Possibilities of Blockchain Technology

Presenter(s): Rishi Cherukuri

Event Organizers

dbentrum Community

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Tech Mahindra

Agenda

- ❑Why Blockchain
- ❑Understanding Distributed Ledgers
- ❑Differentiating Crypto currencies from Blockchain
- ❑Types of Distributed Ledgers
- ❑Popular platforms for Distributed Ledgers
- ❑When not to use a Distributed Ledger
- ❑Future of Blockchain eco-system
- ❑DEMO : Learn Blockchain by building one

Why Blockchain aka Distributed Ledgers

Find questions that seem familiar to you

- Is the person above 21 years?
- Is this person who he says he is?
- Is this food produce genuinely organic?
- Does this person genuinely have 14 years experience?
- How can I execute stock trade in minutes?
- Did my vaccine stay in the temperature range?
- Does this land belong to this person?

Evolution of Communication and Decision Making

Pre-Internet Era | Internet Era | Peer-to-peer Systems | Blockchain | IOT + Blockchain

Human to human
Fixed Telephony, Telegram and Face to Face etc.

Highly Time Consuming Communication

Delayed Decision Making

Evolution of Communication and Decision Making

Pre-Internet Era | **Internet Era** | Peer-to-peer Systems | Blockchain | IOT + Blockchain

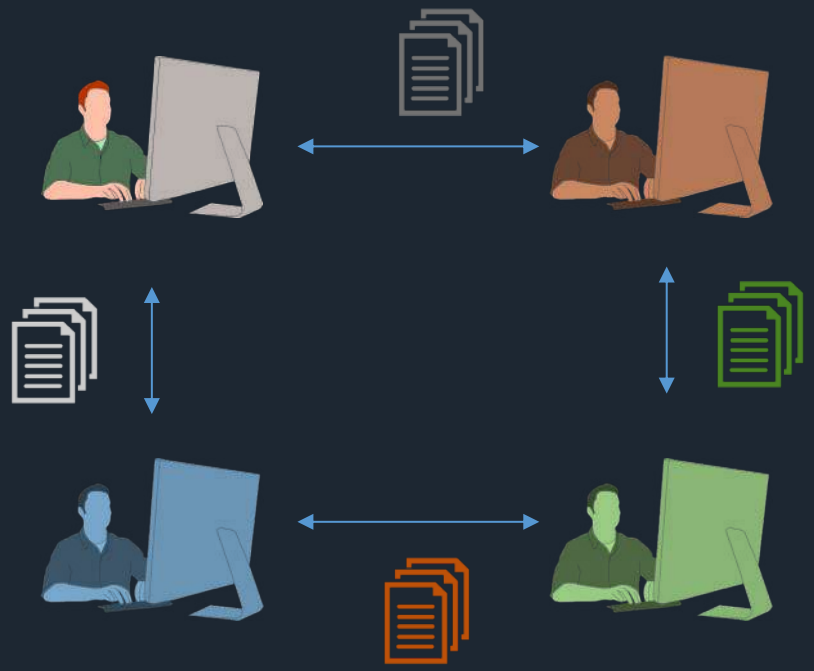
World Wide Web
TCP/IP Protocol, Emailing, Client-server Architecture

Single point of failure

Trust Deficit

Evolution of Communication and Decision Making

Pre-Internet Era | Internet Era | **Peer-to-peer Systems** | Blockchain | IOT + Blockchain

