Beyond the Hype

GROUP

ORACLE

ITOUG
ITALIAN ORACLE USER GROUP

Ledger

Ledger

Centralized Ledger

- One to Many
- Central Autority Behavior
- Central Governance

Ledger

Decentralized Ledger

- Multi-One to Many
- Master–Slave Governance
- Full Database Replication

Ledger

Distributed Ledger

- No Central Autority
- No Central Governance
- No Master-Slave
- Distributed Trust

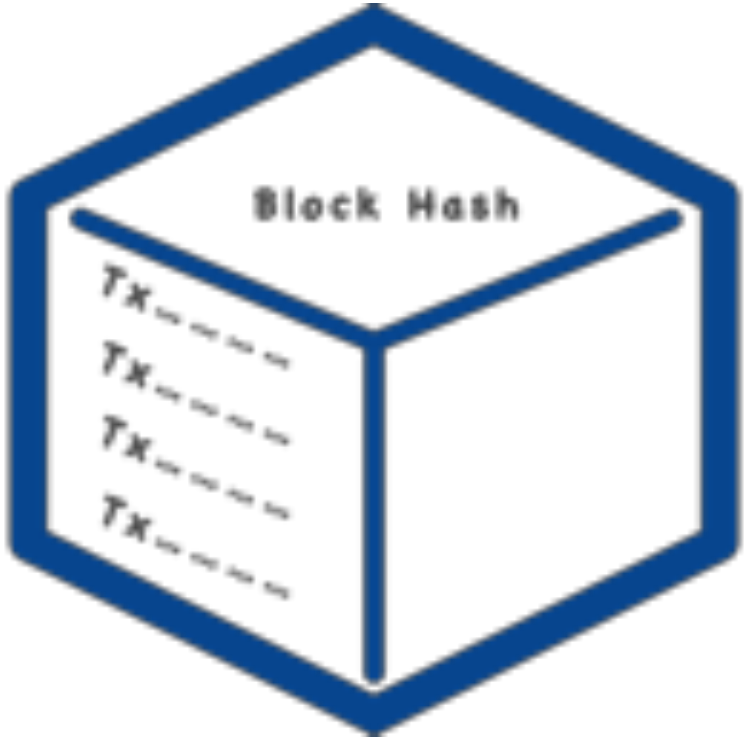
