

APRIL 2019

THE WHY AND WHAT OF BLOCKCHAIN

CHAITANYA PATHAK - FOUNDER - IBLOCKLABS
AND GOHARNESS



Who Am I

- Computer Science and Management Graduate
- 15 + Years of Experience in the Software Development Industry As
 - » Coder
 - » Solution Architect
 - » Product Manager
 - » Entrepreneur



This is what I hear ?

Its the Next Internet

One of the top 3 Disruptive
Technologies – PWC

Blockchain will do for
transactions what the internet
did for information
– IBM CEO

Blockchain will enable the
next
industrial revolution
– Wall Street



Whats common in these Scenarios



Transporting food items

Buying Insurance

Visiting a Doctor

Earning money by musicians

Buying a Real estate

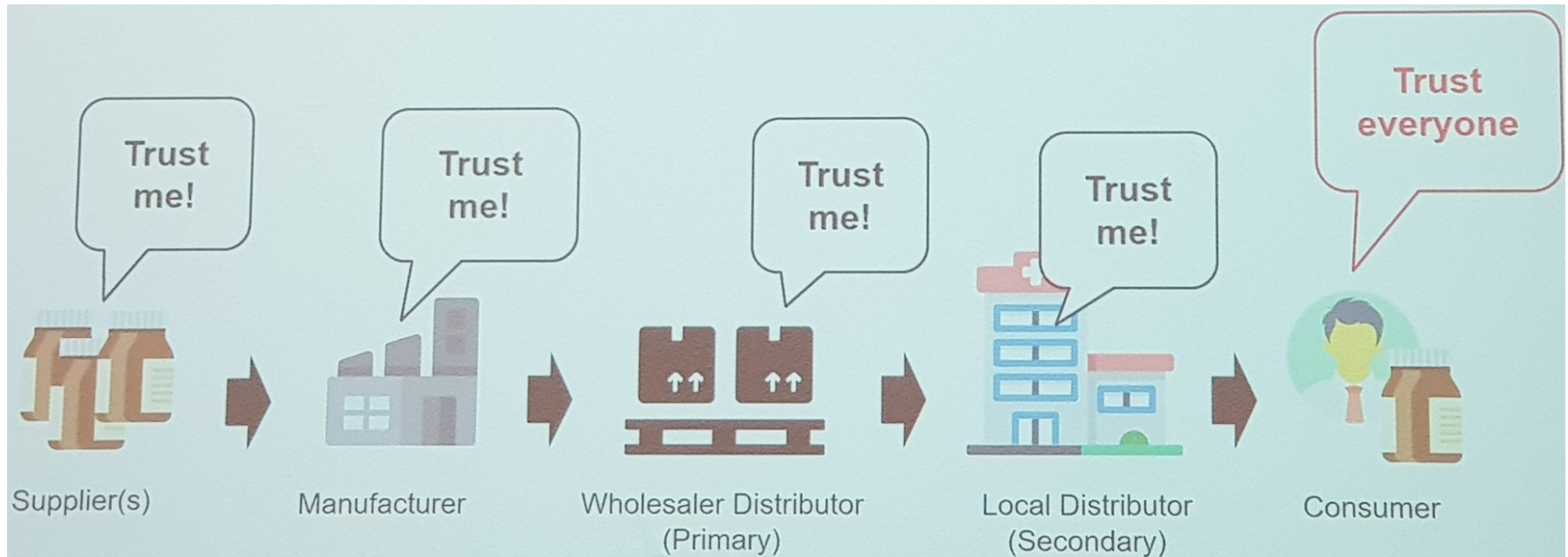
Buying a used car

Asset

Trust

Multiple Parties

Trust in Supply Chain



Provenance



Recall

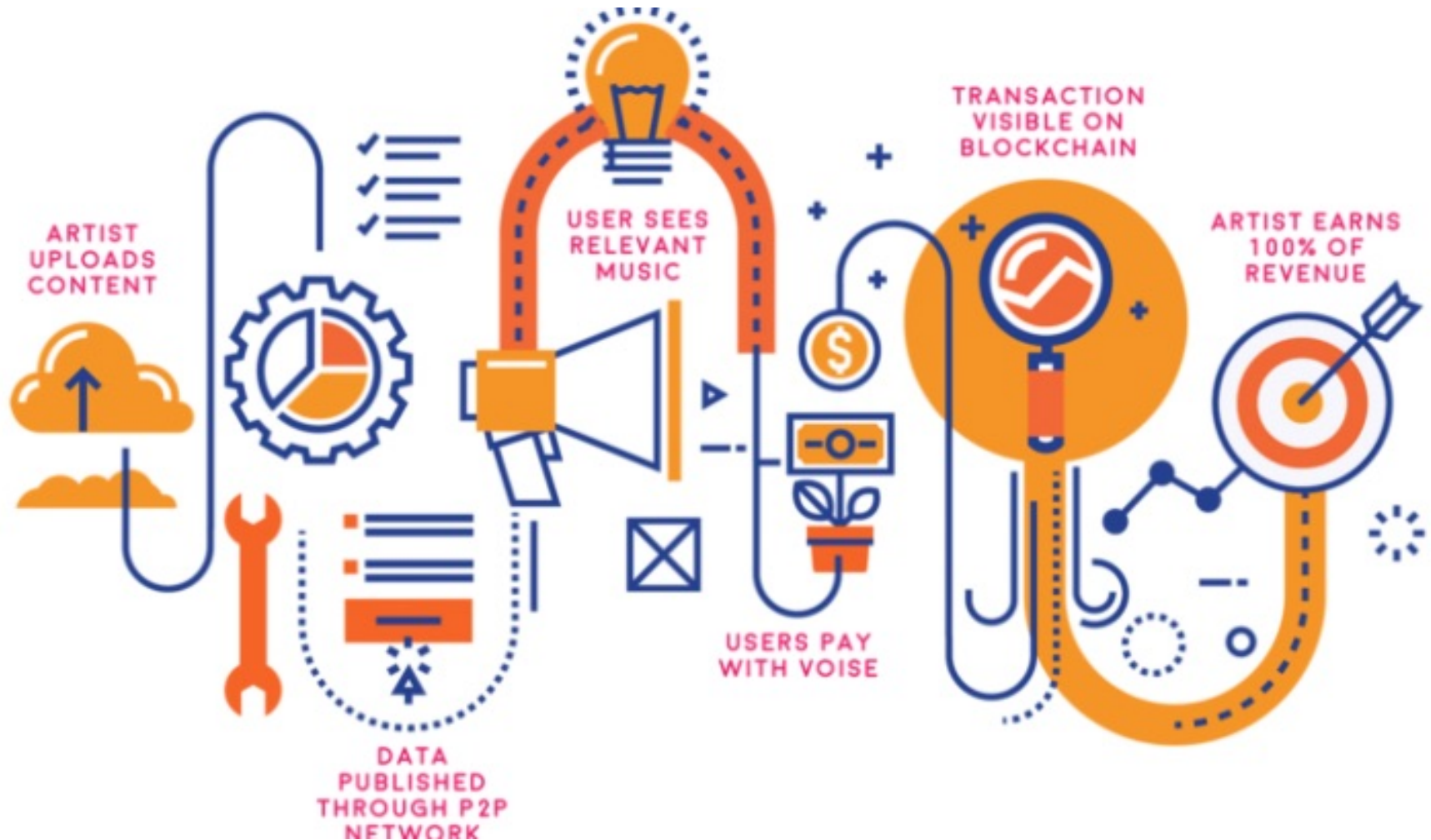


Agreements/Contracts

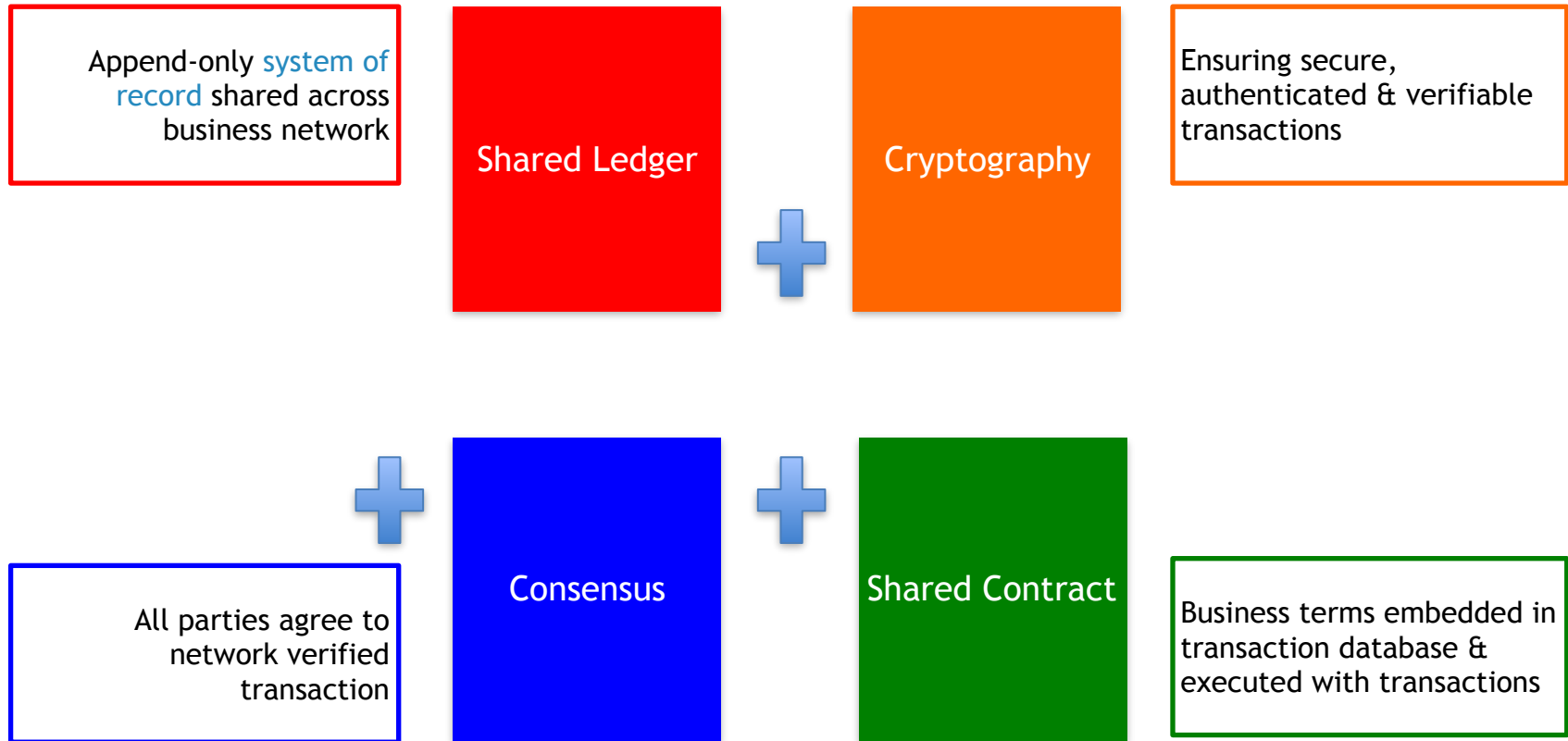


Real Time

Peer to Peer for Artist








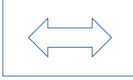


Blockchain in a nutshell



Evolutionary Software Architecture

Blockchain Components

Ledger		contains the current world state of the ledger and a Blockchain of transaction invocations
Smart Contract		encapsulates business network transactions in code. transaction invocations result in gets and sets of ledger state
Consensus Network		a collection of network data and processing peers forming a Blockchain network. Responsible for maintaining a consistently replicated ledger
Membership		manages identity and transaction certificates, as well as other aspects of permissioned access
Events		creates notifications of significant operations on the Blockchain (e.g. a new block), as well as notifications related to smart contracts. Does not include event distribution.
Systems Management		provides the ability to create, change and monitor Blockchain components
Wallet		securely manages a user's security credentials
Systems Integration		responsible for integrating Blockchain bi-directionally with external systems. Not part of Blockchain, but used with it.

