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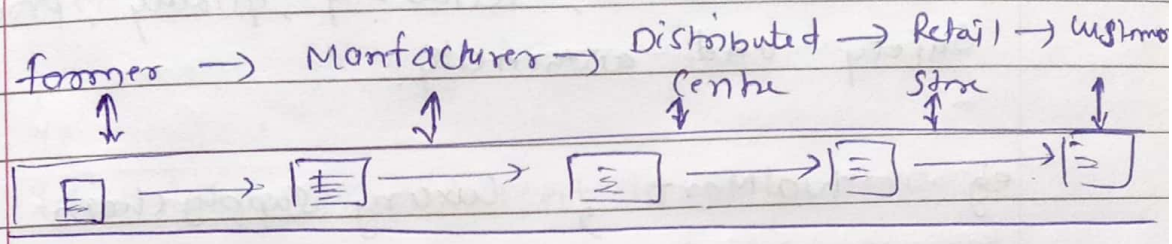
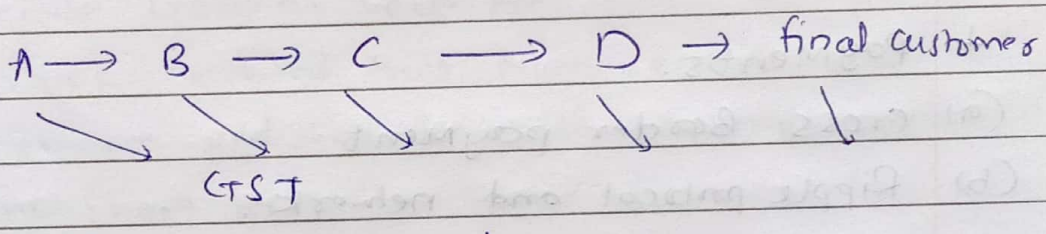
Unit -6

* (1) Blockchain Retail

(1) Supply chain - end to end visibility



(2) Taxation.



* Smart contract used
* less fraud & transparent.

(3) preventing fraud and counterfeit Goods.
- visible blockchain help in prevent fraud
- we can get location from where our Food is deteriorate.
- with iot we can acheive Goal.

(4) Customer Identity
- Only organisation use Customer data
→ No third party ~~use~~ view the identity of Customer

(5) Crypto as payment

6) Reducing cyber Hacks.

- Blockchain provide high Security. from attack

Blockchain assures, reliability, quality, product Safety and authencity.

eg. WalMart, Luxury Supply chain

* (2) Banking and financial Services

1 Payments.

(a) Cross Border payment.

(b) Ripple protocol and network.

→ protocol for bank to clear and Settle payment

→ 5sec..

→ Currency - XRP

→ Can convert USD/INR to XRP.

(c) Steller protocol and Network

→ Open

→ 2-5 Sec

→ currency - Lumen.

(d) project Ubin: SGD. on distributed ledger.

Phase 1 : local payment in bank.

Phase 2 : Implementation on cordo, Hyperledger, Quorum.

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2. Capital Market / Shares and investment.

(a) Commercial paper.

- A party sell commercial paper (that I owe you some amt. of Money) in exchange of investment
- Idea is to implement it on blockchain to get immutability, cost reduction, automation & efficiency.

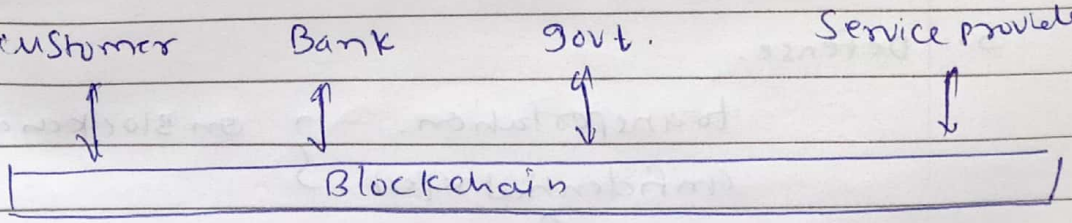
(b) ~~Securi~~ Trading securities.

Stock or bond that management plan to purchase and sell in order to make Money in the short term.

- Idea is to implement it on blockchain to get Immutability, cost reduction, ∴ etc.

3 KYC Know your customer.

- Every time we need KYC for diff. platform.
- If customer change M. no. then need to change everywhere
- Solution Shared KYC.

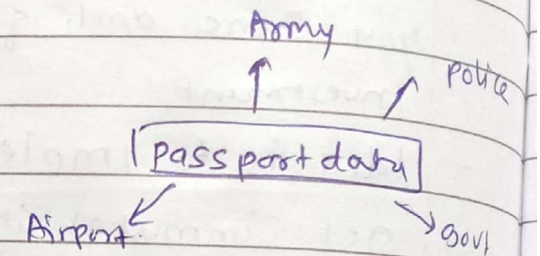


4) Insurance.

