2018

Global Azure BOOTCAMP

Blockchain using HyperLedger

Vamshi Ramadugu

Asha Polamarasetty

Corporate Overview – ValueMomentum Software Services

- Software & Services Firm
- **Financial Services & Insurance focused**
- Established in 2000 with HQ in NJ, USA
- 150+ dedicated R&D team
- Executive Leadership and Practice Heads based in the US
- Offshore centers are SSAE 16 SOC 2 certified. Clean Rooms for several clients offshore

23%
Compound Annual Growth Rate since 2000

4
Analysts covering ValueMomentum Software & Services

>65
Clients Served in North America

1,850+
Global employee strength

Top 15
IT Services Vendor for North American P&C Carriers by # of customers*

14
>5 Year Customer Relationships Average ~8 years

BUSINESS FOCUS

- Banking & Lending
- Capital Markets

- Property & Casualty
- Healthcare
- Life & Annuities

Blockchain

*"Understanding **the problem** is ½ the solution"*

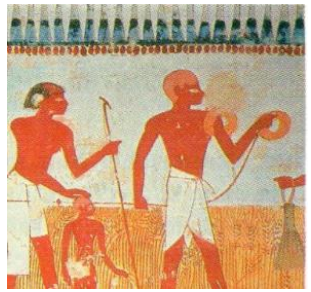
2018 Global Azure BOOTCAMP

The Evolution of Trading

VALUEMOMENTUM
Deliver Value. Drive Momentum.

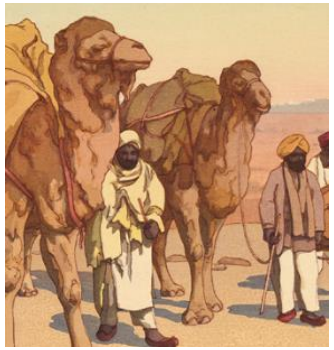
Stone Age
Barter System

17,000 BC
Livestock, salt, metal, rare stones



4000 BC
Clay amulet, clay pots or tools

1000 BC
Gold, silver, bronze



1 BC
Coins

Modern Age
Paper, Plastics

Digital Age

Trust in Global Economy is the problem

The Trust Machine

> "Simply put, the blockchain is a machine for creating trust."
>
> —The Economist

Blockchain

What market thinks?

2018 Global Azure BOOTCAMP

Hype? May be not

VALUEMOMENTUM
Deliver Value. Drive Momentum.

"By 2027, 10% of global GDP is likely to be stored on blockchain platforms."

WORLD ECONOMIC FORUM

Santander

McKinsey &Company

Gartner

"Blockchain technologies could reduce banks' infrastructural costs by $15-20bn a year by 2022."
Santander

"Blockchain has potential to save global financial industry up to $110bn,"
McKinsey

By 2025 :
Tax collected for the first time by a government via a blockchain
WEF

"Gartner's Top 10 Strategic Technology Trends for 2017"

2018 Global Azure BOOTCAMP

..Some Recent Headlines

VALUEMOMENTUM
Deliver Value. Drive Momentum.

Inside the Jordan refugee camp that runs on blockchain

Syrian refugees could regain legal identities that were lost when they fled their homes.

by Russ Juskalian April 12, 2018

A few times a month, Bassam pushes a shopping cart through the aisles of a grocery store stocked with bags of rice, a small selection of fresh vegetables, and other staples. Today he's wearing a black sweater tucked into denim jeans, which are themselves tucked into calf-high boots caked in mud. The Tazweed Supermarket, where he's shopping, is on the periphery of a 75,000-person refugee camp in the semi-arid Jordanian steppe, six and a half miles from the Syrian border.

India's Government Is Working to Track Counterfeit Drugs With Blockchain

BY DANIELLE CORCIONE
Danielle Corcione is a news writer for Complex. Their work has also appeared in Teen Vogue, ...

APR 11, 2018

GENETIC CODE

The Andhra Pradesh government plans to use blockchain to collect DNA data of 50 million citizens