Evolving Blockchain Frameworks

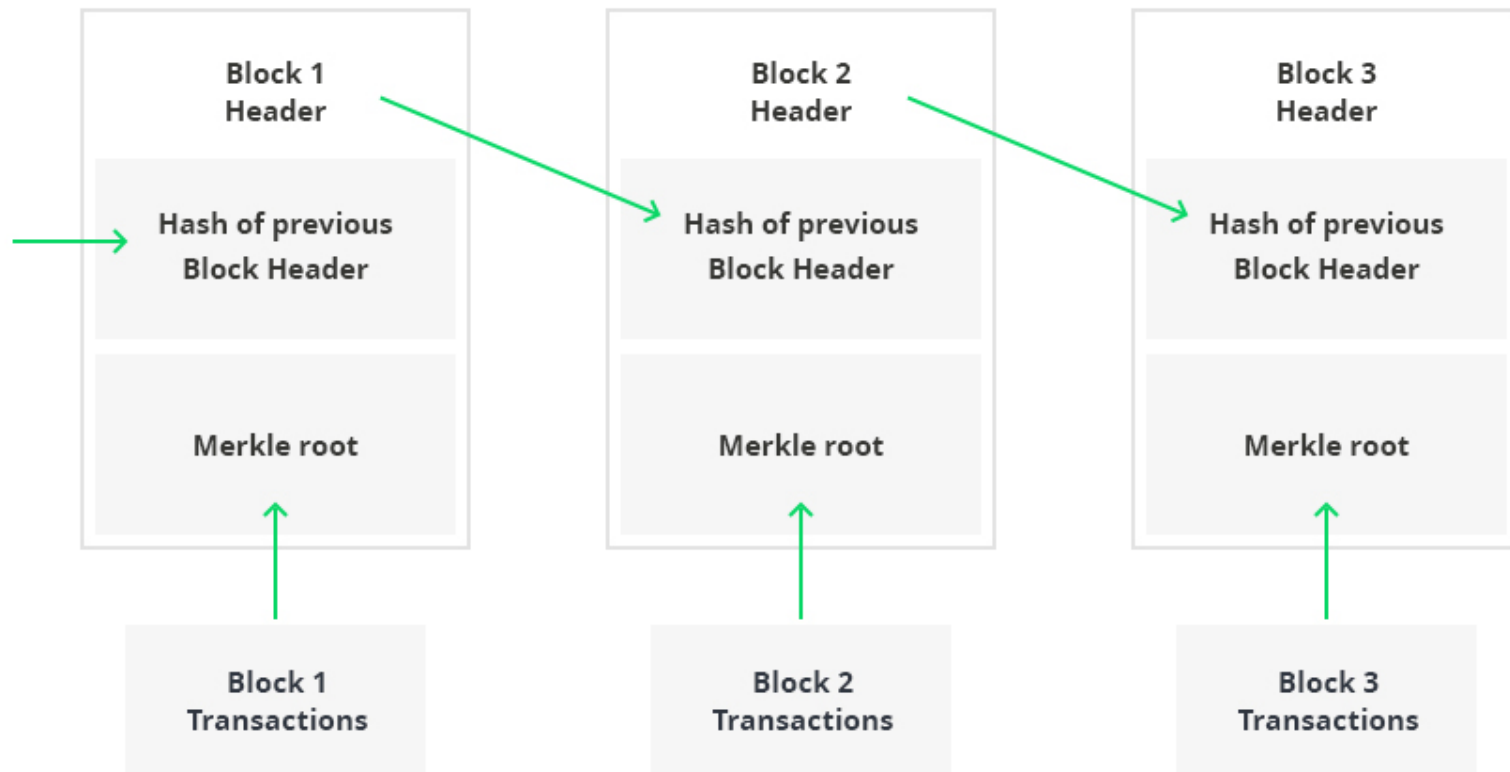
- **1st** generation: Store and transfer of value e.g. Bitcoin, Ripple, Dash)
- **2nd** generation: Programmable via smart contracts (E.g. Ethereum)
- **3rd** generation: Enterprise blockchains (E.g. Hyperledger, R3 Corda & Ethereum Quorum)
- **4th** Generation : Highly scalable with high concurrency (E.g. RChain)



Lets Unchain

Blockchain is a chain of Blocks

Hashed data



Assets



Real Estate

Absence of approval and sale provenance of land/real estate can lead to long validation lead times during sale or invalid double-sales.



Education

Diploma validation takes weeks/months impacting individuals, schools and corporations with both admissions and recruitment.



Oil & Gas

Lost and untraced samples impact important business decisions and lead to costly fines for non-compliance.



