BLOCKCHAIN CRASH COURSE

101 Blockchains

THIS COURSE IS FOR YOU IF WANT TO:

- Learn how Blockchain works
- Familiarize with Blockchain Definitions
- Understand what makes Smart Contracts be so “smart”
- Learn how Blockchain will change our world and your career?

101 Blockchains

5 DAYS

15 MINUTES PER DAY

FLEXIBLE LEARNING

BLOCKCHAIN CRASH COURSE

BLOCKCHAIN CRASH COURSE

- DAY 1: What exactly is Blockchain Technology
- DAY 2: Must know (Enterprise) Blockchain Terms
- DAY 3: Smart Contracts Basics
- DAY 4: Blockchain Digital Transformation
- DAY 5: How Blockchain will change our world

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WHO SHOULD TAKE THIS COURSE?

- Senior Leadership & Decision Makers
- Software developers and startups
- Innovation Managers & Entrepreneurs
- Advisors & Business Analysts

WHO YOU WILL LEARN FROM?

This course is led by former corporate practitioners and industry experts who will share their knowledge and experience with you

Enrico Camerinelli
Enrico is a globally renown expert of supply chain finance and blockchain, whose current area of focus is on global transaction banking, supply chain finance, blockchain and corporate treasury systems.

Aviv Lichtigstein
A thought leader and entrepreneur with extensive experience in building enterprise products utilizing Big Data & AI. Aviv Lichtigstein is the founder and CEO of 101 Blockchains

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DAY 1

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What is Blockchain?

"Open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way" wikipedia.org

- ✓ Open
- ✓ Distributed
- ✓ Ledger
- ✓ P2P
- ✓ Permanent

Source: wikipedia.org

How Does a Blockchain Work: A Step-by-Step View

1. A user requests for a transaction

2. A block representing the transaction is created

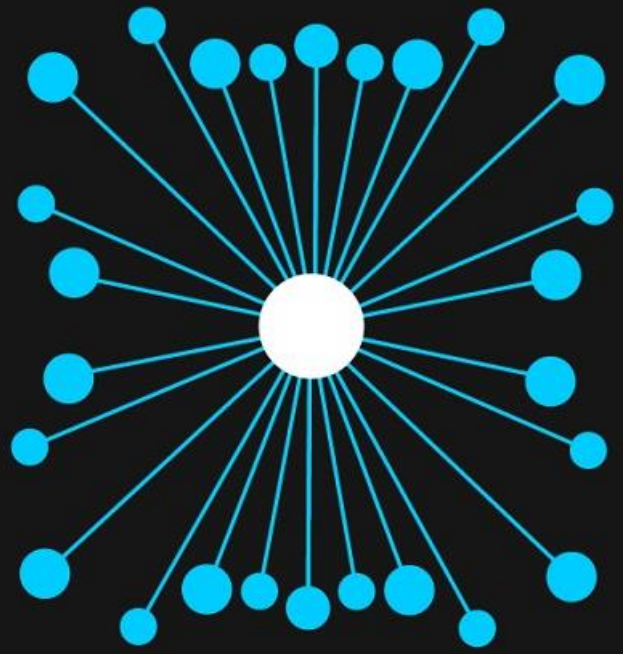
3. The block is broadcasted to all the nodes of the network