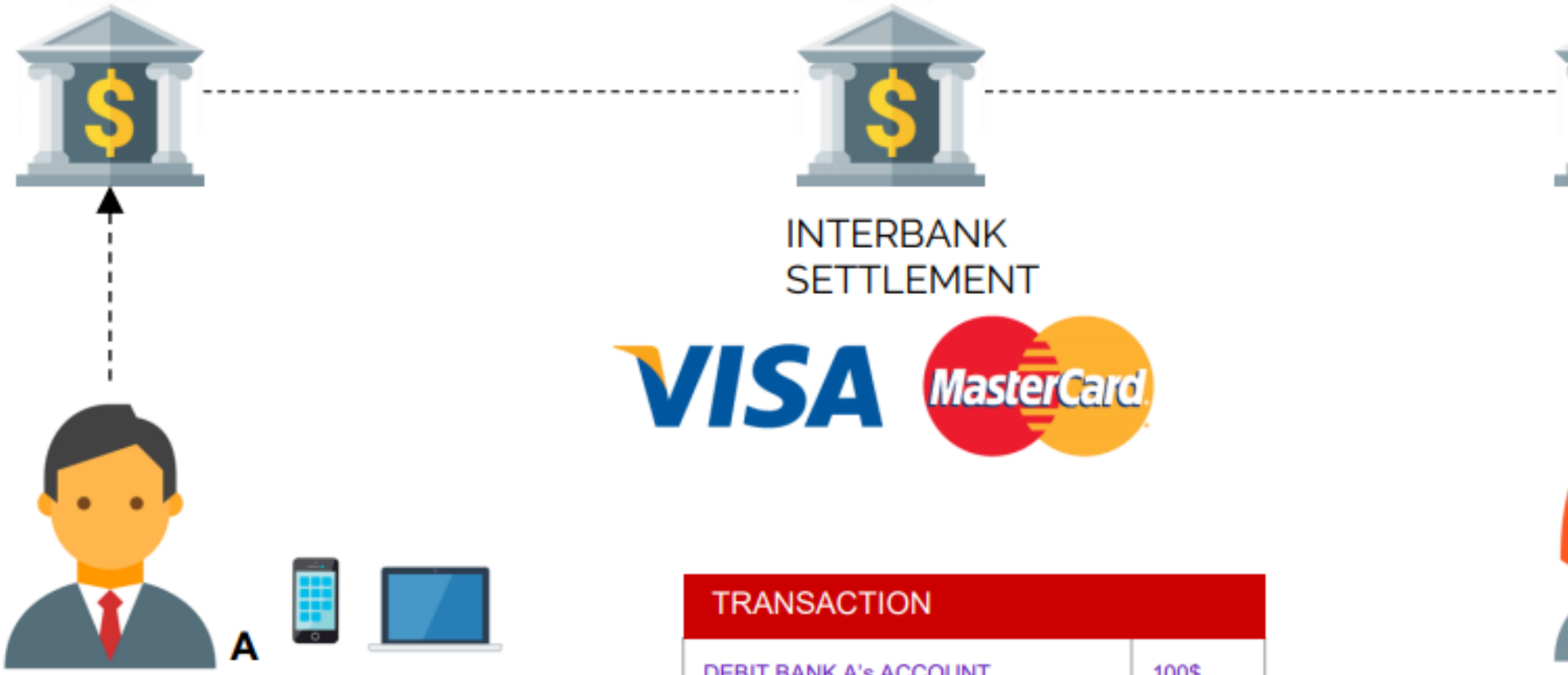
The move will help improve predictive medicine in the country, the N Chandrababu Naidu-led government said.

Blockchain

How does it works?

How it works, Traditionally?

VALUE MOMENTUM
Deliver Value. Drive Momentum.