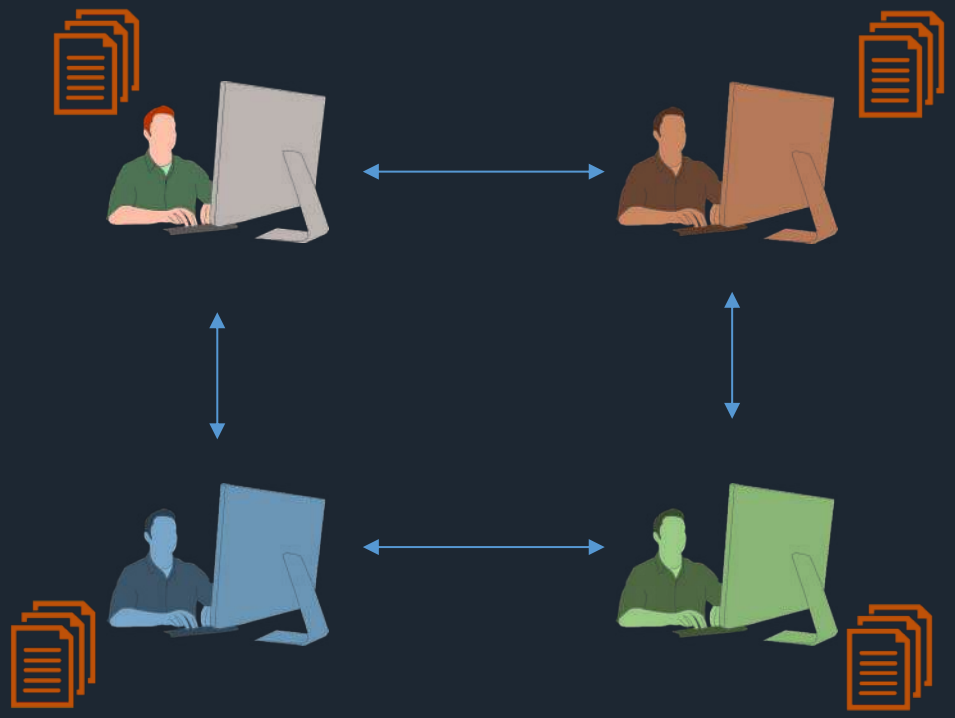


Decentralization
Peer-to-peer text, music and file sharing networks

Trust Deficit

Evolution of Communication and Decision Making

Pre-Internet Era | Internet Era | Peer-to-peer Systems | **Blockchain** | IOT + Blockchain



Decentralization
Sharing of asset over distributed network, no centralize authority

Cost and Efforts in the form of Mining

Scalability

Evolution of Communication and Decision Making

Pre-Internet Era

Internet Era

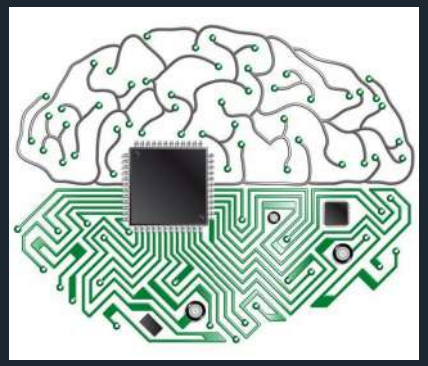
Peer-to-peer Systems

Blockchain

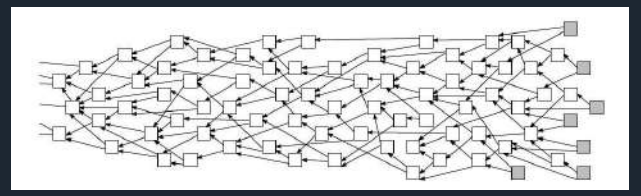
IOT + AI/ML Blockchain

Decentralization + Automation
Block-less, Graph based Distributed Ledger

Data



Insights



Storage

Blockchain is Blind!

- As data becomes the new oil , trust in data is depleting
- Manual data entry is prone to collusion leading to mistrust
- So we need mechanisms that can help increase this trust in data, the saviours of such situations are:
  - Distributed Ledger Technology
  - Internet of Things
  - Machine Learning & Computer Vision

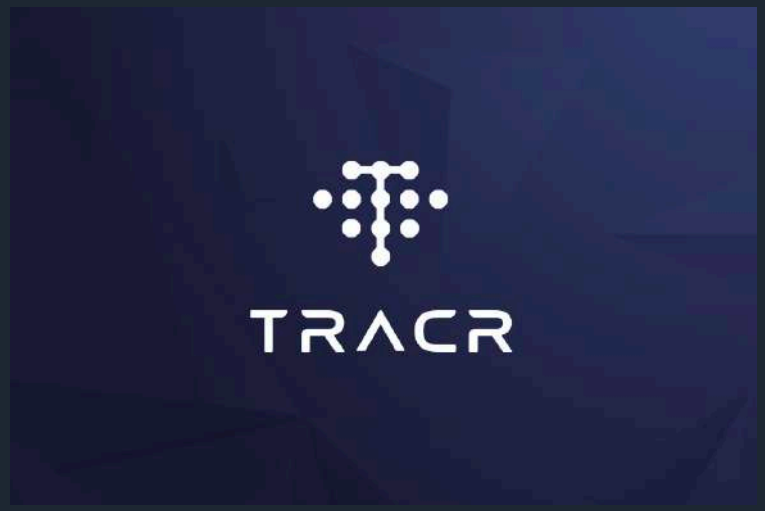
Prominent Implementations of Blockchain

From Farm to Blockchain: Walmart Tracks Its Lettuce
The giant retailer will begin requiring lettuce and spinach suppliers to contribute to a blockchain database that can rapidly pinpoint contamination.
100+ farms that supply Walmart with leafy green vegetables will be required to input detailed information about their food

TradeLens by Maersk : helps customers, shipping lines, freight forwarders, port authorities and customs authorities manage and track the paper trail by digitizing the supply chain process from end to end., 100+ companies, and authorities, such as Procter & Gamble and U.S. Customs and Border Protection, are part of this

JPMorgan's Interbank Information Network (IIN), which is a blockchain-powered network that aims to speed up cross-border payments between 75+ global financial institutions.
IIN's developers are hoping it will be the eventual successor to SWIFT as it will facilitate international money transfers by decreasing the amount of time it now takes to resolve regulatory or other data-related delays.