Transportation

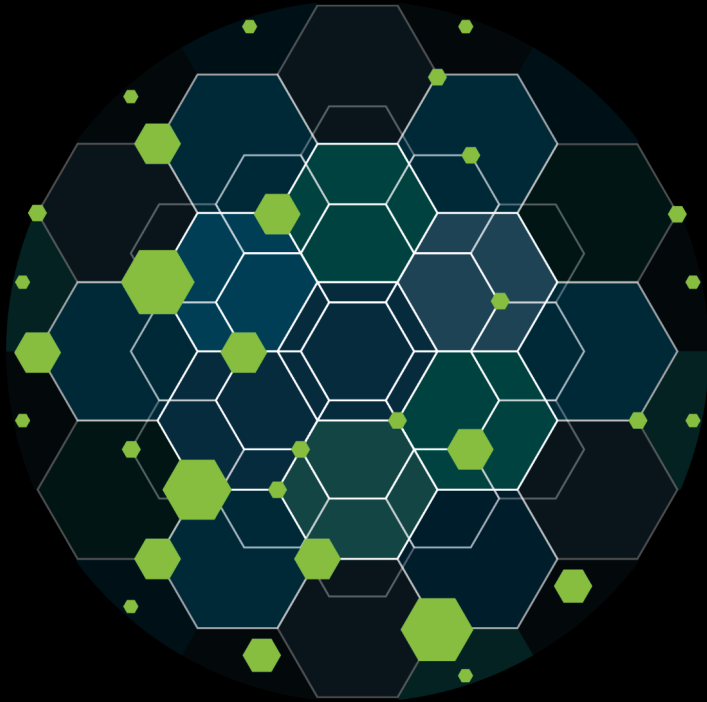
Capture and reliably track vehicle telematics to unlock new business value for used car sales or inform insurance pricing and rental car management.



Healthcare

Lack of vaccine provenance and administration records impact patients, donors, social workers and manufacturers.

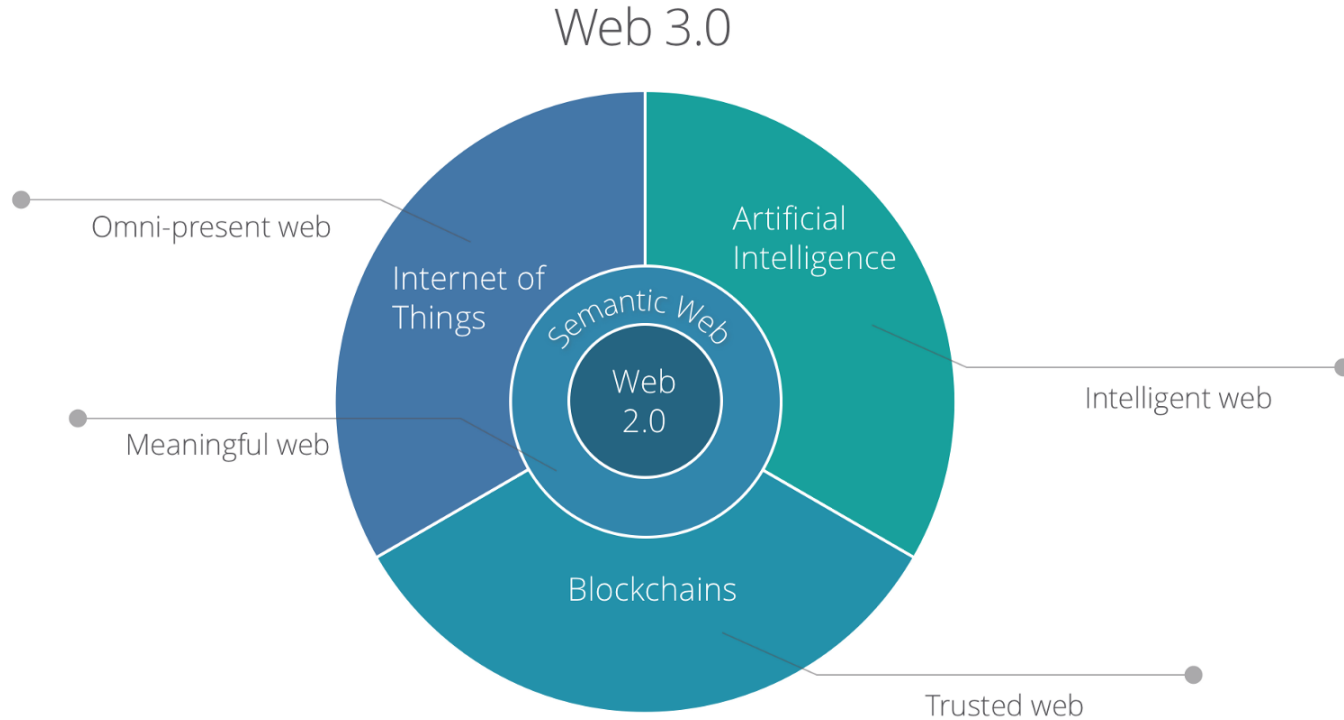
Assessing blockchain opportunities



Business blockchains can operate as standalone solutions, but the value realized increases significantly when they're combined with other technologies, such as automation or artificial intelligence, to reimagine an entire end-to-end process.