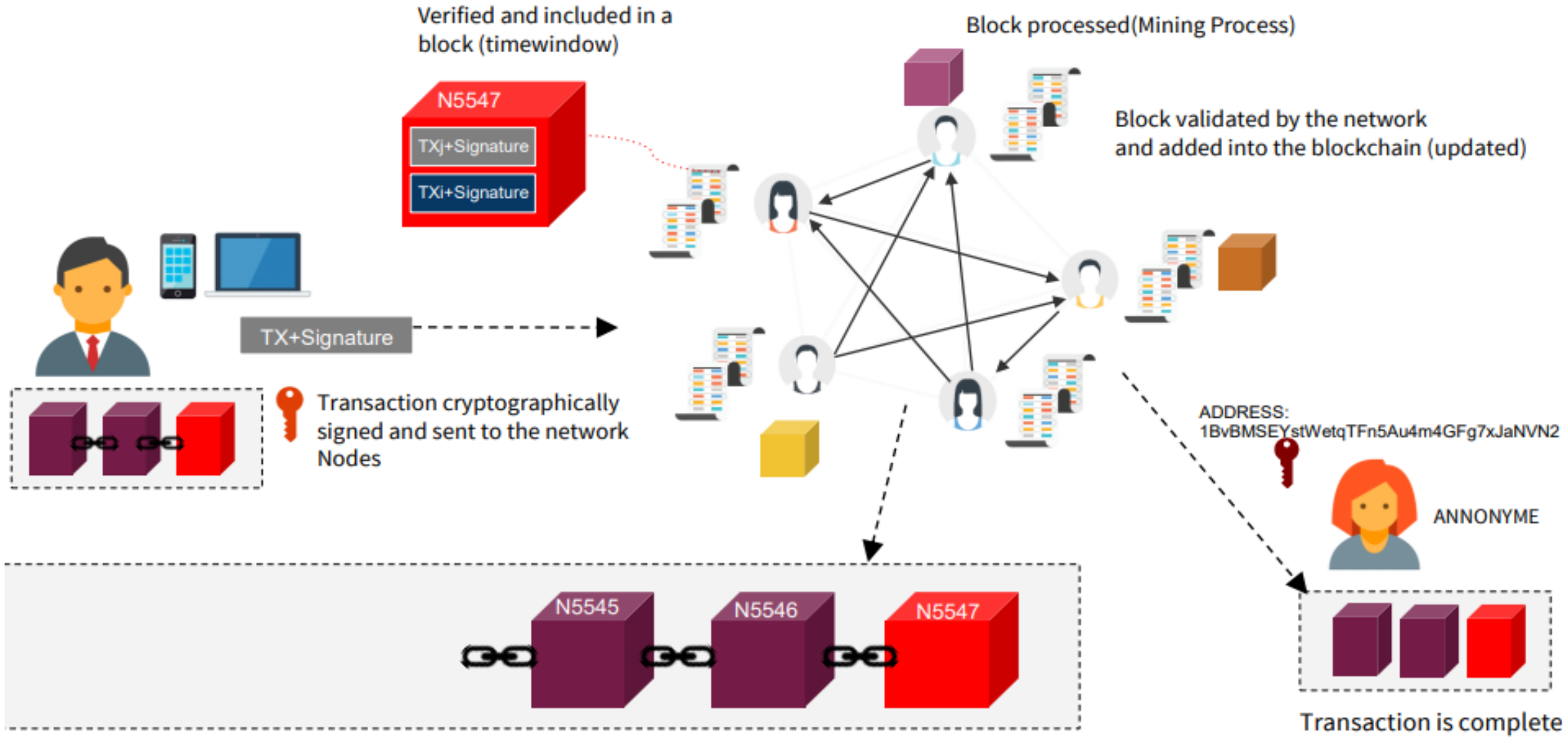


DEBIT		CREDIT	
		Balance	200$
Transfer	100$	Balance	100$

TRANSACTION	
DEBIT BANK A's ACCOUNT	100$
CREDIT BANK B's ACCOUNT	100$

DEBIT		CREDIT	
		Balance	100$
		Transfer	100$

How it works, In Blockchain?



Blockchain

What are the Key Concepts and Features?

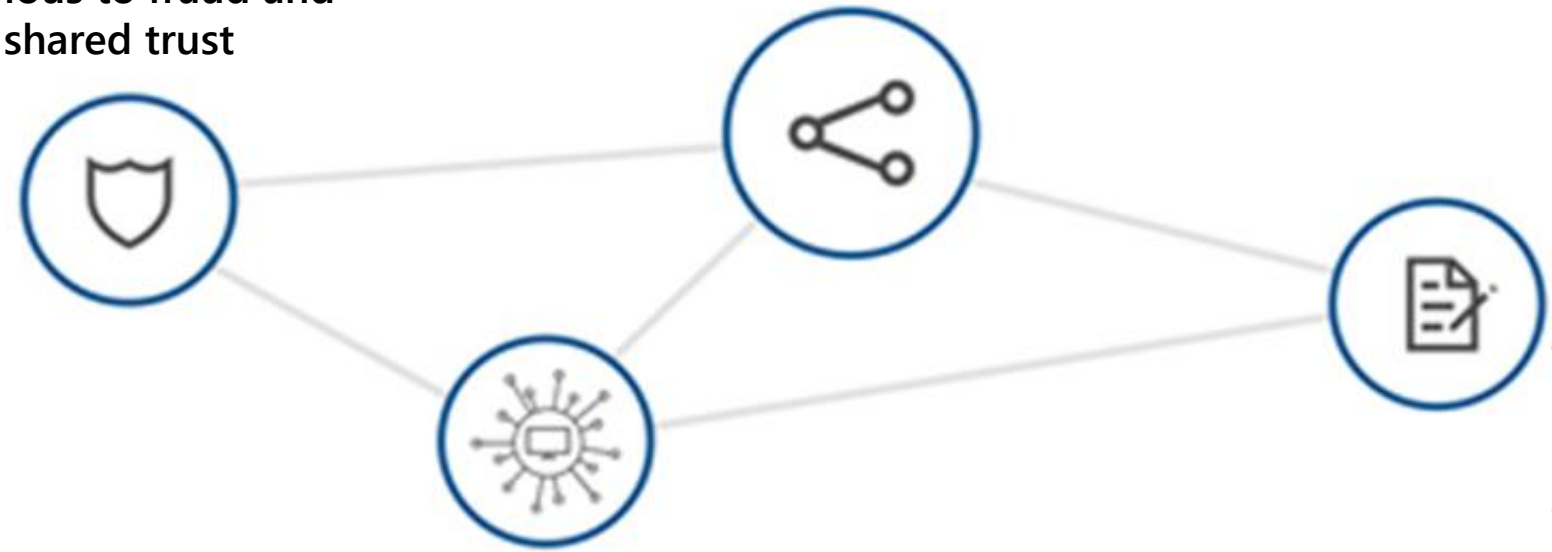
Key Concepts and Definition

Secure

Uses cryptography to create transactions
that are impervious to fraud and establishes the shared trust

Shared

Blockchain value is directly linked to the number of organizations or companies that participate in them. There is huge value for even fiercest of competitors to participate with each other in the shared database implementations.



