Potential Disruptions

Blockchain Use Cases

EDUCATION

- Increase in fraudulent certificates
- Blockchain can be used to check the validity of certificates
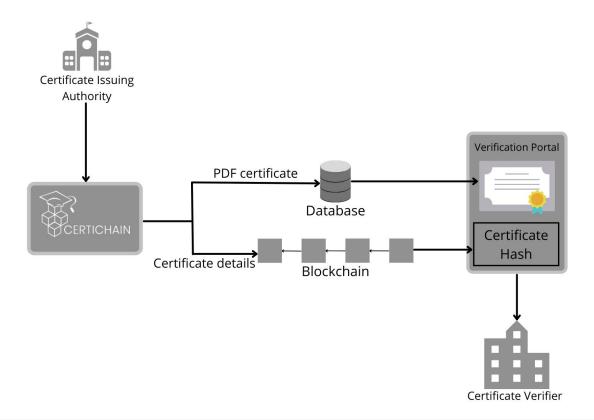- KBA - Certichain

University can issue a certificate with a unique code and store the necessary details in blockchain

Anyone can verify the credibility either by scanning QR code or by a verification portal
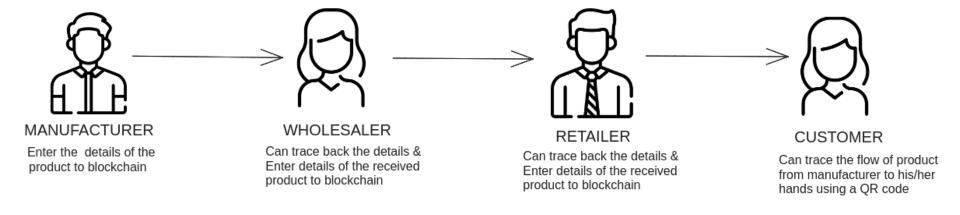
Certichain

SUPPLY CHAIN

- Track the life cycle of a product from the manufacturer to the end user

MANUFACTURER
Enter the details of the product to blockchain

WHOLESALER
Can trace back the details & Enter details of the received product to blockchain

RETAILER
Can trace back the details & Enter details of the received product to blockchain

CUSTOMER
Can trace the flow of product from manufacturer to his/her hands using a QR code

AGROCHAIN

STEP 1 — Registration

With an E-KYC or Aadhar Number.

Agrochain generates unique Wallet Address for transactions over the ledger

STEP 2 — Crop Listing

Registered farmers can list their crops for funding.

Crop lists are validated by certified agencies or genuine peers

STEP 3 — Agro Bond

Text

Certifying agencies issues agro-bonds corresponding to valid crop lists

Consumers can invest in agro-bonds to fund the crops

Smart Contract enables the agreement between farmer and consumer

STEP 4 — Transparent Ledger

65%
65%
65%
65%

Consumers can track the crop right from sowing to cultivation through transparent ledger.

Farmers update ledger based on the contract

Ledger ensures standards for cultivation and quality of product

STEP 5 — Loyalty

Farmers practicing best methods gets high credits

Farmer credit ensures good returns and customer loyalty

Consumers with good investment records could gain better bonds with high returns.
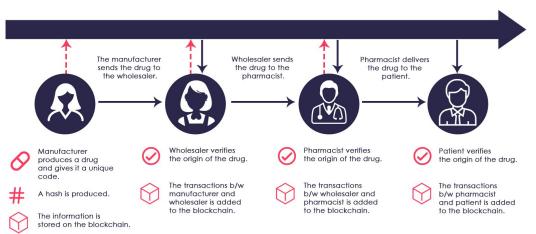
HEALTHCARE

- ○ Single ledger for patient data shared across different healthcare providers.

- ○ Drug or medicine traceability from manufacturers to end consumers.

- ○ Vaccine traceability ledger from clinical trials to final regulatory approval.

The manufacturer sends the drug to the wholesaler.

Wholesaler sends the drug to the pharmacist.

Pharmacist delivers the drug to the patient.

Manufacturer produces a drug and gives it a unique code.

A hash is produced.

The information is stored on the blockchain.

Wholesaler verifies the origin of the drug.

The transactions b/w manufacturer and wholesaler is added to the blockchain.

Pharmacist verifies the origin of the drug.

The transactions b/w wholesaler and pharmacist is added to the blockchain.

Patient verifies the origin of the drug.

