# IBM Block chain based Consumption credit points exchange system

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# Outline

1. Background
2. Scenario
3. Architecture
4. Open Block Chain  (HyperLedge)
5. Tasks
6. Technical Value
7. Participants
8. Milestones

# Background

- The different seller’ s consumption credit points isolated islands made the consumption credit points can only be used for its own company products, which dispelled the enthusiasm of accumulating points and make use of them.
- Our motive is to build an consumption credit points exchange mechanism and enliven the unemployed credit resource by exchanging the credit points among different sellers according to their need.

# Scenario Example

changed into restaurant credit points.

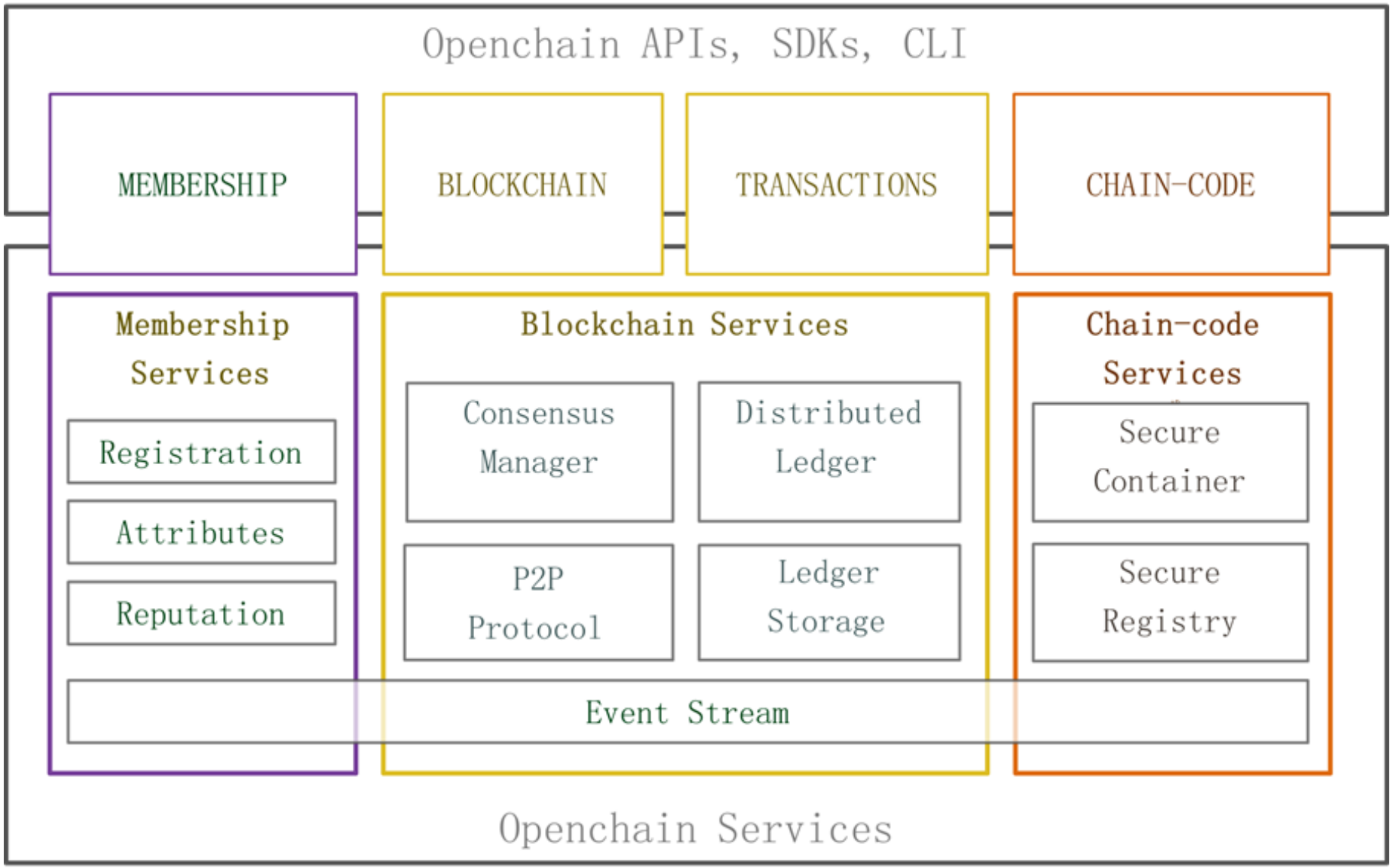
credit points exchange mechanism.

or

changed into supermarket credit points.

Business lady has a lots of flight points to expire.