Ledger

The database is append only so it is an immutable record of every transaction that occurs.

Distributed

There are many replicas of the blockchain database. In fact, the most replica there are the more authentic it becomes

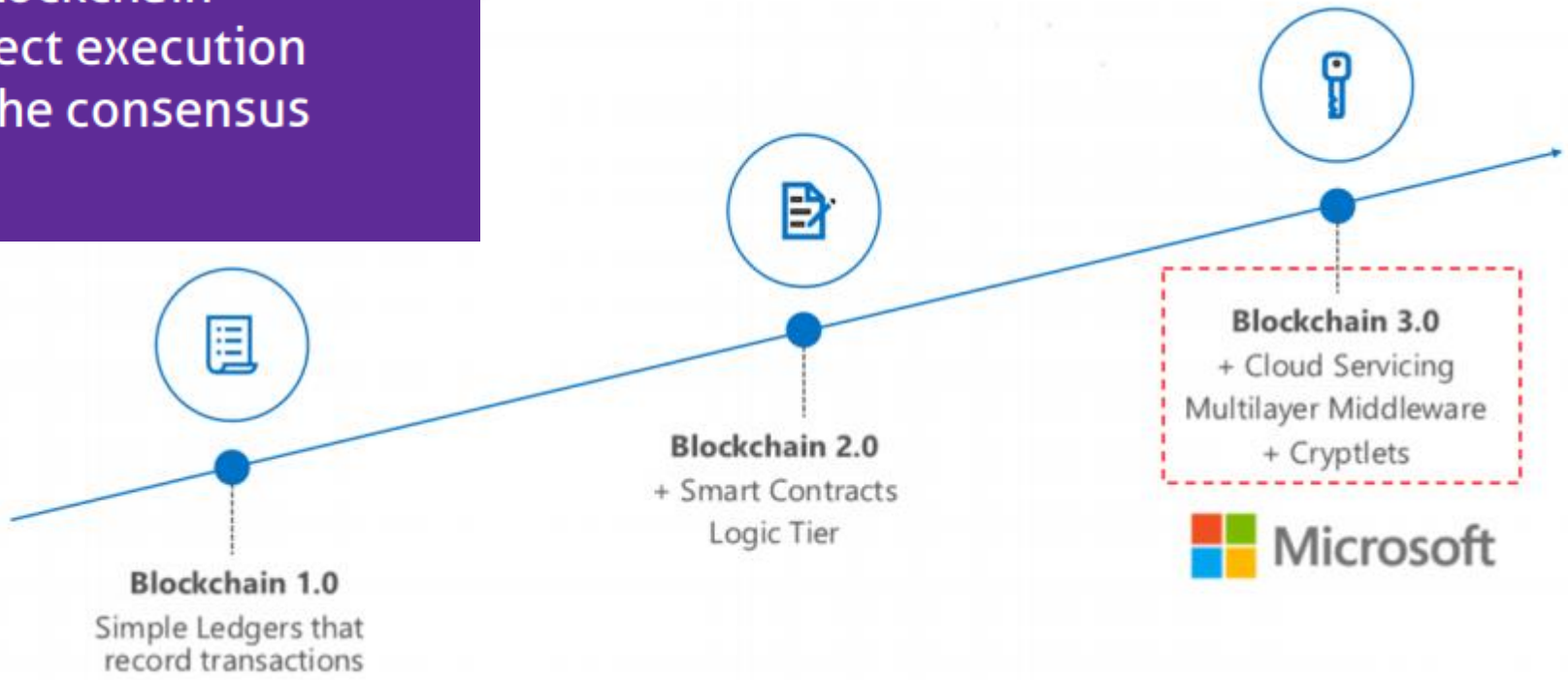
Blockchain is Secure, Shared, distributed ledger

Key Features

Evolution of Blockchain

VALUEMOMENTUM
Deliver Value. Drive Momentum.

"A smart contract is a program that runs on the blockchain and has its correct execution enforced by the consensus protocol"



Cryptlets **will allow the blockchain to access external data securely while maintaining the integrity of the blockchain**

Hyperledger on Azure

Hyperledger

HYPERLEDGER
BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

Hyperledger is an open source collaborative effort created to advance cross-industry blockchain technologies.