Convergence is the future

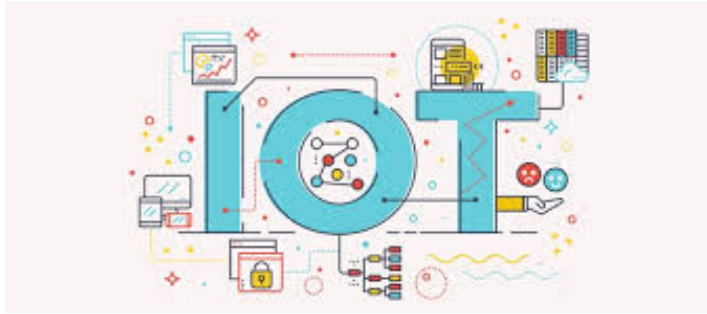






Some Important Definitions

IOT



IoT is a network of interrelated devices accessed through the internet, allowing their data collection, remote monitoring and control. By using IOT Platforms to authenticate, authorize and gather data generated by devices, this technology enables the transformation of IoT into a network of interconnected devices which can interact without human intervention. By creating a two-way communications layer, devices can exchange messages directly on blockchain, meaning all communication happens in real time, directly machine-to-machine, with no intermediary. This way, the risk of internet devices, applications and platforms being compromised is significantly reduced.

Digital Identity



Blockchain solves the issue of digital identity management by giving users more control over their personal information and businesses less worry about managing it. At its core, the solution allows people to have control over their personal data management when identifying anywhere online.

Decentralized blockchain principle and distributed storage with identity verification (KYC), allowing users to assign permissions for who and when can access their digital identity data

Data Storage



Across business lines, all connected devices require management, storage and retrieval of enormous amount of data. Today, corporations rely on the dedicated server infrastructure and cloud solutions, which leads to a worrying combination of commercial dependency on enormous volumes of data being centralized. Decentralized storage works by distributing and encrypting data across a network of nodes, making it safer, immutable and protected, promising a fundamental change in how businesses can protect their most valuable data and optimize their running costs.

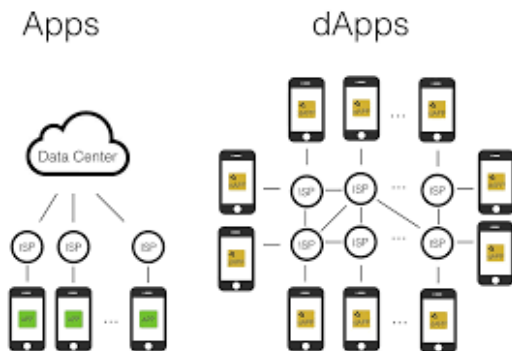
Smart Contract



Smart contract is a term describing software on blockchain that stores contract terms in digital format between two or more parties. By containing a set of predefined rules, smart contract is a self-executing immutable code that can automatically enforce when certain conditions are met. It has the ability to cut off the middlemen and replace standardized processes that burden the administration costs of organizations. We provide the framework for developing custom smart contracts, their integration with existing software and an audit service for your proprietary codes

Dapps

dApps are a form of application framework, helping end-users to easily interact with smart contracts. They operate autonomously, with data cryptographically stored in blockchain and can remodel the backend structure of various digital products, services and platforms. The majority of dApps run on Ethereum, meaning they're directly competing with other dApps and financial transactions for resources. In contrast, running dApps brings many advantages to business logic, as the code and data on permissioned ledger are completely independent and the parameters customizable, opening enterprises new opportunities for highly-scalable non-fee market operations



Tokennomics



Tokenomics is a new skill, required to create the token ecosystem in which the token usage, together with your token supply and demand are defined. We help you design, generate and manage a custom-build token that will drive your business endeavors and allow to easy share and exchange value. Residing on top of blockchain architecture, your custom enterprise token can represent basically any assets that are fungible and tradeable. Optional integration of existing payment gateways is also possible