# Open Block Chain Architecture



# System Architect

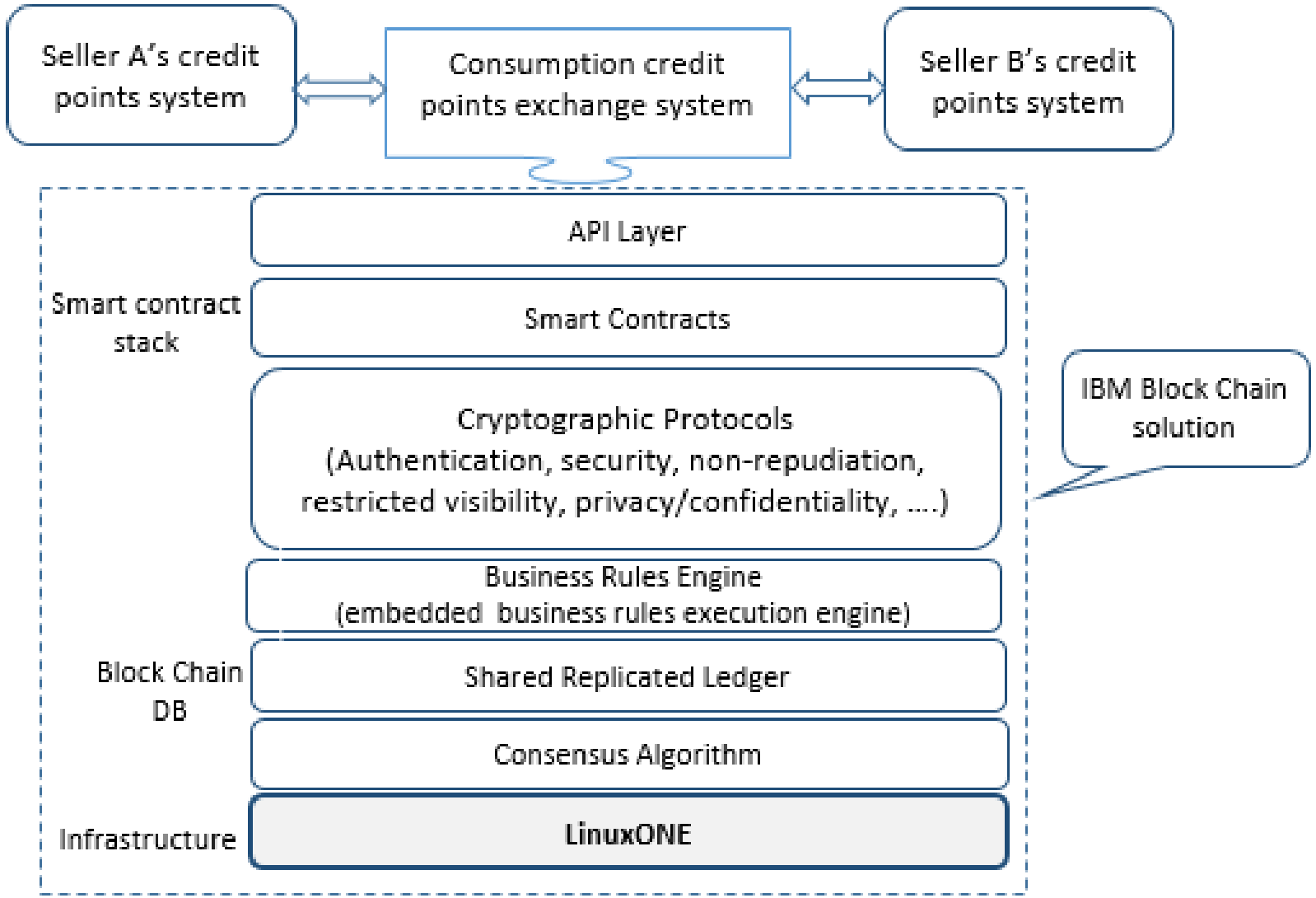