- less fraud
- transparent

(3) Government.

1. Passport data.



Here User don't know Who is accessing his data, No transparency

Solution- Blockchain will add as transaction if anyone access the data.

2. project Ubin - SGD. Singapur.

Phase 1 : Bank use it for their private trans".

Phase 2 : Hyperledger, corda, Quorum

3 India chain

digitalization and validation of educational degree on Blockchain

4. citizen identity

- User will know who is accessing identity

5. Defense.

transportation. } on Blockchain.
confidential report }

① track
② Certification and authentication of Soldiers
③ log is safe.

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(6) Tax.

Smart Contract. → who have to pay how much tax and who will get how much money is calculated in transparent manner, and less fraud.

(7) Land registry.

Set of document that store info about the legal owner

on using blockchain. we can see property chain from 1st owner to recent one.

No need to depend on any agency to verify the authenticity.

(8) Birth, Marriage and Death Certificate.

- using blockchain it will immutable.

(9) Voting

- transparency and immutable.

(10) Data Storage.

- data integrity and security.

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* (9) Healthcare.

1) Electronic Health Records
- a common data / Record of patient that are shared from a hospital to hospital.
- Centralized
→ data manipulation.
→ data blockage from any hospital
→ Low Security B

Solution Blockchain, open, Decentralized, Secure and patient have privacy.

2) Drug and Medical Equipment Supply Chain
- prevent fake and counterfeit Medicine use
- Track expiry date.
→ clean supply chain
- transparent.
→ No Scam.

3) Medicine Development
→ help in clinical trial
→ collaboration data.

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*(5) IoT - Internet of things - is a system of interconnected everyday Computing object and via the internet.

Benefits.

(1) High data Security. - verify every data before adding in ledger.
(2) Stronger Data validation process.
(3) Data Anonymity for Extra privacy: IoT User's data is confidential.
(4) firewall Against DDos Attack.
(5) End to End visibility
(6) Real time Tracking:
(7) Identity for IoT Devices: It help to check authenticity of every IoT device by attaching a unique identity to each device during the Manufacturing process.
(8) More acess control: can use private blockchain
(9) Better compliance Management.
(10) Better quality control in IoT Manufacturing
(11) Stronger cloud Management - Encrypt all data before Sending to cloud.
(12) Secure communication Gateway
13) Better Automation process
14) Encryption for Multi-factor Authorization
15) Collaborative Environment for shared Economy.

(a) Supply chain Management

* IoT integrated vehicle to track shipments
* IoT sensor for checking temperature, motion of product
* track overall process and increase the efficiency

(b) Smart Homes.

Blockchain smart home solution can securely store user sensitive data such as face ID, fingerprint, voice ID etc.

(c) pharmacy.

can track drug from manufacturing to user.

(d) Automotive sector.

* Smart parking solution.
* automate traffic control
* Car manufacturing

(e) Agriculture

* Blockchain IoT can track the wheather impact and other external factor to increase the quality of the crop.
* It give transparency in food supply chain
* Offers farmers the option to pre-sale their products using smart contract and get paid in advance

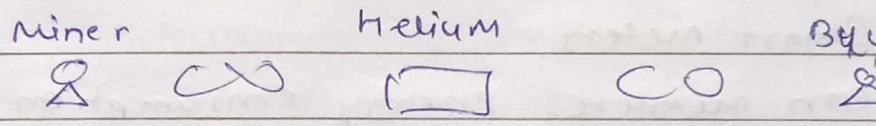
(f) Sharing economy.

+ help to develop new shared economy

(g) Water Management

- It can help to manage water by tracking how much water is being used and can automate shutdown in case of leakages.

g. Helium



- Run hotspot
- Rewarded with token
- Open Source hotspot
- long fi protocol
- pay for use net
- Payment converted to token

*(6) Blockchain in Energy & Utilities.

(a) Peer to peer Energy Trading.

- allow consumer to buy or sell energy among themselves.
- No middlemen, Central authority, and low rate.
- No much Maintainence required.

(b) Renewable energy certificate (RECs).

- Can track and validate REC transaction instantly and automatically
- Can store data in Blockchain (encrypted + DLT)

(c) Automated Settlement of Trades
- through smart contract we can automatically trigger transaction.
- No broker.

(d) Microgrids.
- Can Manage Microgrid.
  Micogrid - Energy plant for small location.

(e) Smart meters.
- can measure energy consumption and sent data to Utility Sector.

*(7) Integration with other domain

(a) With Gaming
- Blockchain can aid for in-game currency in video games.
- Operate gamer in decentralized network.
  eg Cryptokitties.
- ~~Hacg~~ gamers can transfer virtual items from game to game

(b) Education
  to store student data
(c) Agriculture.
(d) Crowdfunding
(e) Blockchain in Media.