OnGoing Implementations of Blockchain

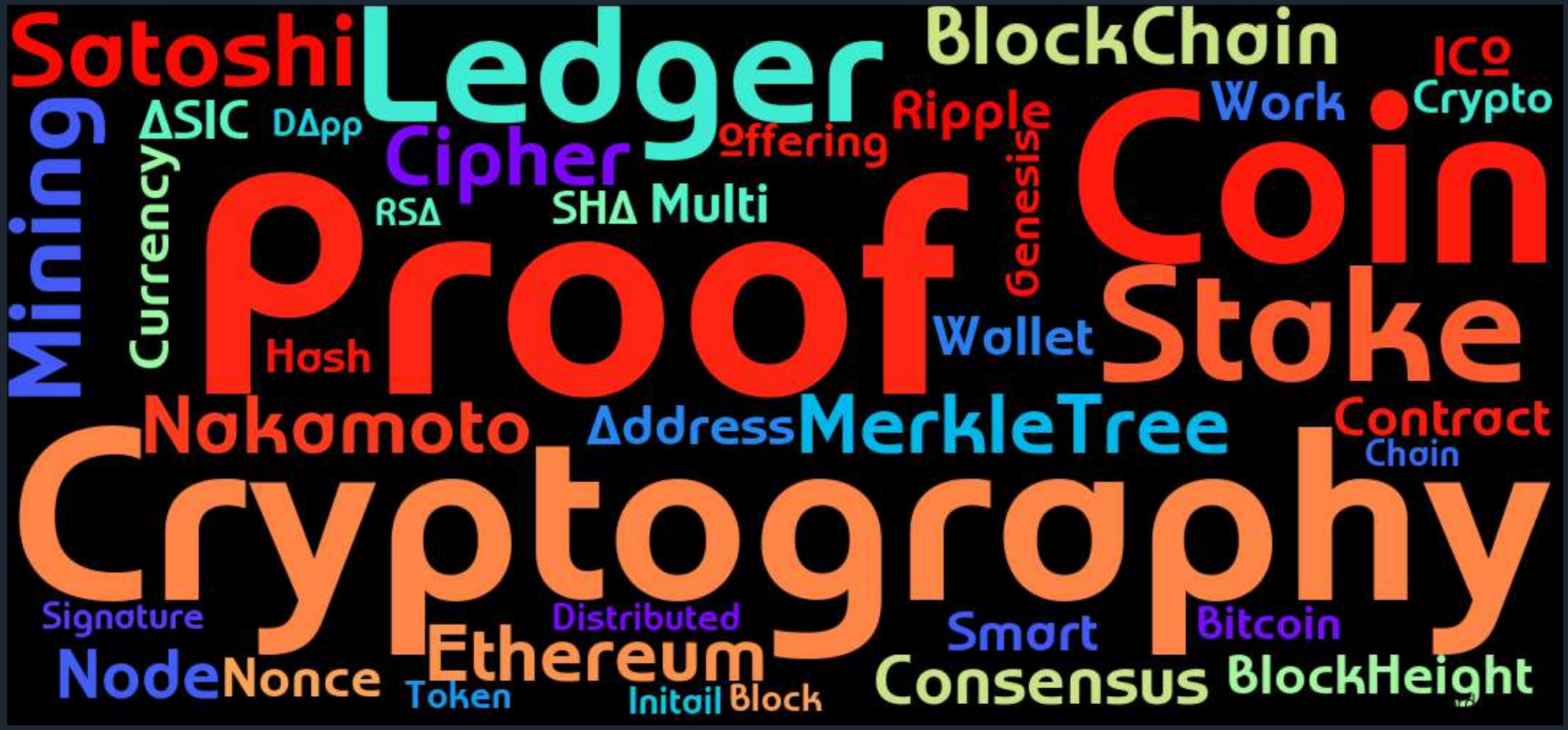


Tracr is the brainchild of long-time diamond industry giant De Beers group, The system, which will track diamonds from the moment they’re mined, through the value chain, and into the hands of consumers, is aimed at curbing some disturbing issues in what many believe to be the oldest luxury business in the world.

Switzerland's principal stock exchange : SIX Swiss Exchange, has revealed the company is working on its own digital tokens as part of its forthcoming blockchain-powered digital exchange.

Warsaw-based Alior announced that it is beginning to offer a feature that will allow customers to check on the authentication and integrity of official documents they receive using the public ethereum blockchain that supports the ether cryptocurrency valued at more than $27 billion.

Lets see if you have heard or used these before?