4. All the nodes validate the block and the transaction

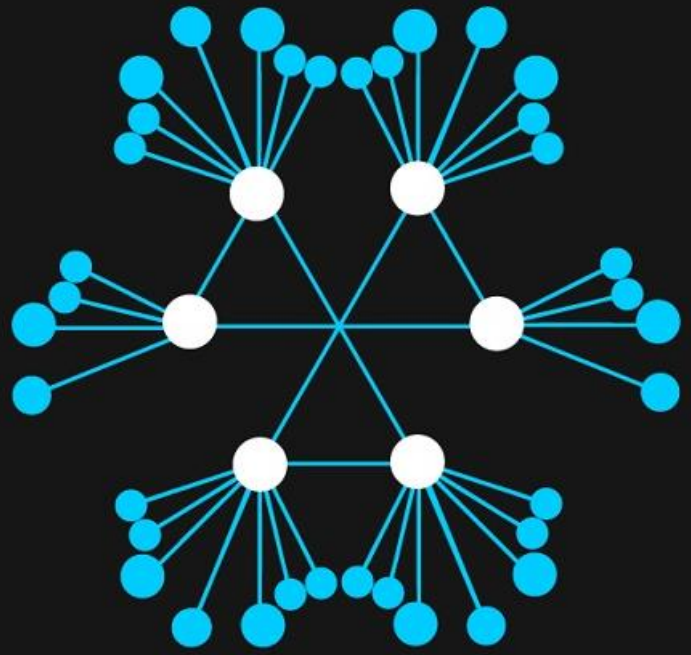
5. The block is added to the chain

6. The transaction gets verified and executed

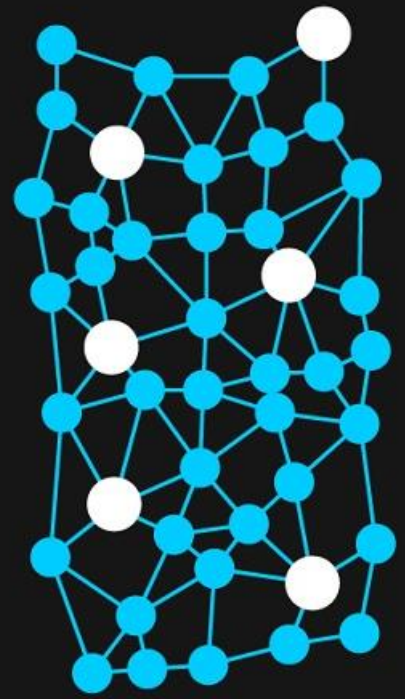
Centralized vs Decentralized vs Distributed Network: An Overview



Centralized Network
All the nodes are connected under a single authority



Decentralized Network
No single authority server controls the nodes, they all have individual entity



Distributed Network
Every node is independent and interconnected with each other

Remarkable Benefits of Blockchain Technology

Faster Settlement
Way faster than the manual process of validation

Immutable
The transactions cannot be undone if they are already on the blockchain

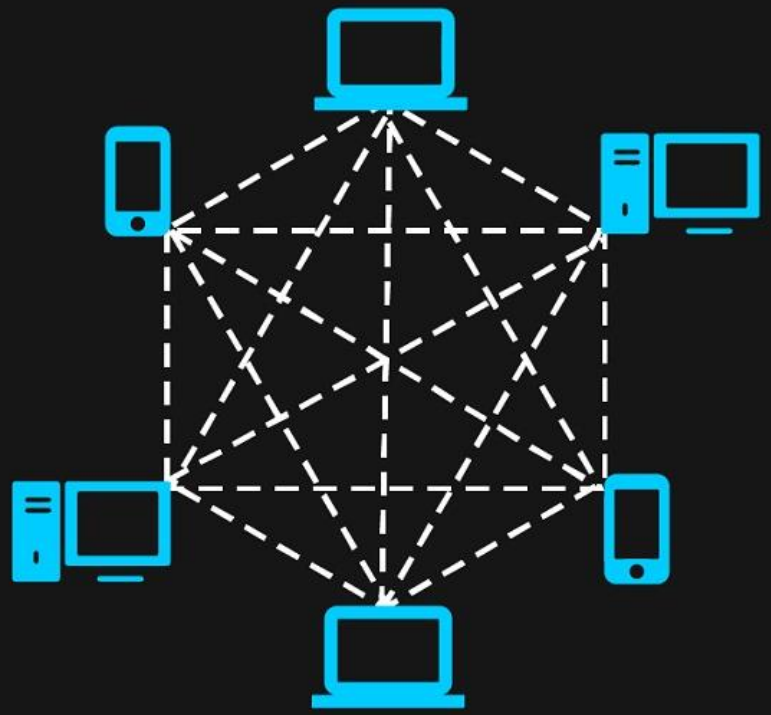
Increase Network Capacity
Much more capable than the traditional network