THE LINUX FOUNDATION

HYPERLEDGER FABRIC

HYPERLEDGER CELLO

HYPERLEDGER COMPOSER

HYPERLEDGER INDY

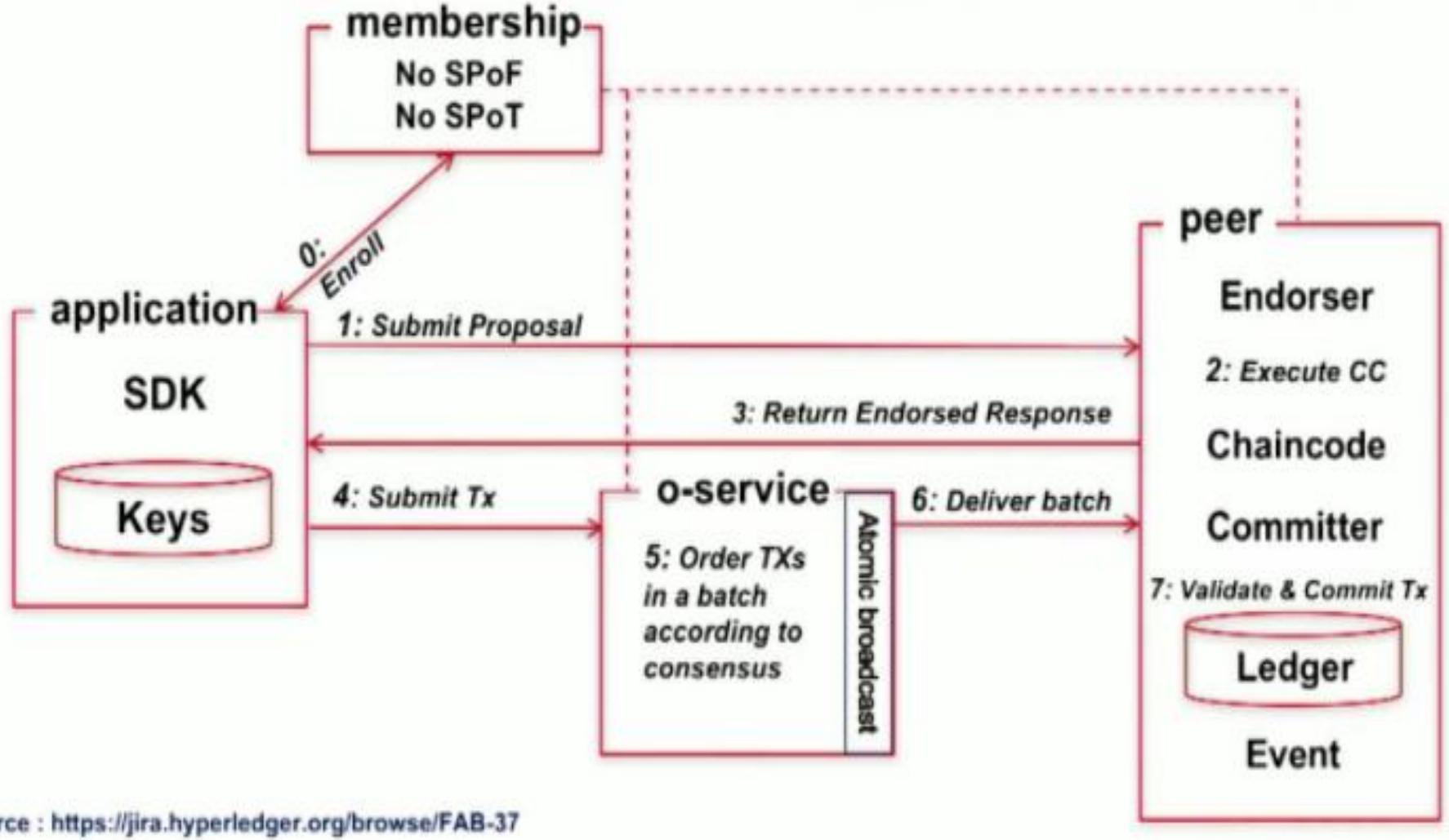
HYPERLEDGER EXPLORER

HYPERLEDGER SAWTOOTH

IROHA

Hyperledger Burrow

Hyperledger Fabric V1 Architecture



Source : https://jira.hyperledger.org/browse/FAB-37

Membership

Runs the membership services

Ordering Service

A node running the communication service that implements a delivery guarantee, such as atomic or total order broadcast.