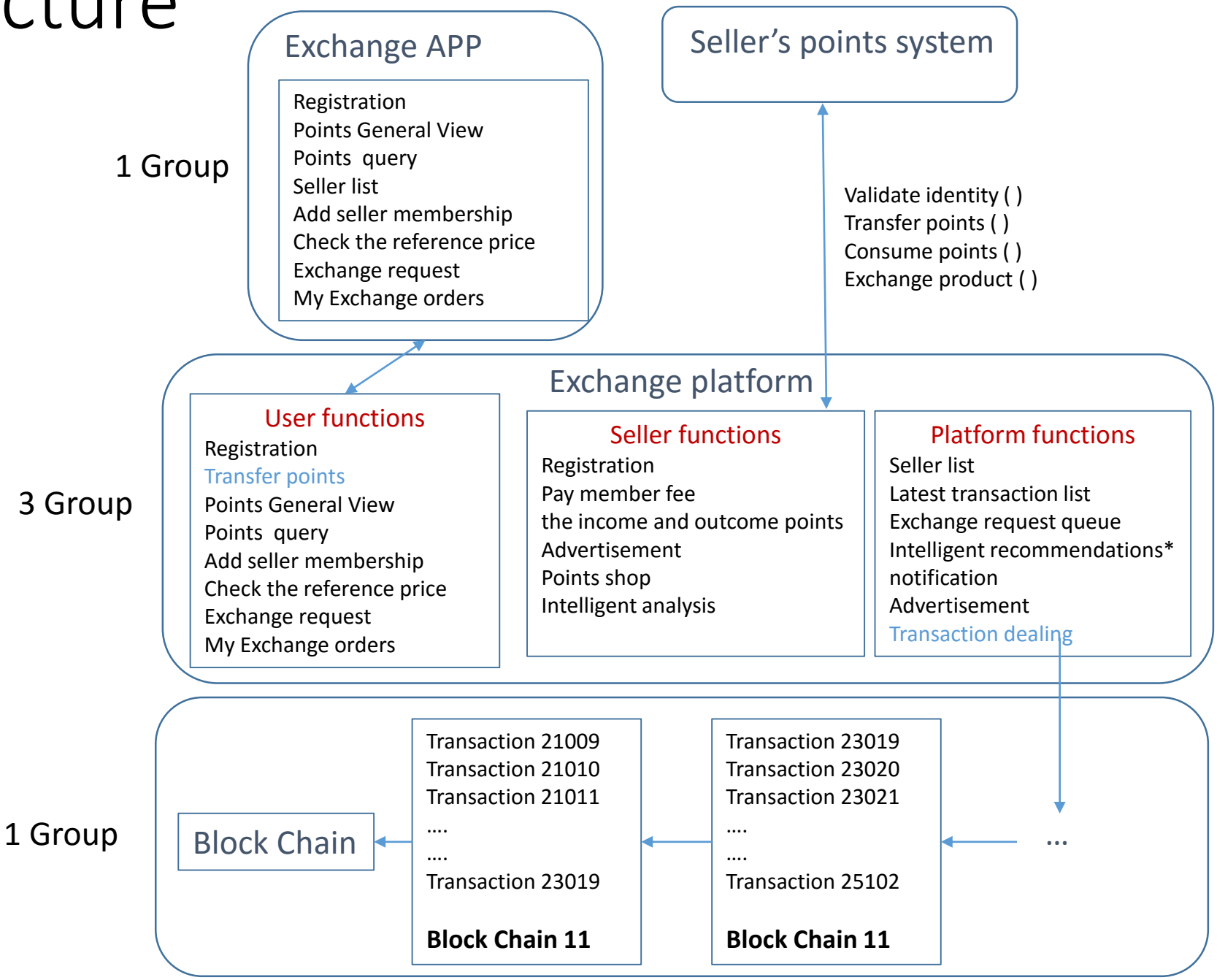
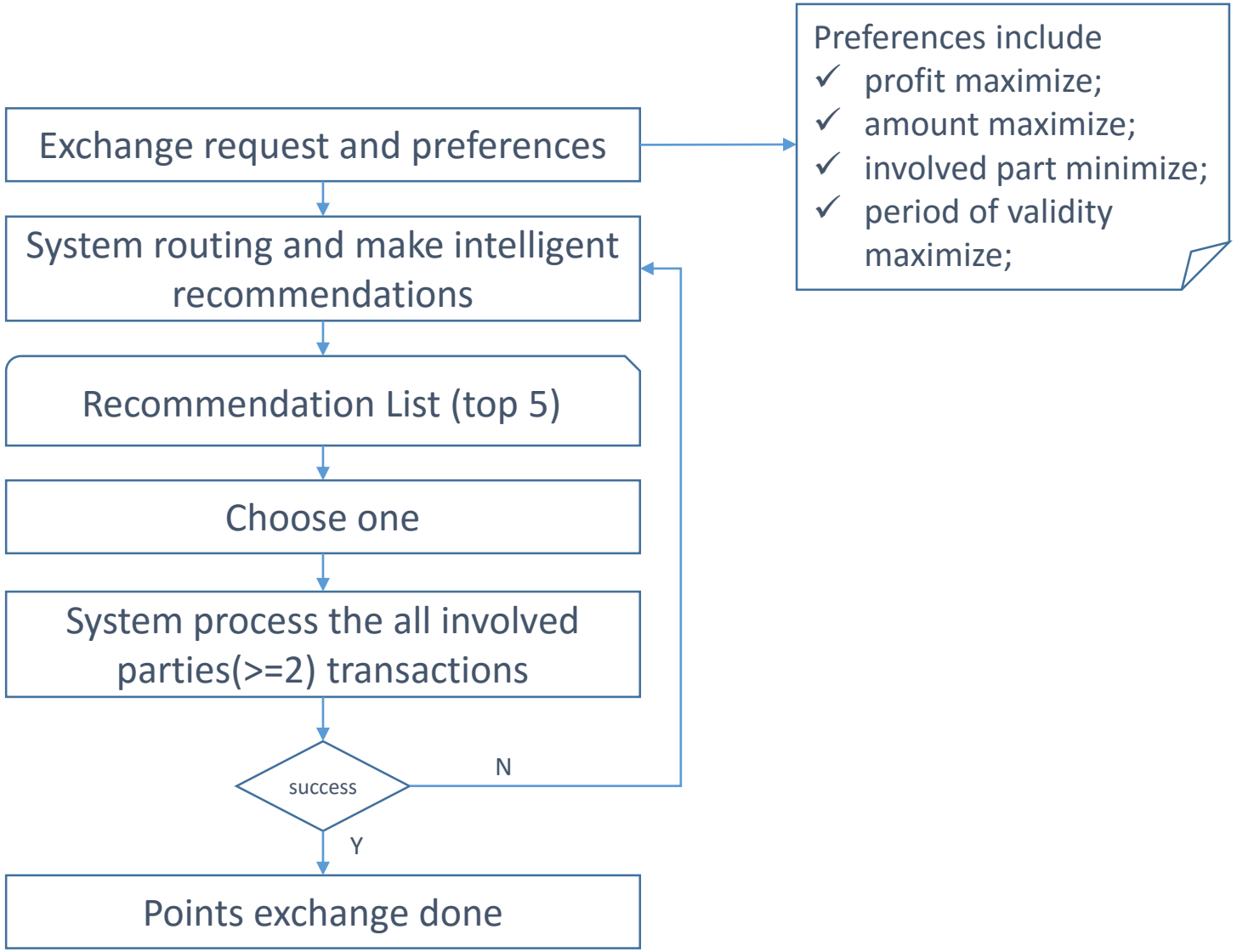