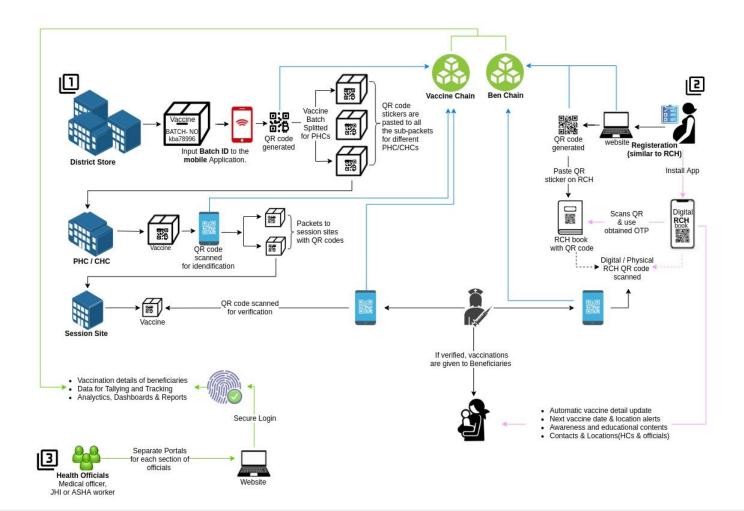The transactions b/w pharmacist and patient is added to the blockchain.

Blockchain Vaccine Traceability

- As a solution to the improvement of the immunization status of the country and create proper monitoring of the program, Kerala Blockchain Academy has developed- **Immunochain**.

- This project aims to provide an immutable identity for the supply side (vaccines) and beneficiary side (mother & child) under the Universal Immunization Program (UIP).

- The real-time data of the vaccine administrations received through **Immunochain** is intended to be beneficial for the healthcare officials to improve the effectiveness and coverage of the immunization process.

District Store

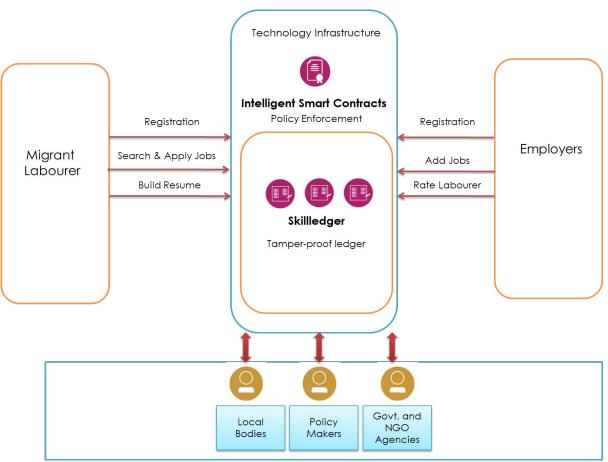Vaccine BATCH- NO kba78996

Input **Batch ID** to the **mobile** Application.

QR code generated

Vaccine Batch Splitted for PHCs

QR code stickers are pasted to all the sub-packets for different PHC/CHCs

Vaccine Chain

Ben Chain

QR code generated

website **Registeration (similar to RCH)**

Install App

PHC / CHC

Vaccine

QR code scanned for idendification

Packets to session sites with QR codes

Paste QR sticker on RCH

RCH book with QR code

Scans QR & use obtained OTP

Digital **RCH** book

Session Site

Vaccine

QR code scanned for verification

Digital / Physical RCH QR code scanned

If verified, vaccinations are given to Beneficiaries

- Vaccination details of beneficiaries
- Data for Tallying and Tracking
- Analyctics, Dashboards & Reports

Secure Login

- Automatic vaccine detail update
- Next vaccine date & location alerts
- Awareness and educational contents
- Contacts & Locations(HCs & officials)

Health Officials Medical officer, JHI or ASHA worker

Separate Portals for each section of officials

Website

GOVERNMENT SECTOR

- Land Records

- Welfare Distribution

- Digital Identities

SkillChain

An Inter-State Migrant Job Portal

Technology Infrastructure

Intelligent Smart Contracts

Policy Enforcement

Skilledger

Tamper-proof ledger

Migrant Labourer

Registration

Search & Apply Jobs

Build Resume

Employers

Registration

Add Jobs

Rate Labourer

Local Bodies

Policy Makers

Govt. and NGO Agencies

ART

- Problems faced by artists
  - Ownership issue
  - Lack of provenance
  - Unavailability of market
- NFT
- Advantages
  - Digital ownership
  - Provenance
  - Global Market
  - Royalty

Beeple - Mike Winkelmann

Beeple sold an NFT for $69 million

Through a first-of-its-kind auction at Christie's

Crypto Collectables

The most direct and no brainer use case of blockchain in gaming.