Shared and Distributed
Blockchain technology offers a shared and distributed ledger that is open for all users

More Secured
Much safer than the traditional methods

Decentralized
Not dependable on server based technology and no one has authority over the system

Public vs Private Blockchain Network



Public Blockchain: Permissionless

An open network system where all the devices can freely access without any kind of permission. The ledger is shared and transparent.

Private Blockchain: Permissioned

A user has to be permitted by the blockchain authority before he/she could access the network. The user might join only if he/she gets an invitation.

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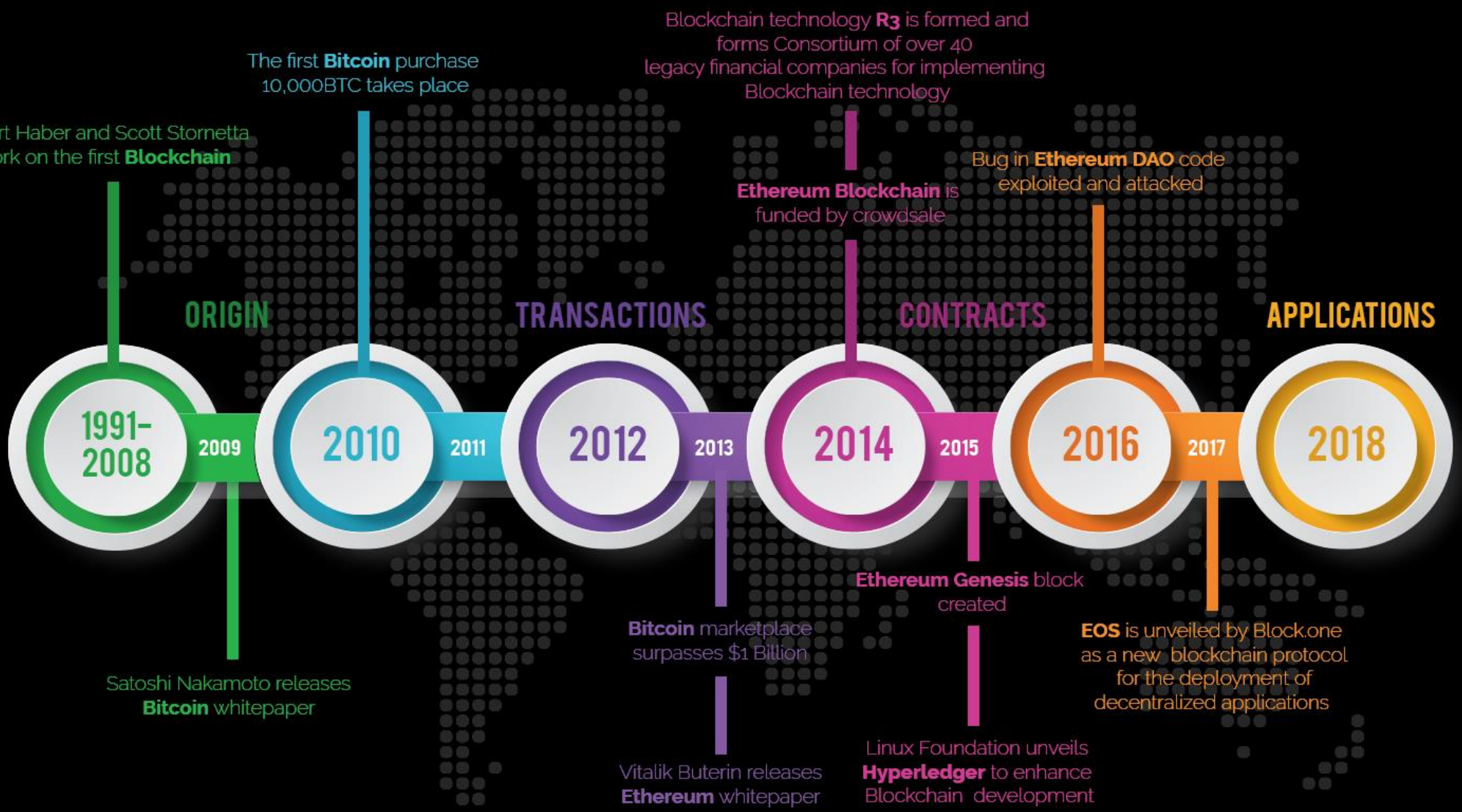
THE HISTORY OF BLOCKCHAIN TECHNOLOGY