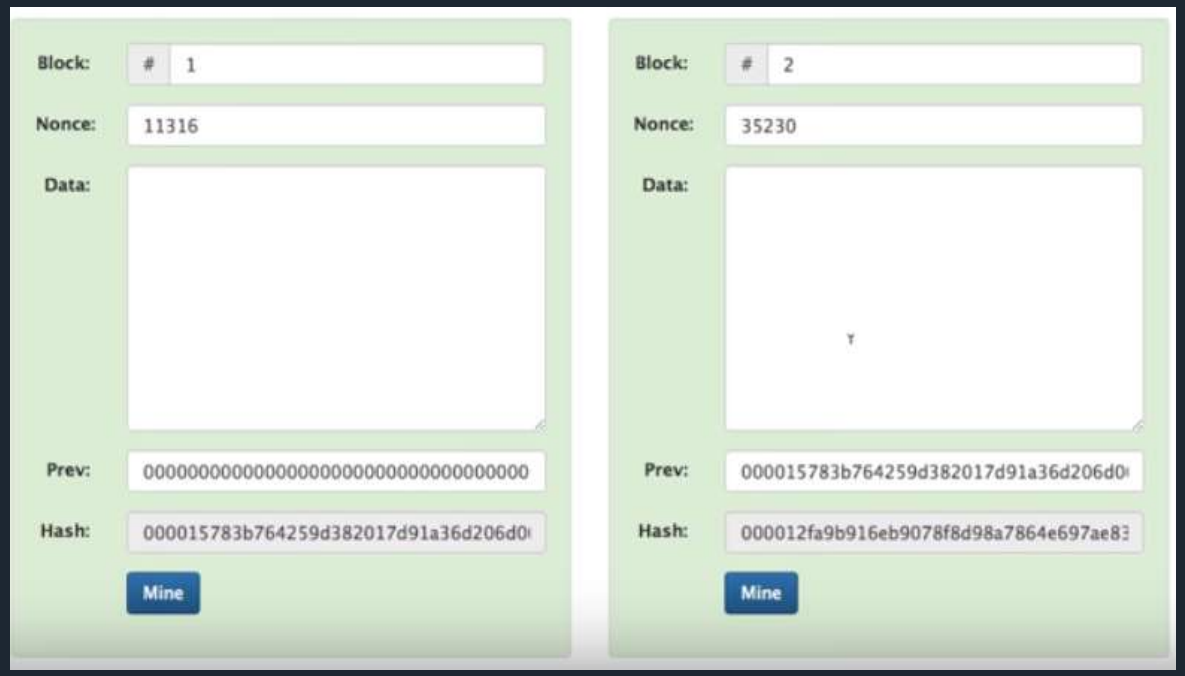


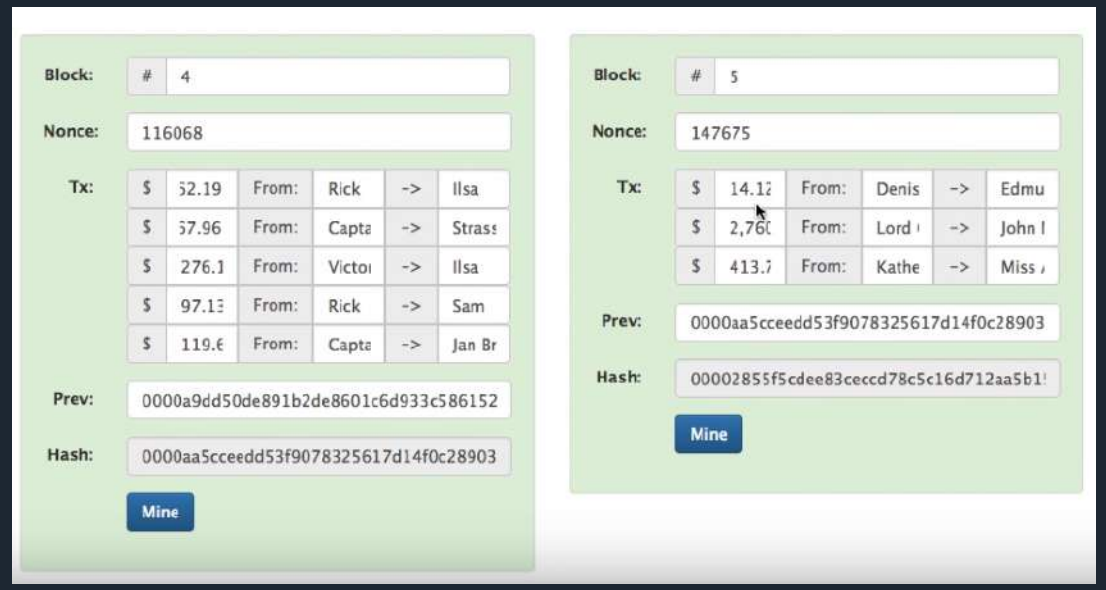
#Hashing

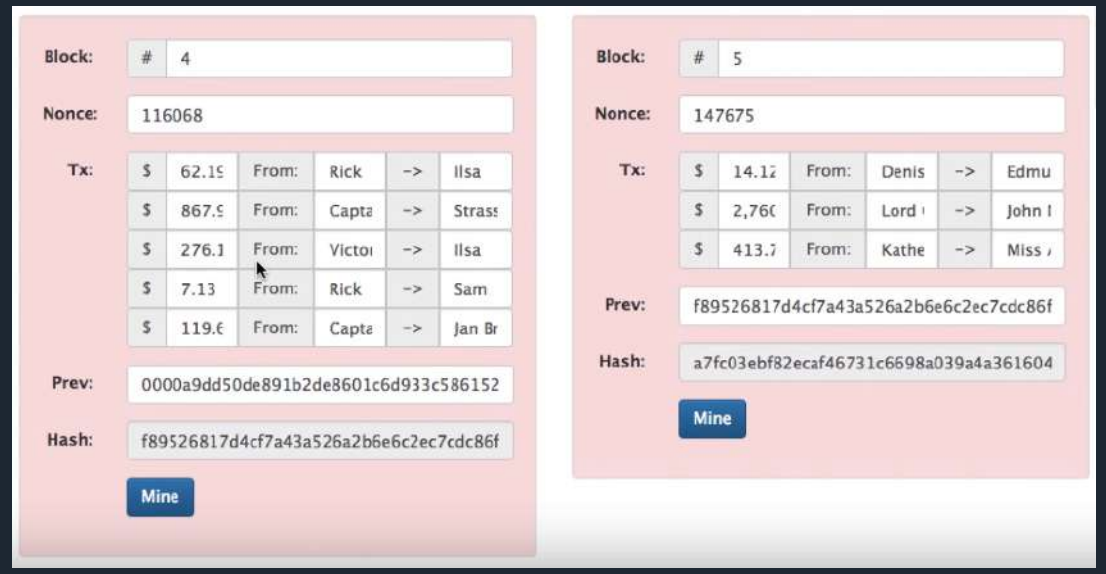
#Public Key Encryption

Variable size input → Hashing function f(x) → fixed size output

Concepts to understand behind Blockchain?