**Fig1 IBM block chain based credit points exchange system architecture**

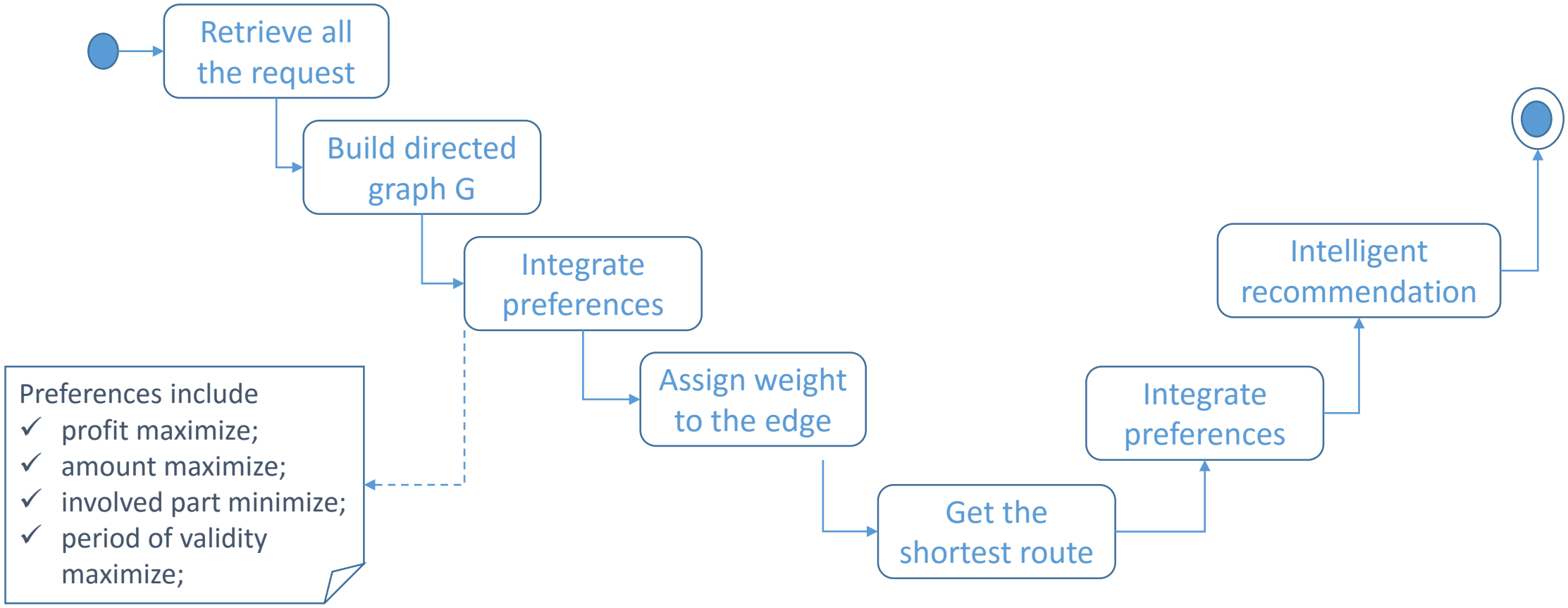
# Functional Architecture



# Points Exchange Process Flow



# Intelligent Recommendation Algorithm

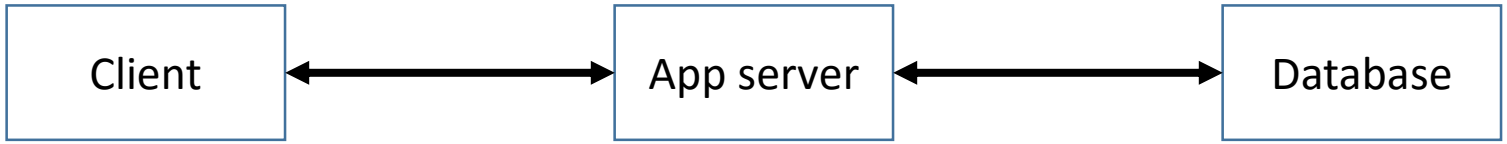


# Topology

## Logical

User/admin services