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DAY 2

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Must know (Enterprise) Blockchain Terms

- **Blockchain:** decentralized distributed ledger that allows peer-to-peer (p2p) transactions secured by cryptographic algorithms and consensus mechanisms.
- **Consensus mechanism:** a way to ensure that the transaction is valid without the need for a central authority, and that there is no double-spending.
- **Valid transaction:** parties are certain that the exchange has happened and cannot be neglected.
- **Double-spending:** the possibility for one party to 'copy-and-paste' and 're-use' an electronic transaction (e.g., payment).
- **Miners/ validators:** network participants dedicated to validating transactions and avoiding double-spending.
- **Bitcoin :c**ryptocurrency that runs on blockchain.
- **Cryptocurrency:** a digital token exchanged on blockchain using cryptographic algorithms to secure the p2p transaction.
- **Token:** the digital representation of a 'unit of possession' that can be exchanged between parties.
- **Permissionless blockchain:** blockchain protocol that allows anyone to join the network.
- **Permissioned blockchain:** blockchain protocol that requires authorization to join the network.
- **Smart contract:** software program that- when triggered- automatically executes instructions to transfer tokens.

DAY 3

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Smart Contract Explained

1

- A contract is created between two parties
- Both parties remain anonymous
- The contract is stored on a public ledger

2

- Some triggering events are set i.e. deadlines
- The contract self-executes as per written codes

3

- Regulators and users can analyze all the activities.
- Predict market uncertainties and trends

How Do Smart Contracts Work?