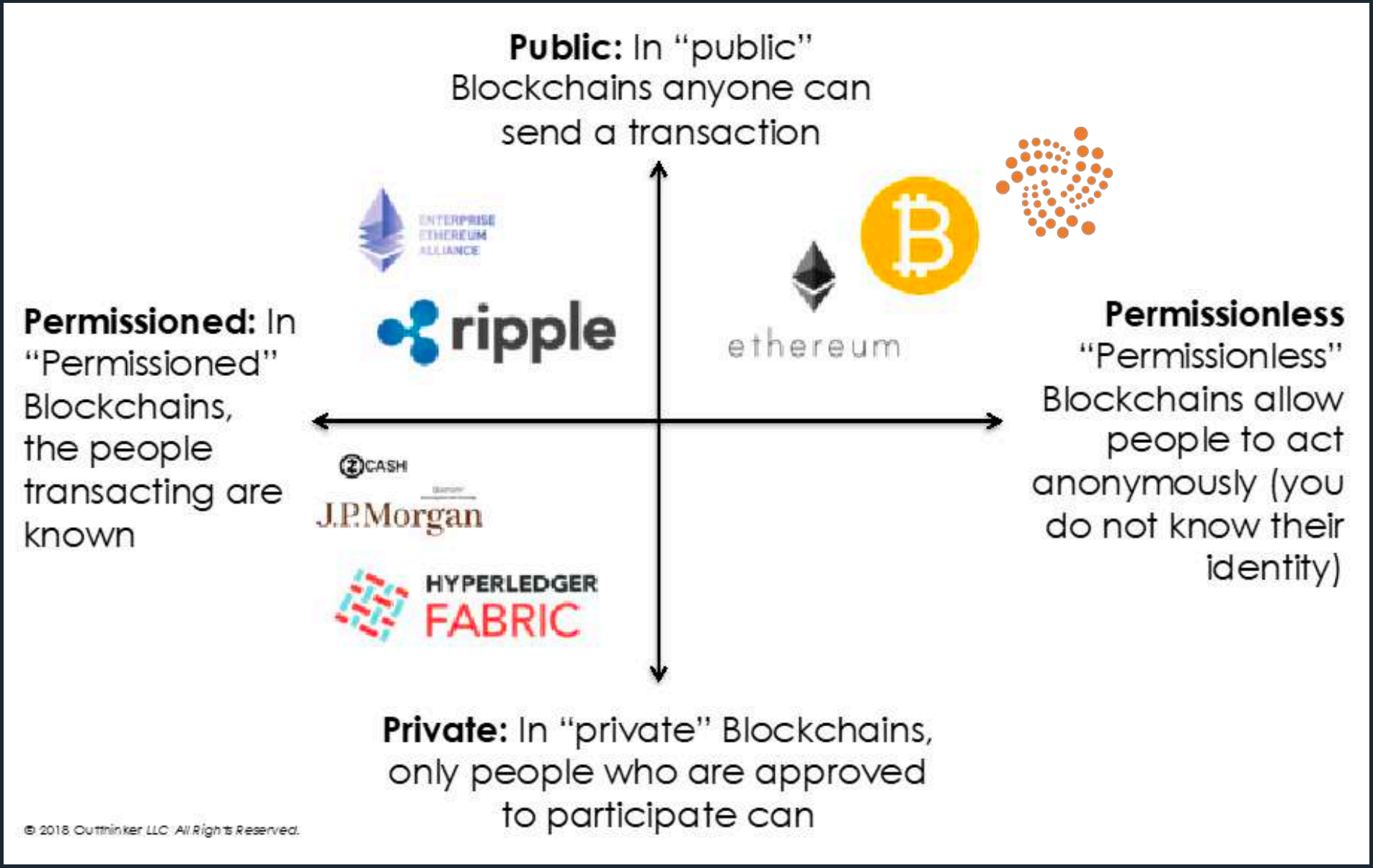






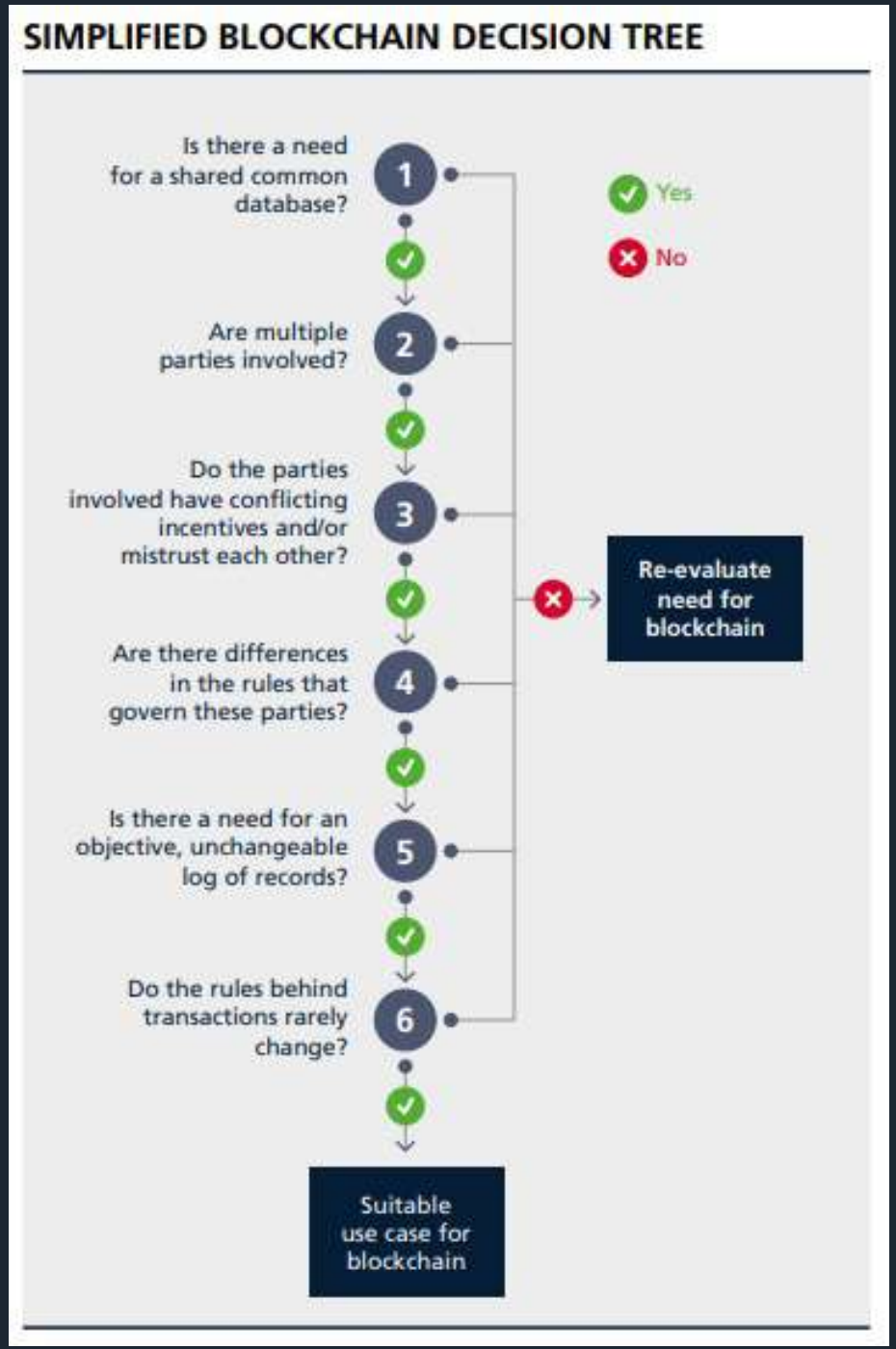
- ❑ Distributed
- ❑ Genesis Block
- ❑ Signing + Hashing + Encryption
- ❑ Provenance
- ❑ Consensus (Proof of Work, Proof of Stake