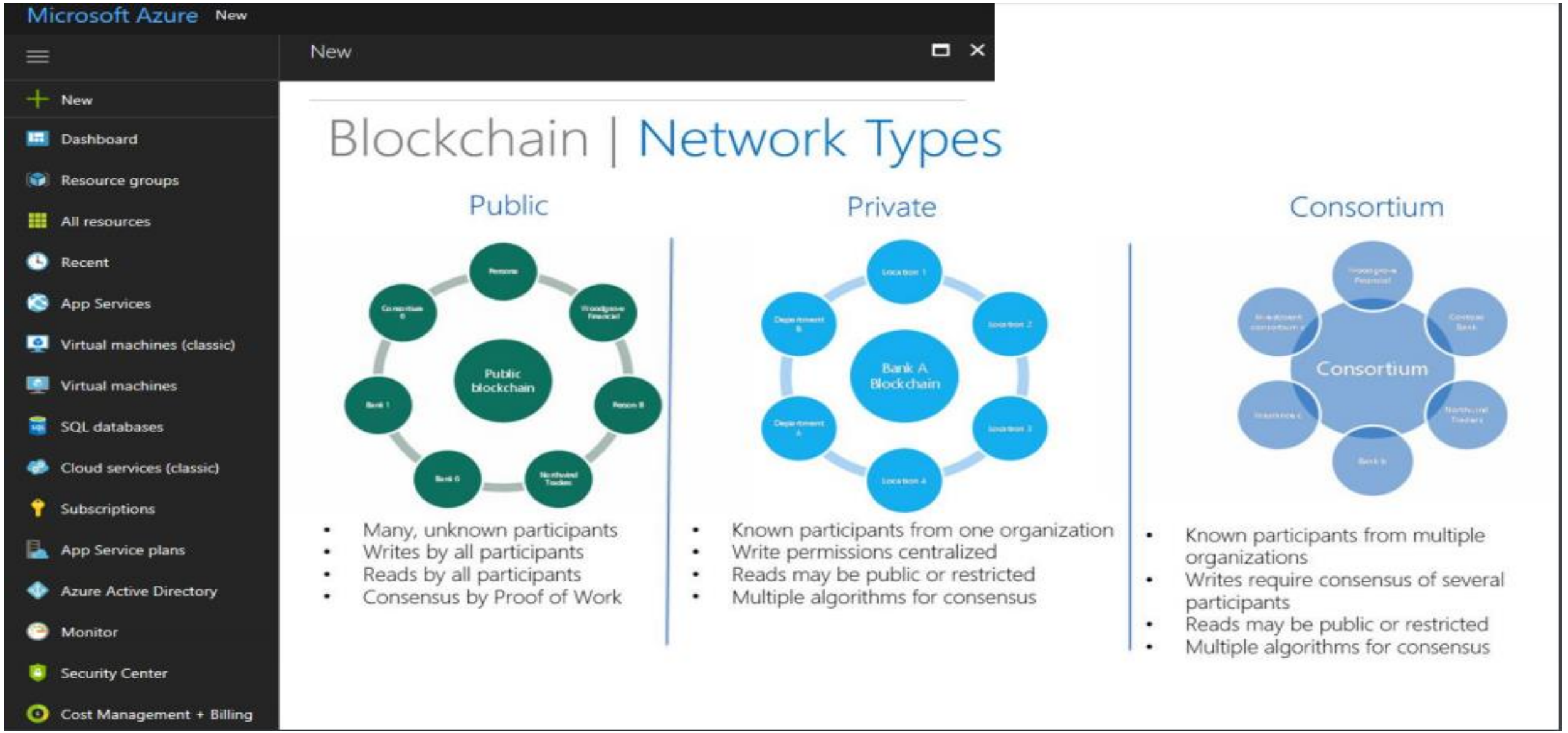
Application

It must connect to a peer for communicating with the blockchain. The client may connect to any peer of its choice. Clients create and thereby invoke transaction