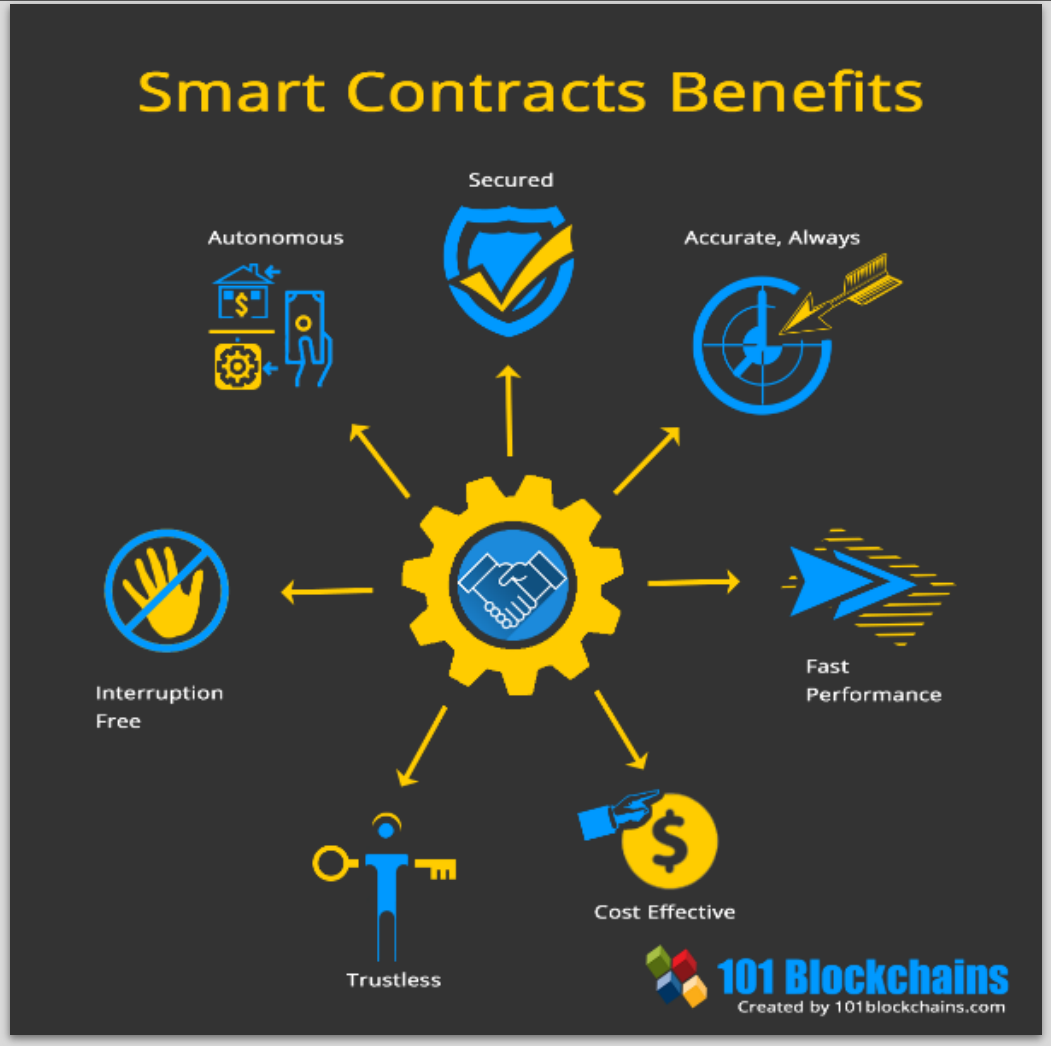
Registered

Automated Settlement of Contracts

No Third Party Need

What Are the Advantages of Smart Contracts?

- ✓ Total Transparency
- ✓ No Miscommunication
- ✓ Efficient Performance
- ✓ No Paperwork
- ✓ Backup
- ✓ Trustworthy
- ✓ Guaranteed Outcomes



Disadvantages of Smart Contracts

- × Confidentiality
- × Error
- × Rogue Contracts

"Whereas most technologies tend to automate workers on the periphery doing menial tasks, blockchains automate away the center.

Instead of putting the taxi driver out of a job, blockchain puts Uber out of a job and lets the taxi drivers work with the customer directly."

Vitalik Buterin

Smart Contracts Use Cases

Record Storing

Trading Activities

Supply Chains

Mortgage

Real Estate Market

Employment Arrangements

Copyright Protection

Healthcare Services

Government Voting

Insurance Claims

Internet-of-Things (IoT)