Points management

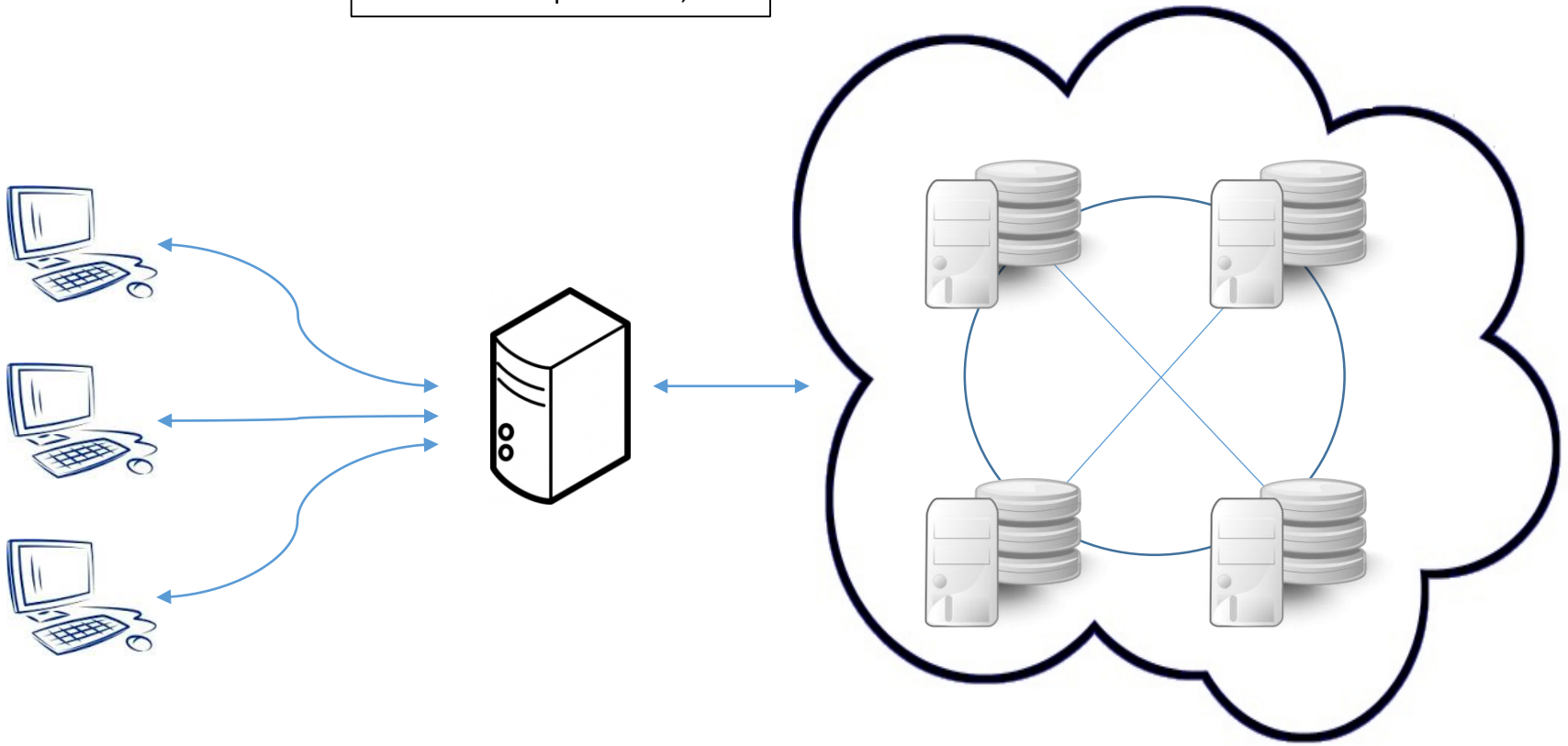



- Web UI access to user/admin services

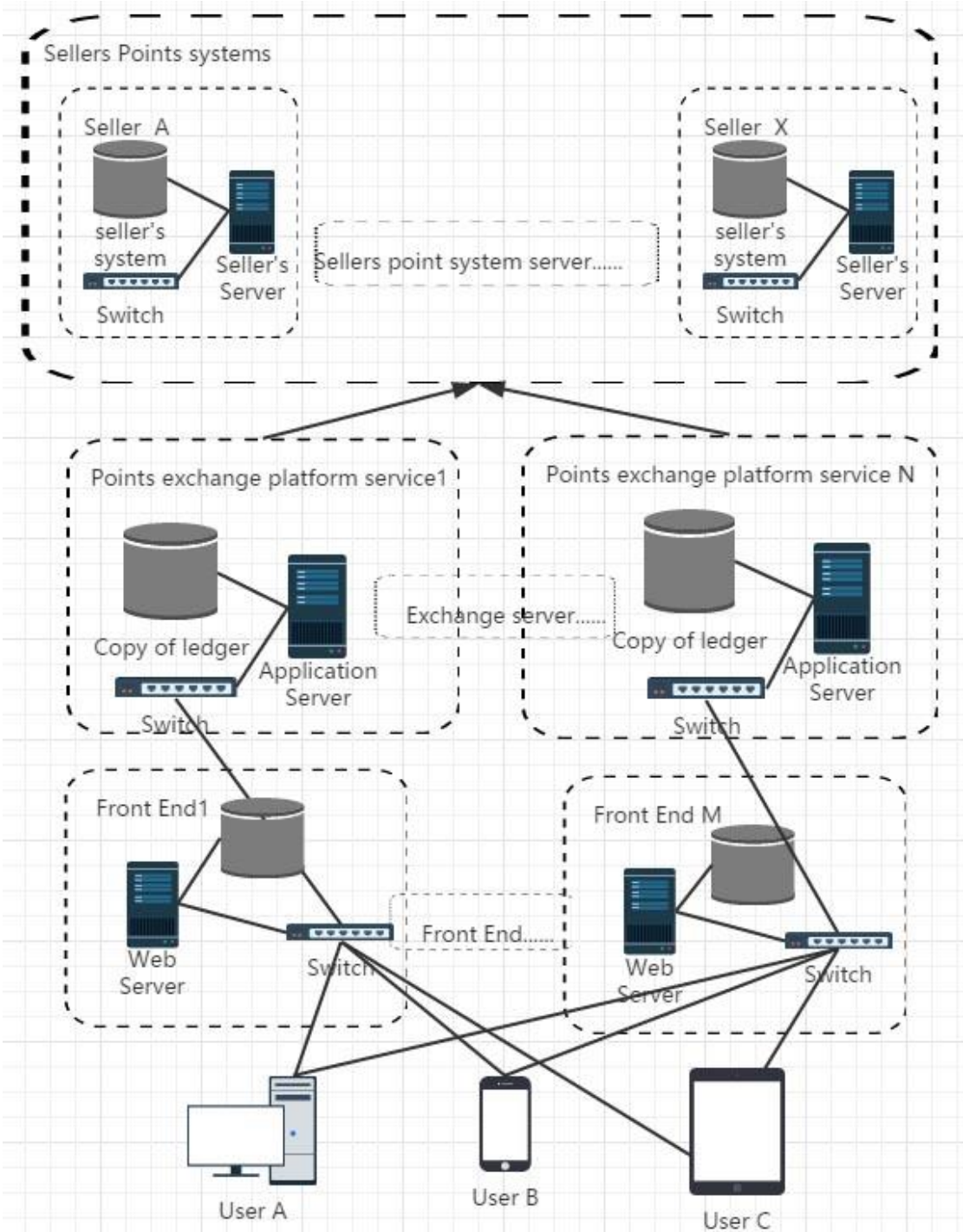
- User services: registration, point transfer/exchange, targeted ad, etc.
- Admin services: point database maintenance, limited time promotion, etc.