Types of Distributed Ledgers

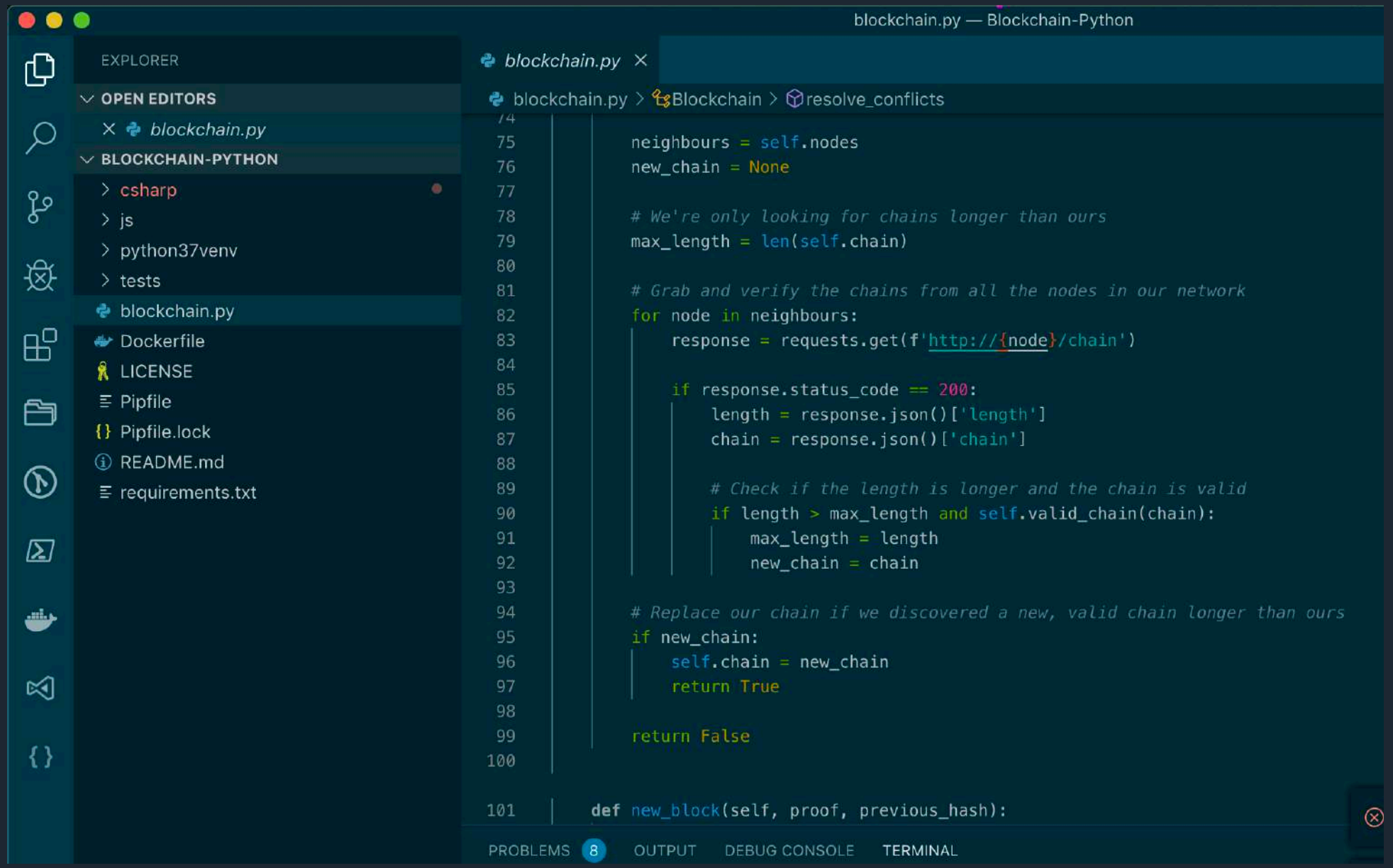


When not to use Blockchain?

- Blockchain is not a silver bullet
- Do not decide to implement Blockchain first and then think about a business solution!
- Business problem comes first



DEMO : Learn Blockchain by building one



About DCentrum

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MEMBERS

15

EVENTS

3

TECHNOLOGIES

7

USECASES

Our founding members

Deepak Bhattad

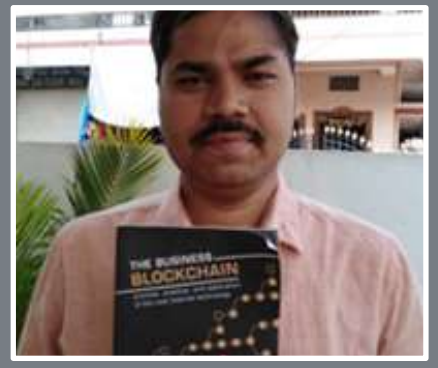
Dharmen Dhulla

Mahesh Wankhade

Mohit Bathla

Rishi Cherukuri

Sam Naidu



Sreenivas Chinni

DCentrum's 4-month Blockchain co-learning series:

IOTA

Join to experience perfect way to learn and solve real world problems using IOTA Tangle with a group of highly motivated Decentralization enthusiasts

registration

http://bit.ly/IOTAHydMeetups

** Venue will be announced via Slack and confirmations after curation based on responses on above form

Hyderabad, India

Meeting Frequency
Bi-Weekly

Total Series Duration
3 Months

23 March 2019 – 6 July 2019

First thru Third Meetings:

- ✓ **Level Setting**
- ✓ **Foundation**
- ✓ **Concepts**

During initial two meetings we all will get to know each other and understand the foundational aspects to **Tangle** & **IOTA**. How is it different from Blockchain. Learn to document a use-case and Business Model.

Bring together and build a solid foundation

Fourth Meeting:

- ✓ **Real World use case selection**
- ✓ **Architecture, Scope Decisions**

Members will propose ideas to implement and we will together pick one or more use cases by looking at domain expertise and interest from majority of the participants. Idea(s) selected will provide choice to members to form groups and brainstorm about the scoping and architecture for the use case.

Encourages ideation and innovation from community

Fifth thru Seventh Meetings:

- ✓ **Building Solution by collaboration**

During this 45 day period we all will participate to build the end-to-end solution that will enable everyone coming together to build the chose use case(s)

Put the big picture in view and encourage team members to play various roles

Conclusion Workshop:

- ✓ **Condensed Version Workshop**
- ✓ **Showcase of Solutions built**

One day workshop for the open community to learn in a condensed approach what was done over a period of 3 months.