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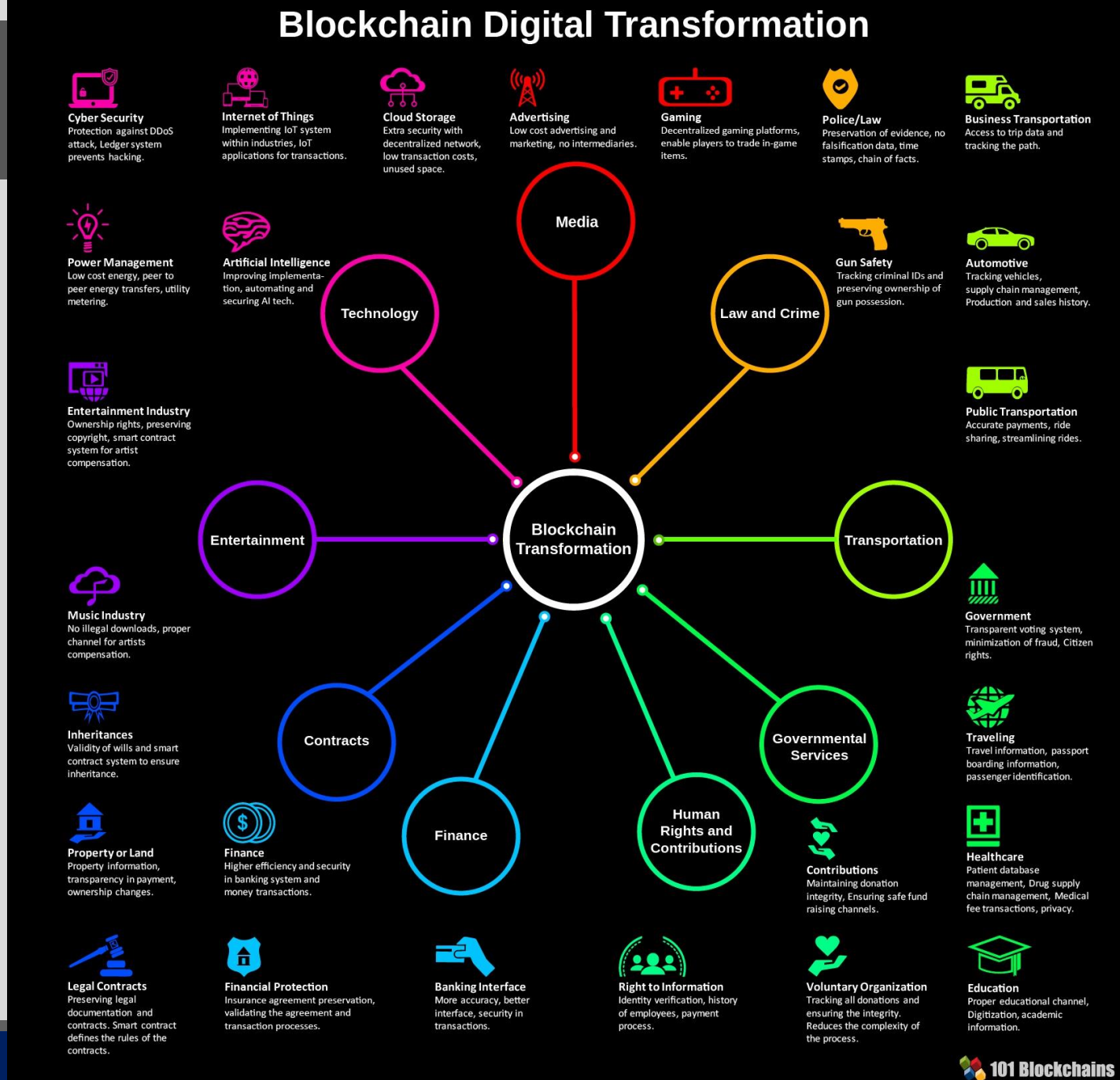
9 Verticals of Blockchain Transformation

1. Technology
2. Media
3. Law and Crime
4. Transportation
5. Governmental Services
6. Human Rights
7. Finance
8. Contracts
9. Entertainment



