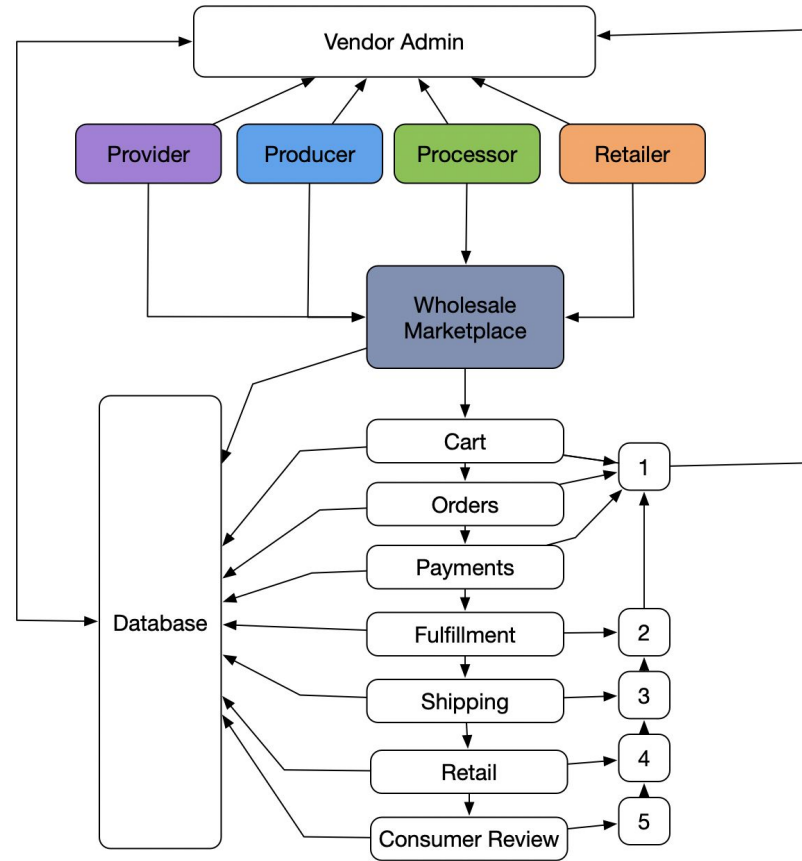
4. The physical product is sent to the customer with their QR code attached. Simultaneously, the customer is sent their NFT on the blockchain, with that same QR code attached. The customer is able to verify the legitimacy and quality of their order by matching up these QR codes.



Harvestblocks.com Demo



Future State



Questions?