During this workshop, the ideas built will be showcased to the open community to help increase the connect and spread the idea.

Typical format of each meeting:

- Welcome & General Discussion [30 mins]
- 2 Presentations from members [30 min each]
- Shared Learning & Discussion [60 min]
- News Briefs [10 min]
- Open Discussion & Networking [20 min +]

7 Use Cases we have executed

Krishi Chain	• A De-Centralized, Autonomous Marketplace for trading of agricultural commodities
Good Char	• Last mile donation tracking using Blockchain
B'Lock'	• Distributed Logistics with proof of origin and tracking etc
Identity Management	• Managing Self sovereign Identity on Blockchain
Cold Chain	• Bringing transparency to Cold Supply Chain (Vaccines, Food etc)
Smarter Law Violation Prevention System	• Focus on Traffic Violation Challan Management
DisNE	• Easy and trusted way to share unused assets paving path for truly shared economy

Supporters

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GOVERNMENT OF TELANGANA

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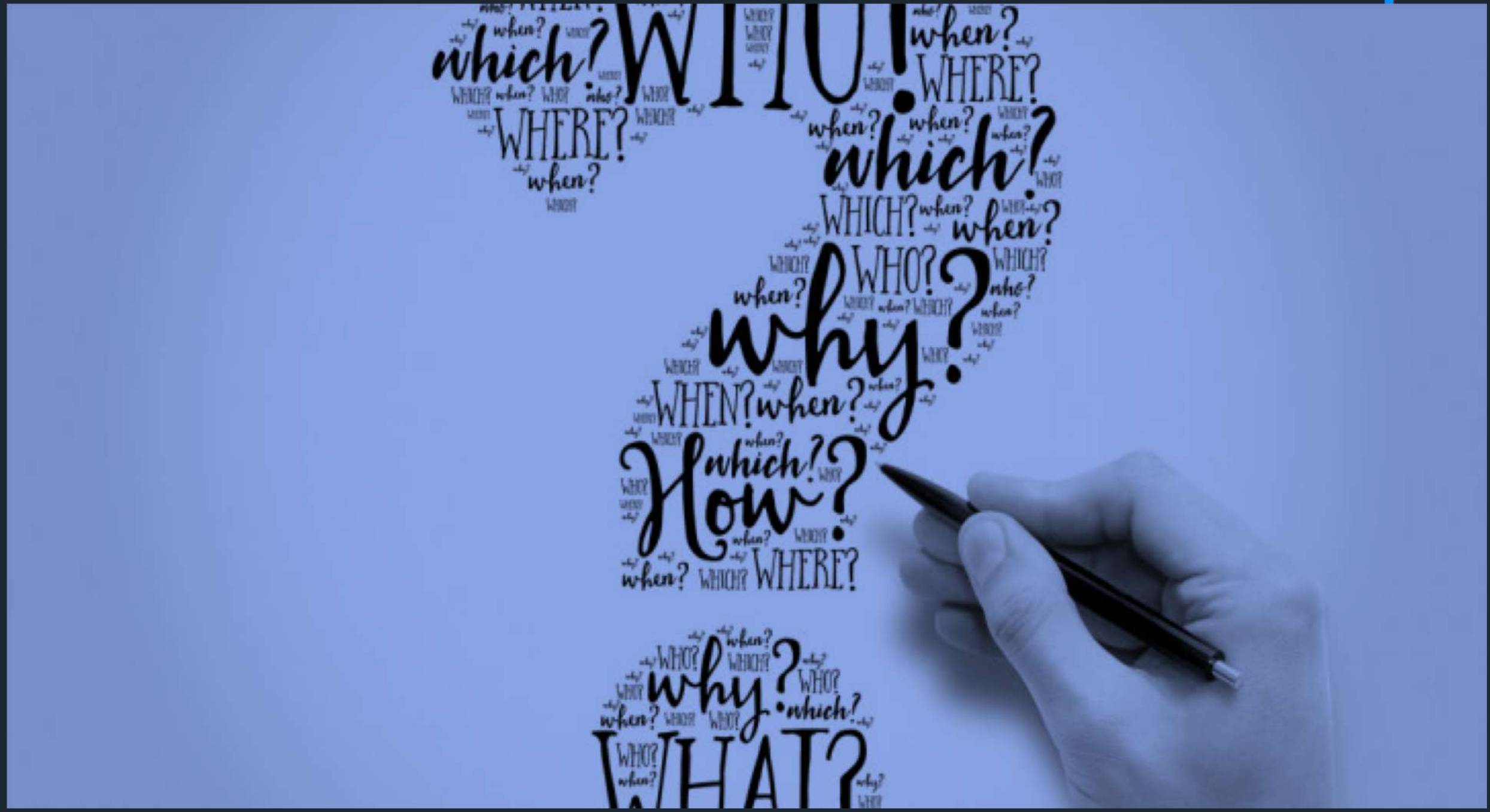
SIMPLIFYING BUSINESS

iDEALABS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