Blockchain Framework

Bitcoin

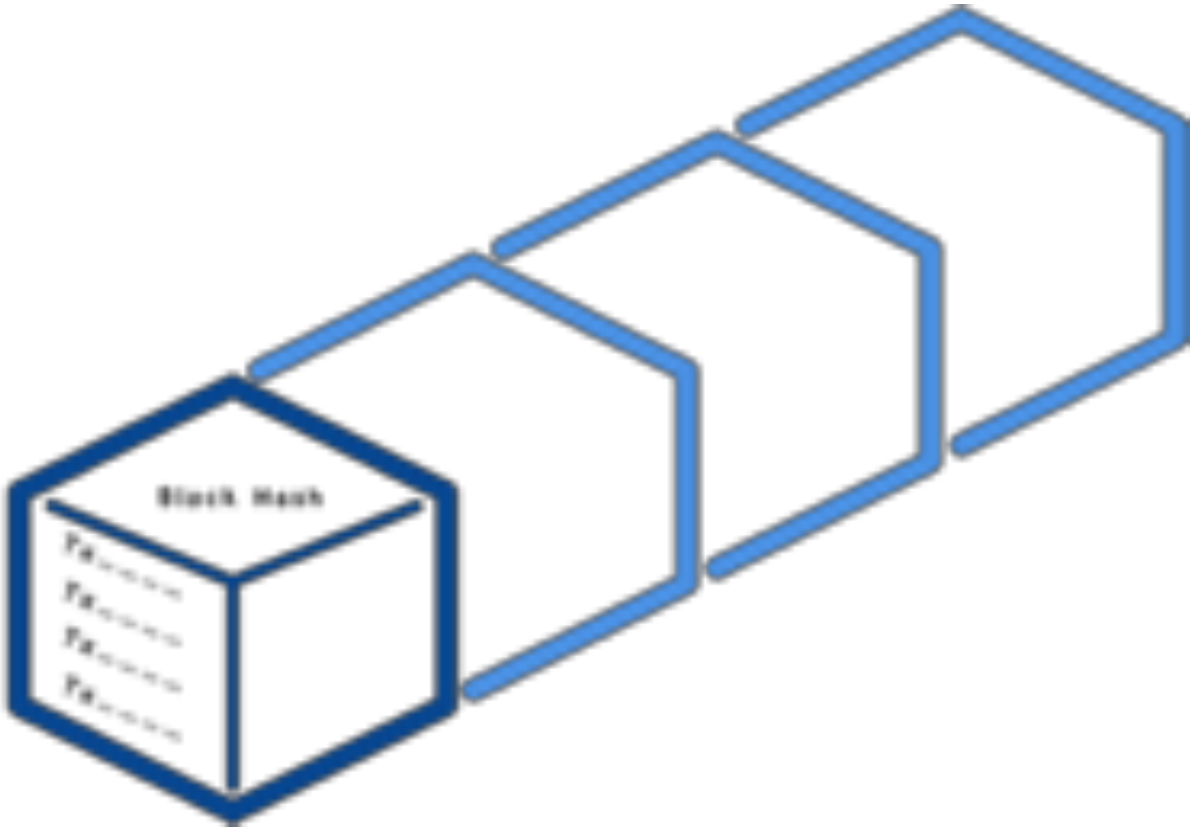
Blockchain: Transaction

Blockchain: Crypto Key

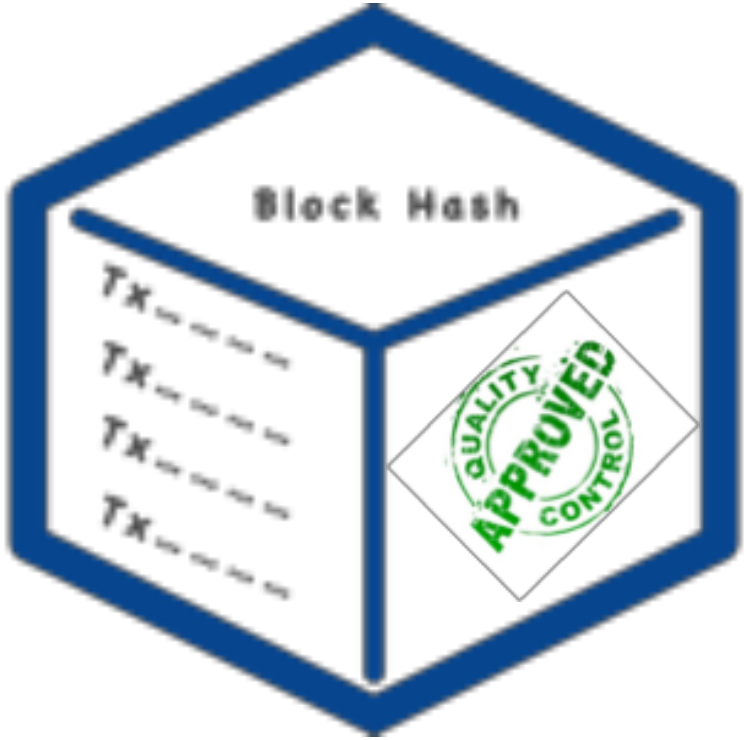
Blockchain: Block Generation



Blockchain



Consensus



Consesus: Miner

- Transactions consolidated in new block by action of particular nodes calling Miners

- Distributed back-office
- Every nodes in network could check and validate Miners action