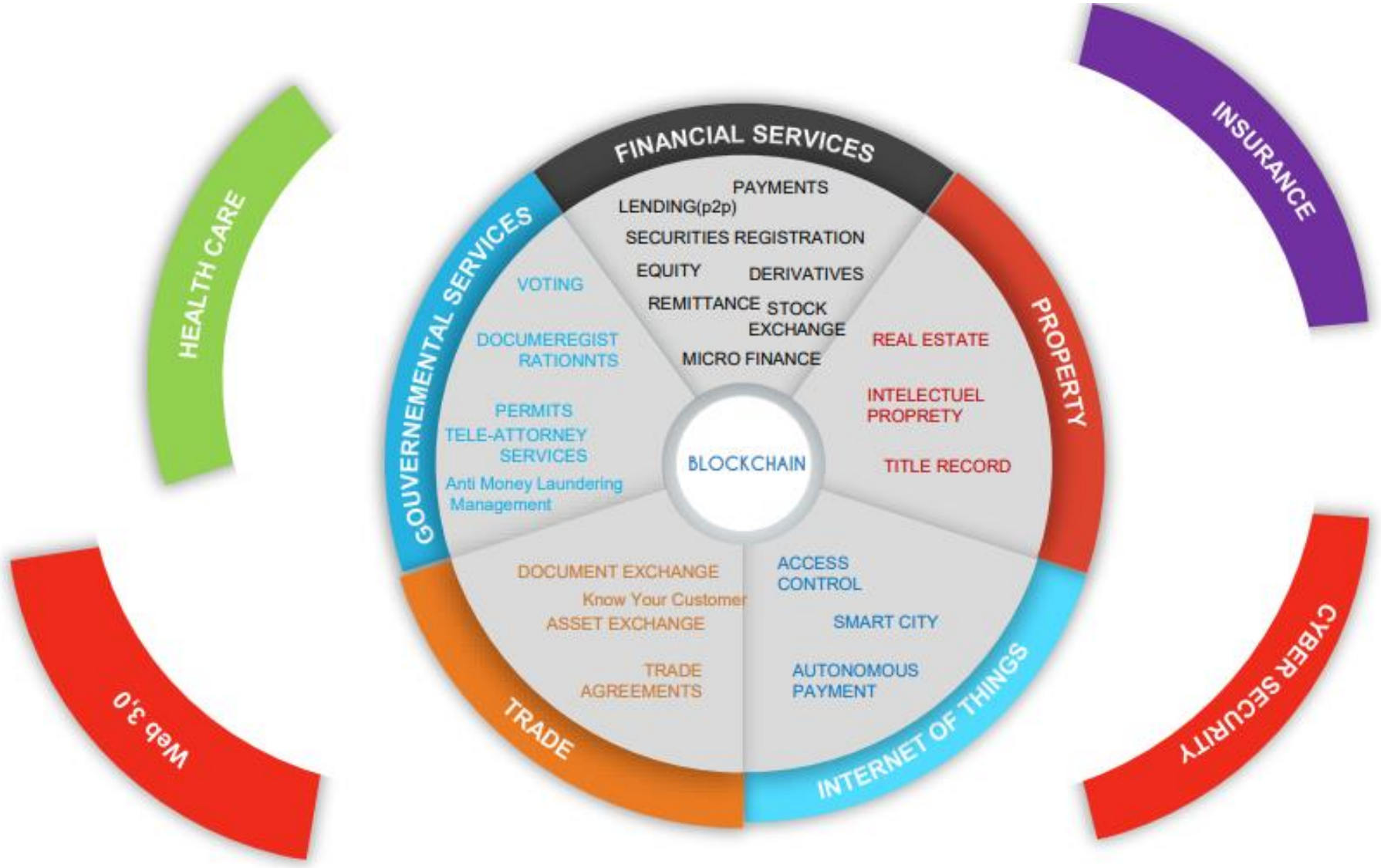
Peer

A node that commits transactions and maintains the state and a copy of the ledger

Network Types



Use-cases



Insurance

- Claims Processing
- IoT Integration for Policy Monitoring
- Claims Data Sharing

Government

- Land Registry
- Vehicle Registry
- Citizen ID
- Education Certification
- Voting