The crypto collectables are mainly in game objects (assets) that use blockchain for the following features:

- Ownership of the object.
- Guarantee the Rarity of the object.
- Ensure the uniqueness and non duplicability of an object.

Games in Blockchain : CryptoKitties

NFT Marketplaces

#	Name	Balance ⬍ ⓘ	UAW ⬍ ⓘ	% UAW ⬍ ⓘ	Volume ⬍ ⓘ	%
1	**OKX NFT Marketplace** ◆ ✦ ⬡ ◭ ≡ ◈ OP +3	$45.25	884	-6.65%	$10.61M	
2	**Uniswap NFT Aggregator** ◆ ◆ Ethereum	$0	1.68k	+16.61%	$4.42M	
3	**Blur** ◆ ◆ Ethereum	$65.12M	3.22k	+19.8%	$4.29M	
4	**OpenSea** ◆ ◆ ✦ ⬡ ◭ ≡ ◈ OP +2	$58.57k	9.47k	+9.82%	$1.96M	
5	**SpaceFi** ⬌ zkSync Era	$31.61k	19.25k	-6.3%	$1.61M	
6	**LooksRare** ◆ ◆ Ethereum	$10.03M	153	-22.34%	$1.44M	
7	**X2Y2** ◆ Ethereum	$1.35k	70	+29.63%	$1.04M	
8	**Element Market** ◆ ✦ ⬡ ◭ ◉ ⬌	$1.11k	8.96k	-32.52%	$239.36k	
9	**JPG Store** ◈ Cardano	$749.87k	2.15k	-0.09%	$142.32k	
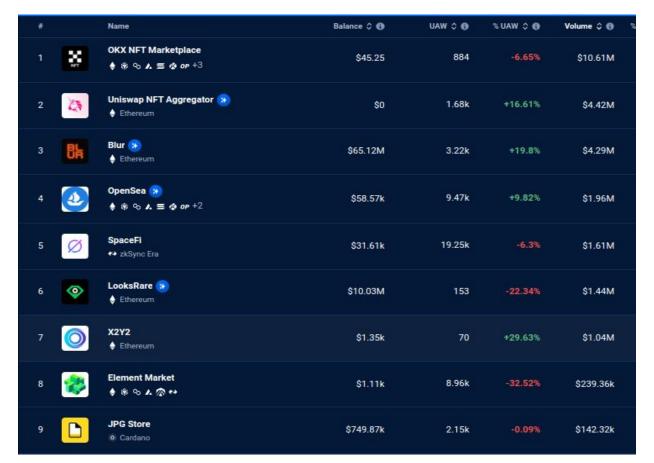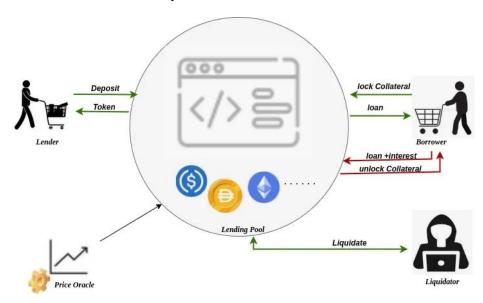
FINANCE

- Reduce opacity of financial activity
- Blockchain can make financial transactions transparent
- Lending & Borrowing

DeFi Apps: DappRadar.com

1	**SimpleFX** ◆ Ethereum	$0.409	4.18k	+1.01%	$250.59M
2	**PancakeSwap V3** ✦	$268.47M	62.43k	+6.24%	$180.15M
3	**1inch Network** ✦ +3	$27.45k	13.95k	-11.37%	$115.26M
4	**Odos** +2	$91.97k	20.33k	-5.23%	$53.66M
5	**Stargate** ✦ +1	$378.09M	53.34k	-4.3%	$42.21M
6	**Minswap** ☀ Cardano	$2.63B	2.41k	-57.35%	$22.78M
7	**ReactorFusion** ↔ zkSync Era	$2.5M	6.11k	+6.82%	$18.68M
8	**EraLend** ↔ zkSync Era	$815.89k	9.01k	+11.78%	$16.97M
9	**Aave V3** ✦	$6.28M	2.36k	+5.34%	$15.27M

Use Cases

Ethereum Push Notification Service (EPNS).