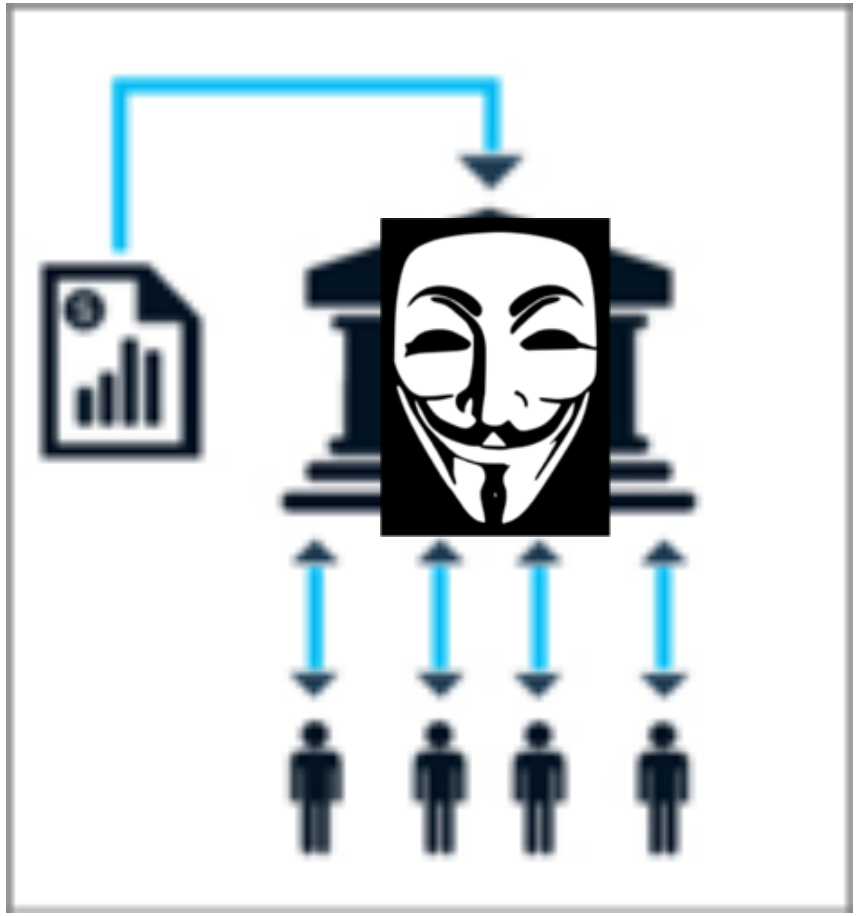
- Miners works by «Consensus» meccanism
- «Malicius Peer Nodes» discovery built-in consensus, pairing Bizantin General Problem

- Honestly of Peer Nodes incetive by «Economic incentive» (Nash game theory)
- The miners are compensated for their consent by demonstrating it with proof-of-work «PoW»

Main Features Blockchain

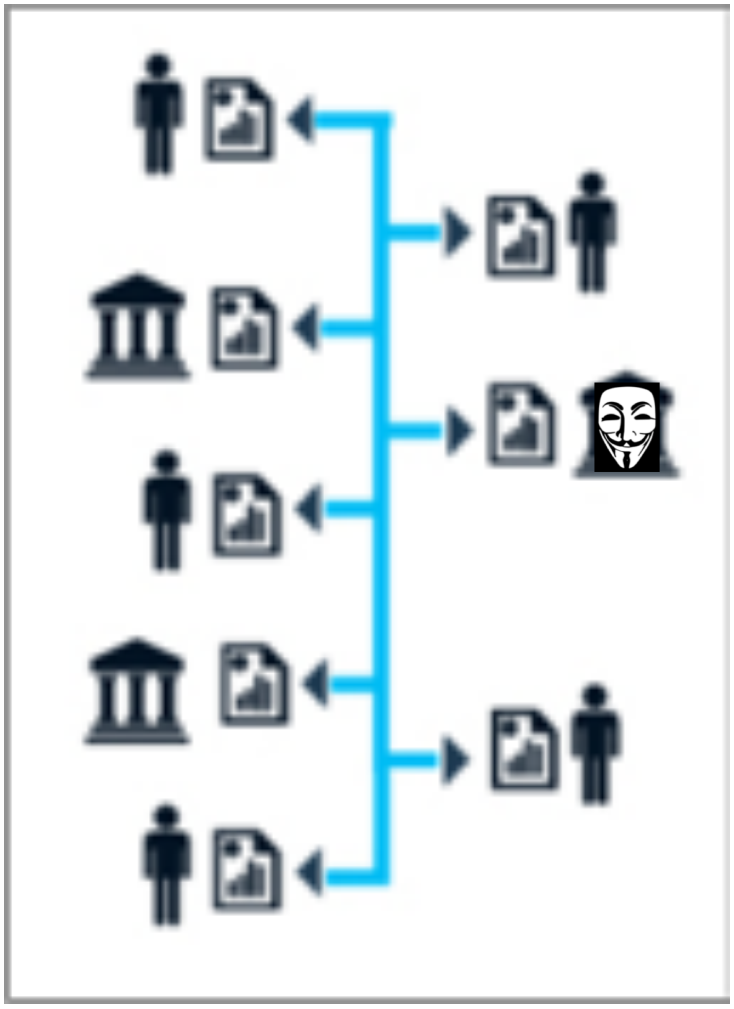
- Reliability
- Transparency
- Solidity
- Irrevocabilit
- Digitality