- The block chain network can host multiple ledgers, one for seller A and B, one for seller C, D, and E, etc.

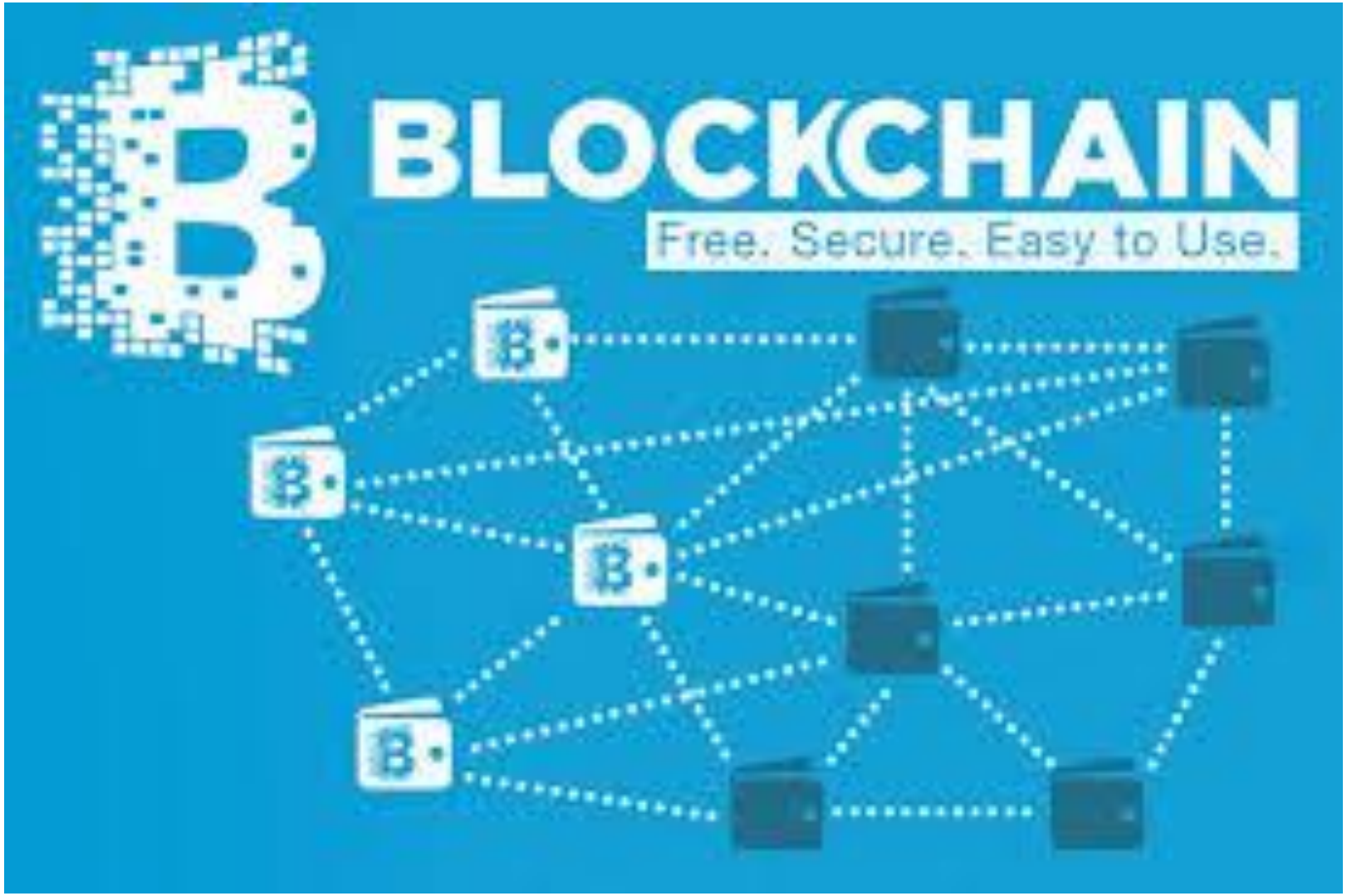
## Physical



# Topology


Sellers Points systems
Seller A
seller's system
Switch
Seller's Server
Sellers point system server.....
Seller X
seller's system
Switch
Seller's Server
Points exchange platform service1
Copy of ledger
Application Server
Switch
Exchange server.....
Points exchange platform service N
Copy of ledger
Application Server
Switch
Front End1
Web Server
Switch
Front End.....
Front End M
Web Server
Switch
User A
User B
User C