A Notification Protocol which enables users (Wallet Addresses) to receive notifications.

Polygon is a protocol and a framework for building and connecting Ethereum compatible blockchain networks. Bengaluru-based blockchain technology startup.

Status combines a peer-to-peer messenger, crypto wallet, and web3 browser into a private and secure communication tool.

Chainlink a secure decentralized oracle network.

Built on Ethereum.

Connecting smart contracts to real world events like payments
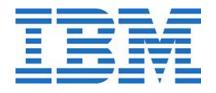
Use Cases [Use Case Tracker]

Project Falcon - Streamlined Blockchain Payments and Deployment Solution

To construct and deploy efficient blockchain payment systems.

In-Development

IBM Digital Health Pass

Platform for individuals and organizations to manage and verify health-related information.

In-Production

Corsha's identity-first platform gives organizations full visibility into their APIs and the machines that are accessing them.
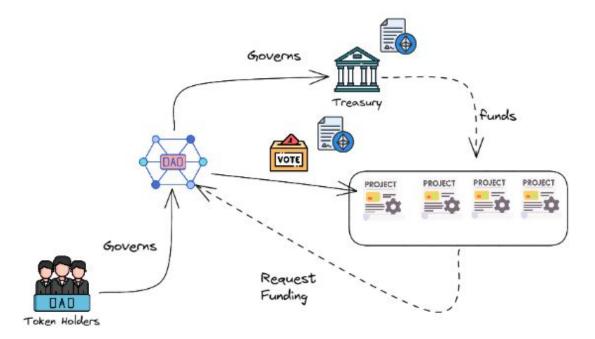
In-Production

Infosys has partnered with Riverside County, California to reimagine the public records validation.

Verifying credentials and certificates, such as birth certificates, marriage licenses etc
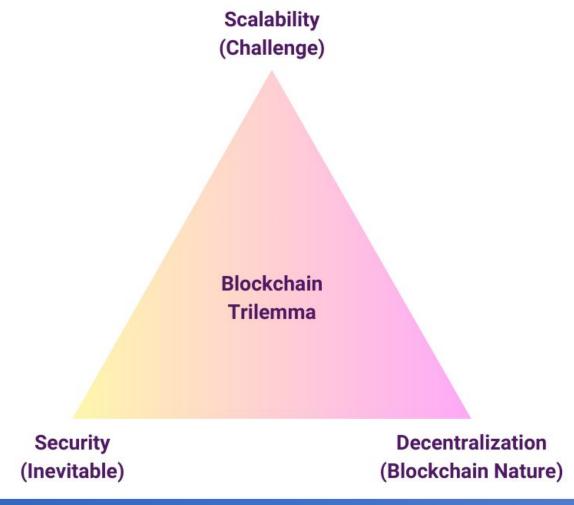
Decentralized Autonomous Organizations

● Internet-native organizations that are managed and owned by their members

Scalability (Challenge)

Blockchain Trilemma

Security (Inevitable)

Decentralization (Blockchain Nature)

From Hype to Adoption

- *More than **50% of global organizations** view blockchain as a **strategic priority**.*

- *Global spending on **Blockchain Solutions** is **$19 billion in 2024.**(IDC 2020)*

- *Blockchain Market-size is expected to be **$39 billion** in size by **2025**.(Cision PR Newswire, 2020)*

- *There are more **3,000 blockchain startups** registered on AngelList.*

- *The **US accounts for 56%** of the global **blockchain investments**.*

An Opportunity for You.. ?

Career Opportunities

- Blockchain Development:
    - Smart contract development, decentralized applications (dApps), and blockchain infrastructure.
- Crypto and Tokenomics:
    - Tokenomics design and financial analysis.
- Decentralized Finance (DeFi):
    - Developing, managing, and analyzing DeFi protocols and products.

Career Opportunities

- Non-Fungible Tokens (NFTs):
  - Creation, marketing, and management of NFTs in various fields such as art, music and gaming.

- Web3 Marketing and Community Management:
  - Managing online communities, social media, and content creation for Web3 projects.

JOB OPPORTUNITIES

- Blockchain Developer
- Blockchain Analyst
- Blockchain Architect
- Blockchain Quality Engineer
- Blockchain Consultant
- Research & Development
- Community Manager… and many more

Thank you

KBA

kba.ai

kba.admin@duk.ac.in

+91 6238210114

kbaiiitmk.medium.com

@KeralaBlockchainAcademy