Risk: Centralized Ledger Technology



- Based on central authorities that determine their authoritativeness.
- The central authorities are the only ones that can guarantee the security and validity of the information.
- A malicious attack that alters the state of central authority allows you to manipulate and manage transactions.

Risk: Distributed Ledger Technology



- It can be Public (permissionless) or Private (Permissioned)
- Observable by various authorized counterparties
- Transactions transparent only to counterparties

Smart Contract

Fonte Wikipedia

«…Contract derives from the Latin *contractus* (past participle of *contrahĕre*, 'to draw together, to bring together', composed by *con-*, derivate from *cum* and *trahĕre*), term that originally in Roman law indicated not a source of obligations but the same mandatory legal relationship arose from a lawful act, as opposed to the relationship obligatory by an unlawful act (*delictum*)….»

Contract of sale of a slave, written on a clay tablet from the Sumerian era dating back to 2600 BC and preserved in the Louvre Museum

Smart Contract

A Smart Contract is a set of 1 or more computer algorithms that allow to perfect the terms of a legal contract. Basically there is no differentiation between the functioning of a smart contract or a purchase contract of material that implements internally automated functions for the improvement of the supply. Ex. Vending Machine, Amazon, etc ...

Use Cases

BANK

INTERNET of THINGS

REPVBBLICA ITALIANA
AG.I.D.
AGENZIA PER L'ITALIA DIGITALE

INDUSTRY 4.0

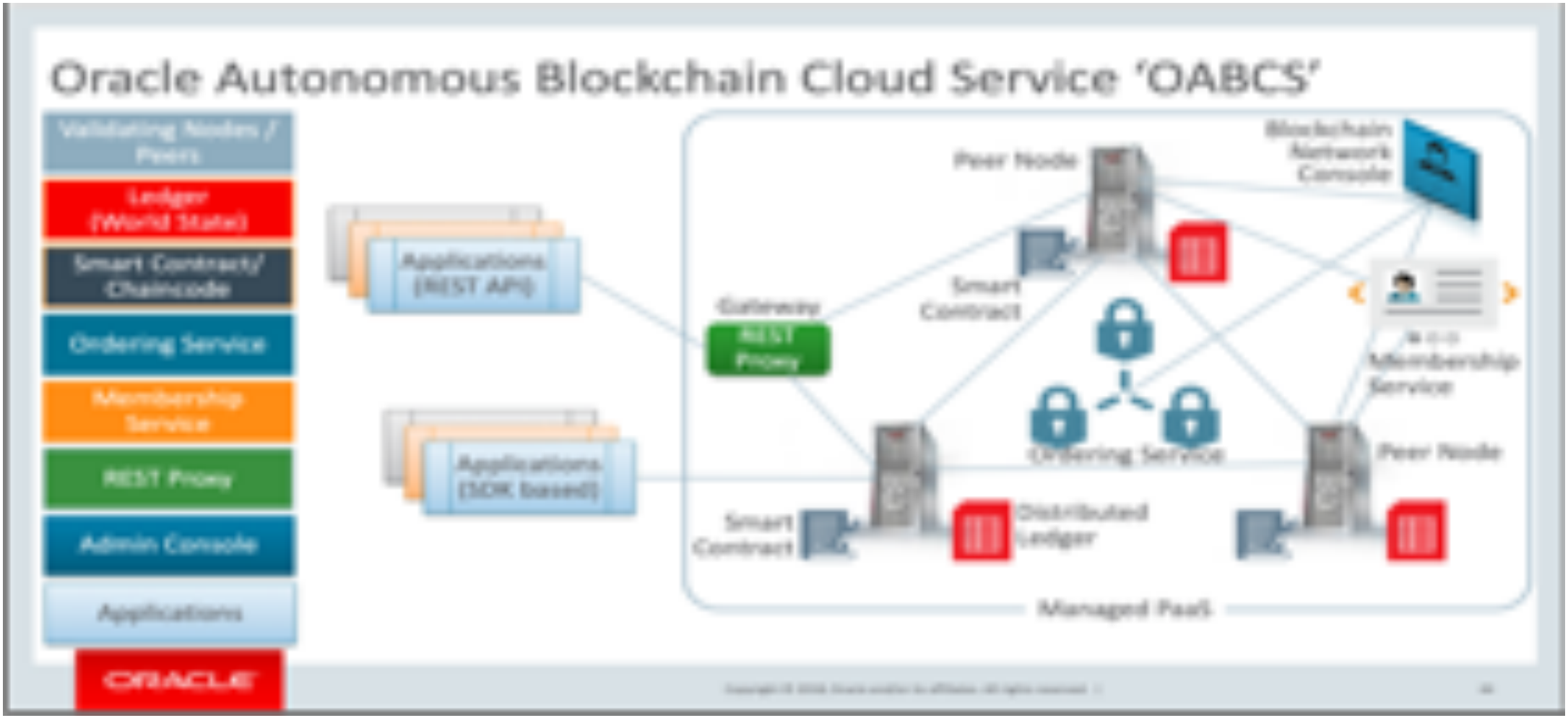
INSURANCE

Blockchain types

Two Types of Blockchain

- Public (a.k.a. "Permissionless")
  - Anyone can join the network and have a copy of the ledger, e.g.: Bitcoin, Ethereum
  - This involves the computer resource intensive mining process to add blocks cryptographically
  - Consensus models based on computationally expensive algorithms requiring the processing power of many nodes to ensure security.
- Permissioned
  - Closed ecosystem: members are invited to join and keep a copy of the ledger
  - Who members are in the real (legal) world is known (to at least the operators of the blockchain, but not necessarily all participants)
  - Consensus protocols depend on knowing who the members are