# What is a 'Blockchain'



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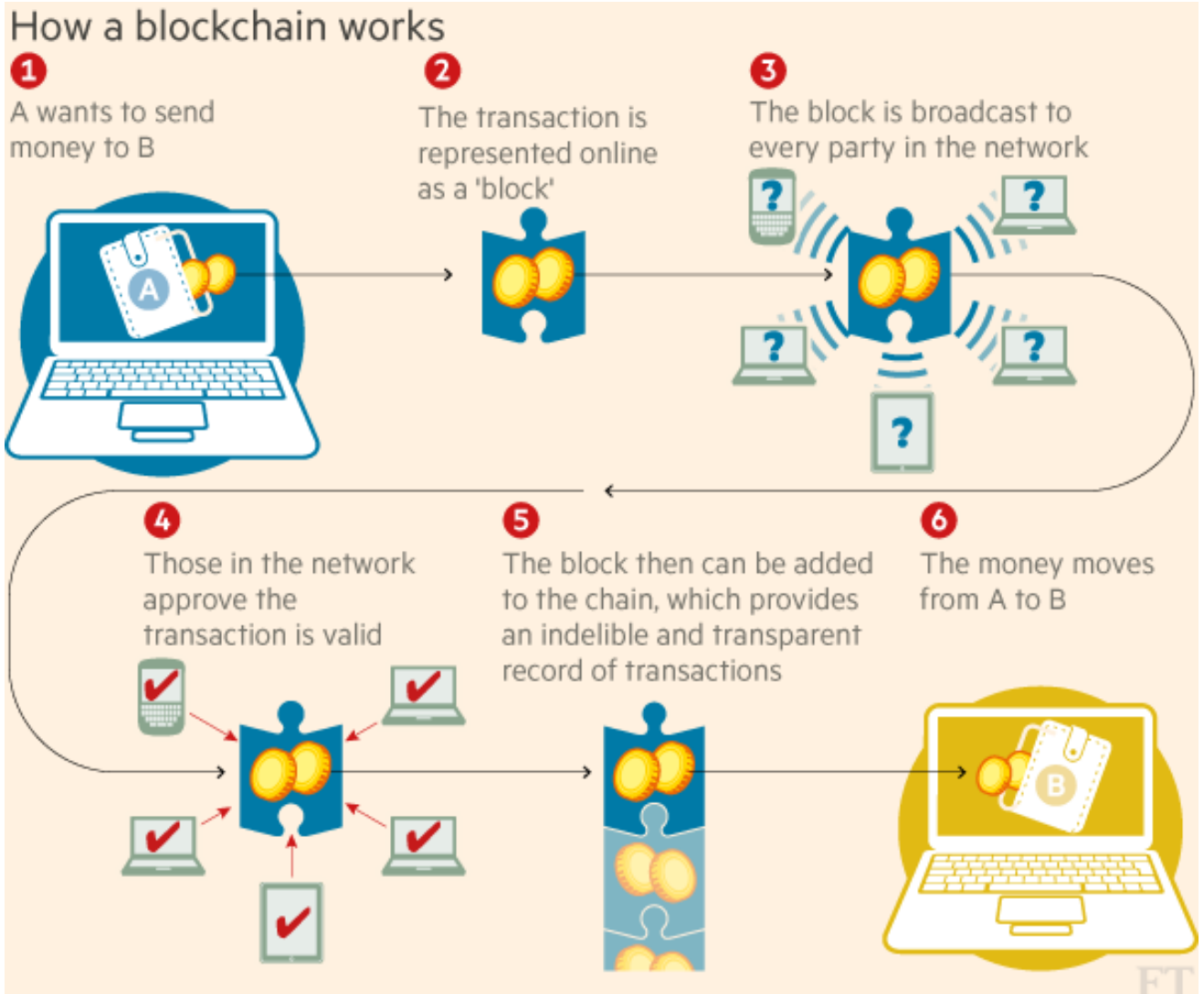

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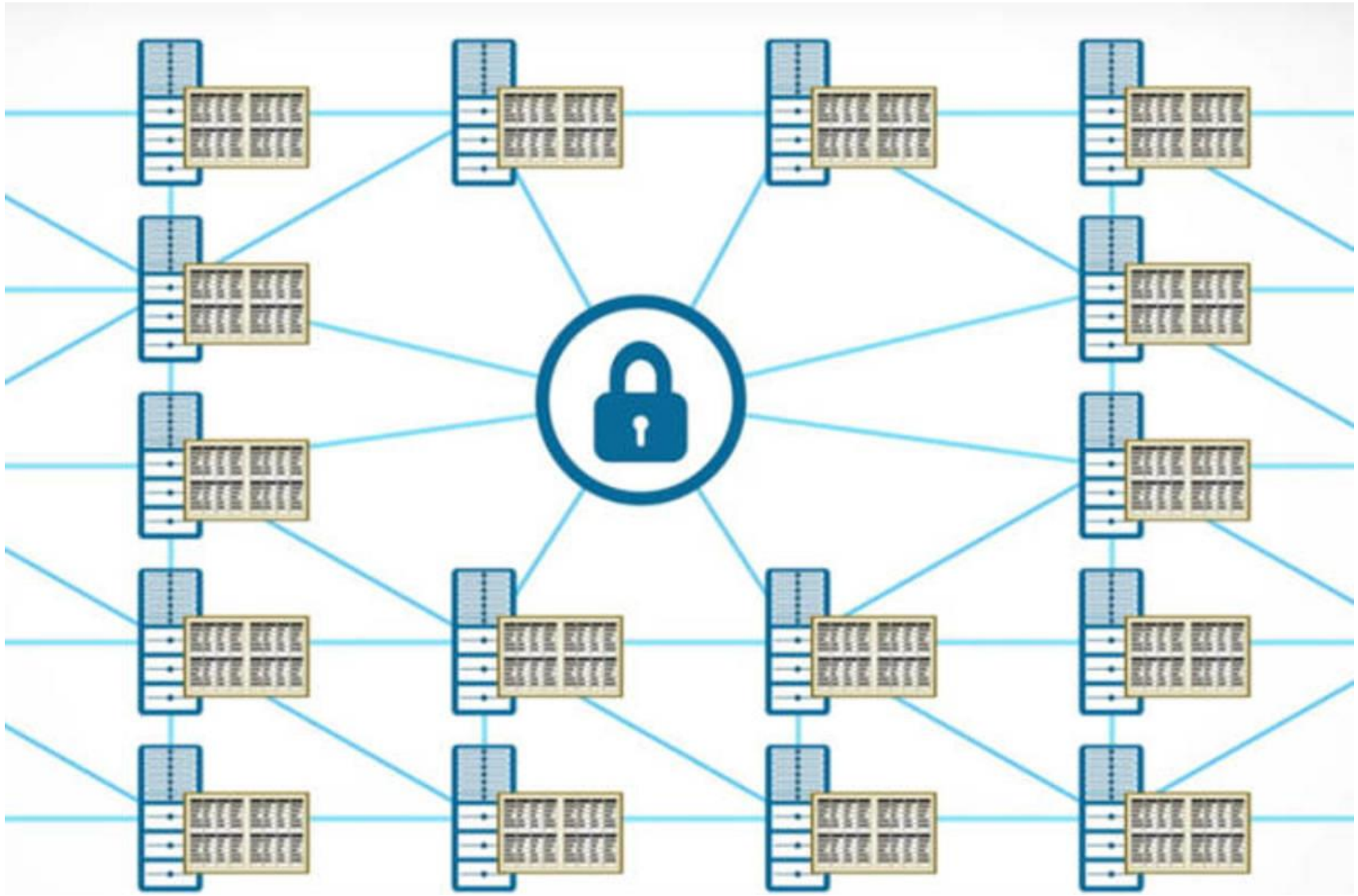