Healthcare

- Medical Records
- Medical Supply chain

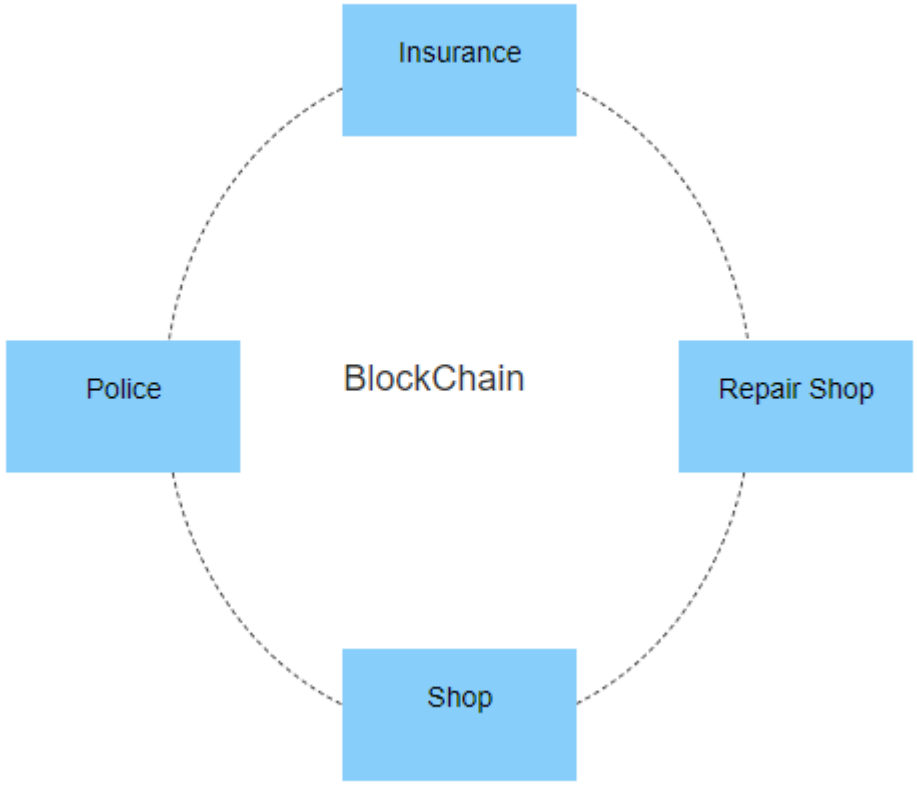
Cross Industry

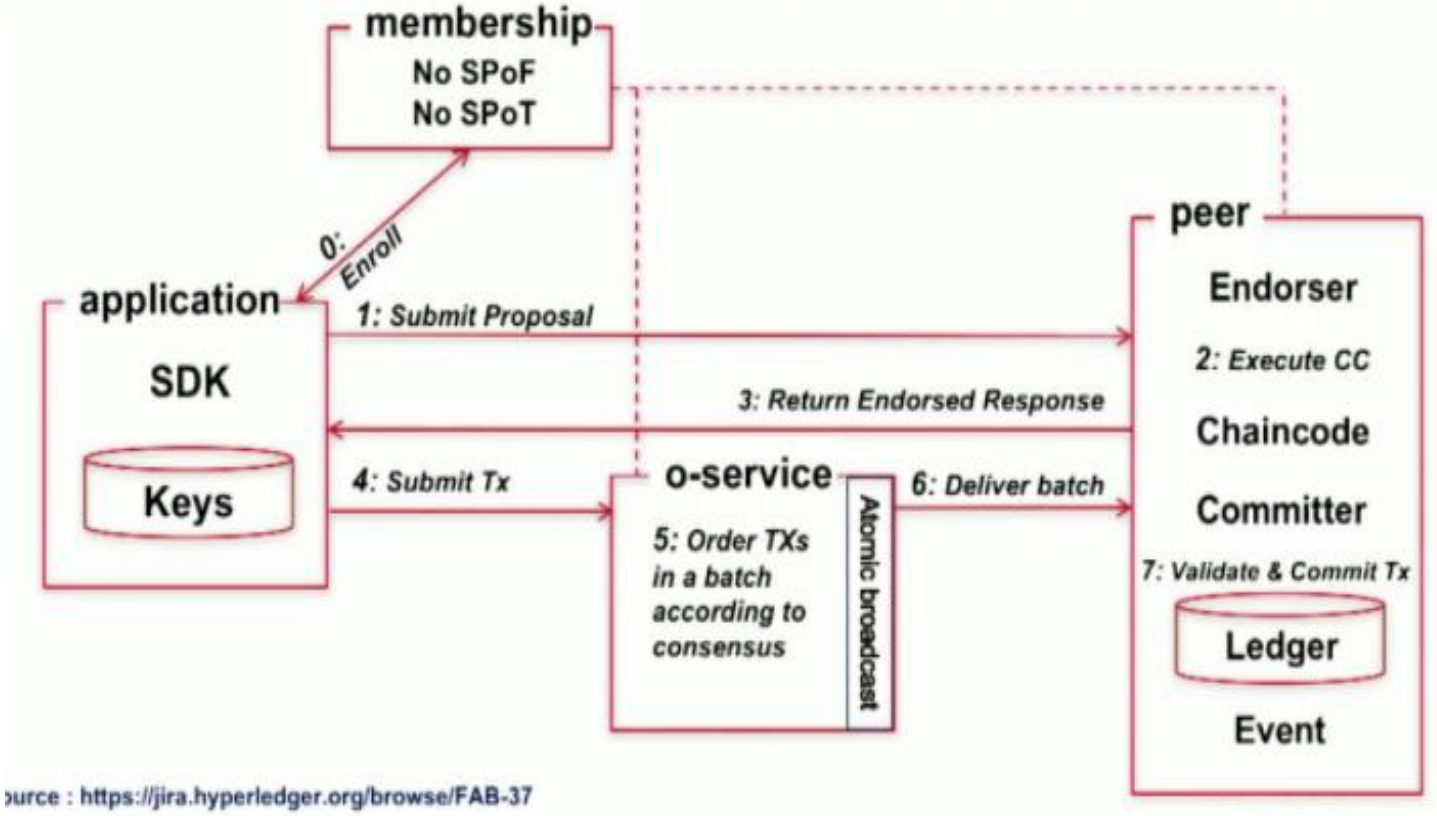
- Shared Reference Data
- Internal financial ledger
- Audit and compliance enablement
- Regulatory View
- IoT Cars, Robots

Demo

Insurance Application on Blockchain

Demo Setup





http://xxx.xxx.xxx.xxx:8088/#/

© 2016 Microsoft Corporation. All rights reserved. Microsoft, Windows, Windows Vista and other product names are or may be registered trademarks and/or trademarks in the U.S. and/or other countries.
The information herein is for informational purposes only and represents the current view of Microsoft Corporation as of the date of this presentation. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information provided after the date of this presentation. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS PRESENTATION.