Oracle Cloud Blockchain



Oracle Cloud Blockchain

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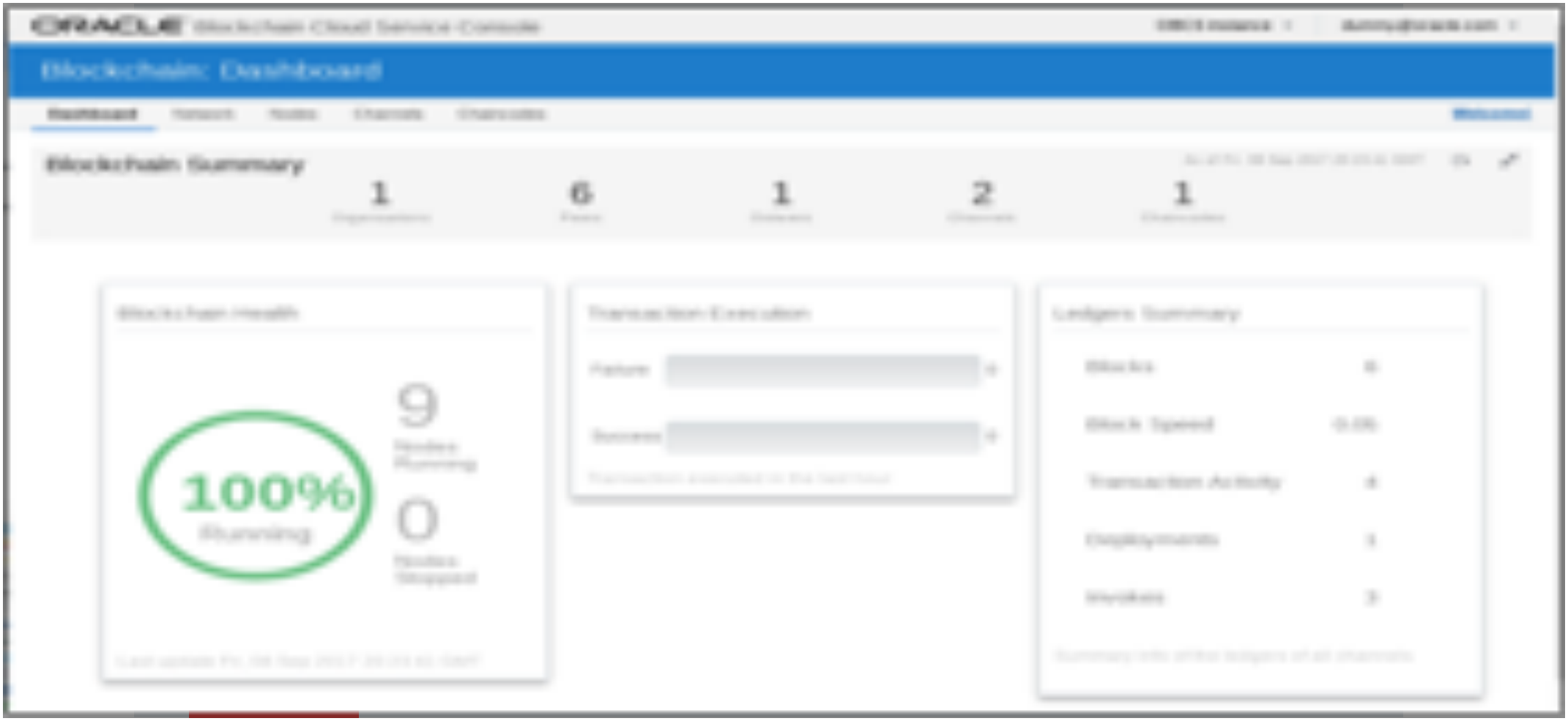


Oracle Blockchain Applications

Intelligent Track and Trace

Monitor transactions and movement of assets or goods across organizations

Shipment Notifications, Bill of Lading, Manufacturing work orders

Lot Lineage and Provenance

Pedigree, Serialization and Genealogy of product components

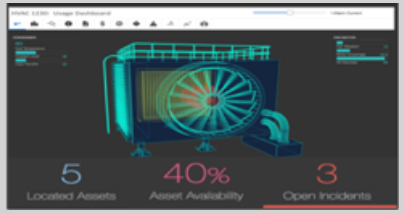
Purchase order, Sales order

Intelligent Cold Chain

Comprehensive Track and Trace system for food and pharmaceuticals safety

Service records, Warranty information

Warranty and Usage Tracking



Product usage tracking for Rental, Warranty, Service, & Insurance for high-value assets

Assets, Equipment and cargo conditions, Predictive Insights

SMART CONTRACTS, DISTRIBUTED LEDGER ON BLOCKCHAIN PLATFORM

SOURCES OF INPUT

Supply Chain

ERP

Customer Experience

Internet of Things

ORACLE

Blockchain Beer

Blockchain Beer

Blockchain Beer

Question and Answer

TOGETHER WE BUILD THE FUTURE
GROUP
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