# What is a 'Blockchain'

- A blockchain is a public ledger of all Bitcoin transactions that have ever been executed. It is constantly growing as ‘completed’ blocks are added to it with a new set of recordings. The blocks are added to the blockchain in a linear, chronological order. Each node (computer connected to the Bitcoin network using a client that performs the task of validating and relaying transactions) gets a copy of the blockchain, which gets downloaded automatically upon joining the Bitcoin network. The blockchain has complete information about the addresses and their balances right from the genesis block to the most recently completed block.

- BREAKING DOWN 'Blockchain'
- The blockchain is seen as the main technological innovation of Bitcoin, since it stands as proof of all the transactions on the network. A block is the ‘current’ part of a blockchain which records some or all of the recent transactions, and once completed goes into the blockchain as permanent database. Each time a block gets completed, a new block is generated. There is a countless number of such blocks in the blockchain. So are the blocks randomly placed in a blockchain? No, they are linked to each other (like a chain) in proper linear, chronological order with every block containing a hash of the previous block.

# What is a 'Blockchain'

- To use conventional banking as an analogy, the blockchain is like a full history of banking transactions. Bitcoin transactions are entered chronologically in a blockchain just the way bank transactions are. Blocks, meanwhile, are like individual bank statements.
- Based on the Bitcoin protocol, the blockchain database is shared by all nodes participating in a system. The full copy of the blockchain has records of every Bitcoin transaction ever executed. It can thus provide insight about facts like how much value belonged a particular address at any point in the past.
- The ever-growing size of the blockchain is considered by some to be a problem due to issues like storage and synchronization. On an average, every 10 minutes, a new block is appended to the block chain through mining.

# Tasks

- Business model and Mechanism of Block Chain
- Block Chain infrastructure and Chain code
- Developing consumption credit points exchanging Application system
- Transaction process based on Block chain and  deploy on LinuxONE.
- Consumption credit points Exchanging App

# New Business model with IBM Block Chain based on LinuxONE

Credit points exchanging Platform

Credit points exchanging App

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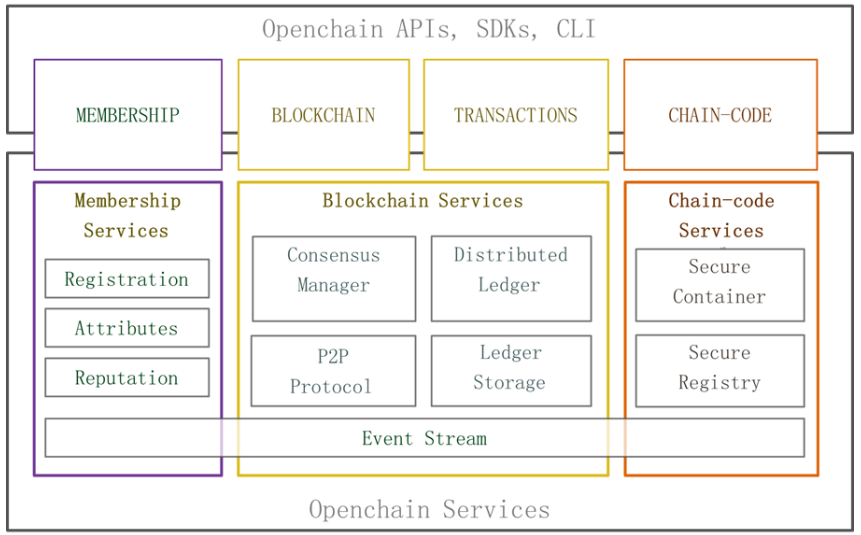


IBM Block Chain technical architecture

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IBM LinuxONE™

IBM LinuxONE Community cloud

- https://linuxone20.cloud.marist.edu/cloud/#/login