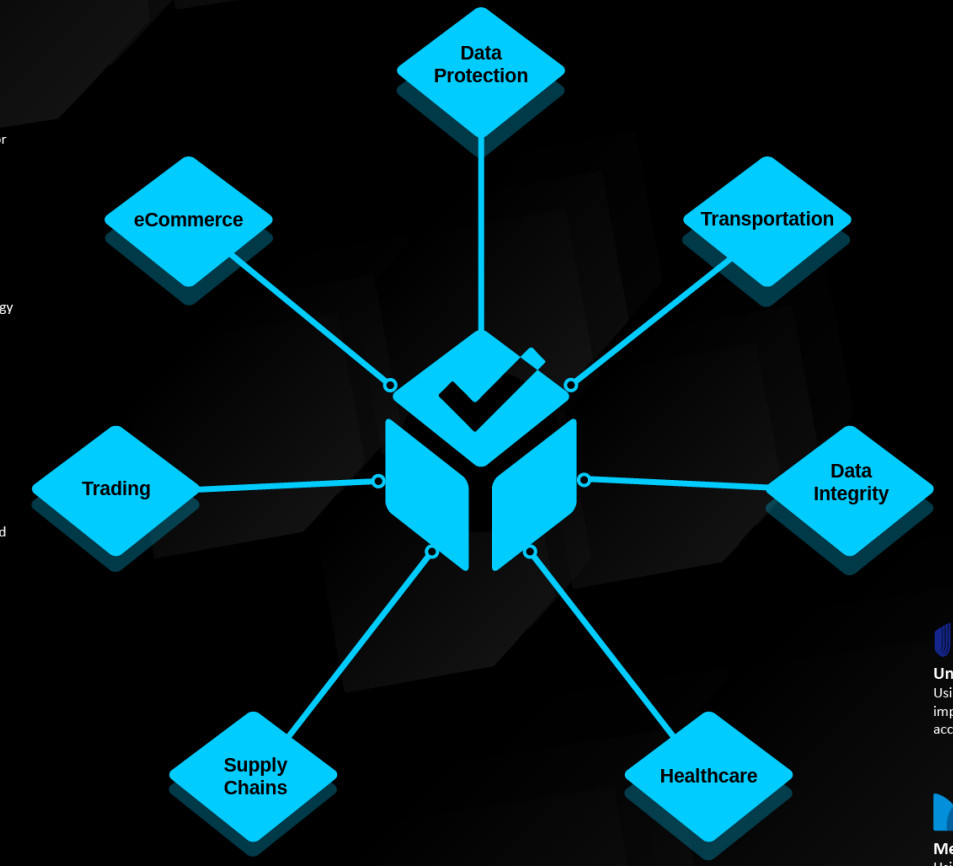
2020 Leading Sectors

- ✓ Supply Chains
- ✓ Fintech

And more...

- ✓ Retail
- ✓ Shipping
- ✓ Mining
- ✓ Healthcare
- ✓ Insurance

Enterprises Which Are Implementing Blockchain Technology



Apple
Patented blockchain technology for time stamping data.

Facebook
Exploring the use of blockchain to enhance data security and users privacy.

Google
Exploring the use of blockchain technology to enhance cloud service security and for data protection.

Baidu
Using blockchain to enhance intellectual rights management.

Ford
Leveraging blockchain technology to enhance the mobility of technologies.

Tencent
A Solution for verifying invoice authenticity and for ensuring tax compliance.

Toyota
Planning to use blockchain technology to enhance autonomous driving technology.

Alibaba
Using blockchain technology to track luxury goods in its e-commerce platforms.

Bristish Airways
Implementing blockchain to manage flight data as well as verifying travelers identity.

Prudential
Unveils a blockchain powered trading platform for small and medium-sized enterprises.

AIA Group
Launched the first of its kind bancassurance for sharing policy data.

BHP Billiton
Leveraging blockchain technology for supply chains management.

UnitedHealthcare
Using blockchain technology to improve doctors directories to enable accurate insurance claim fillings.

FedEx
Working on blockchain solution for settling customer disputes.

Metlife
Using blockchain technology for storing patients medical records for insurance purposes.

Nestle
Using blockchain technology in supply management to track baby food products.

Maersk
Blockchain system for tracking movement of shipments between ports.

UPS
Blockchain powered logistics monitoring and management solution.

Samsung
Intends to use blockchain technology to enhance supply chain management when it comes to electronics shipments.

Walmart
Using blockchain technology to track product movement from farmers to stores.

Use Case: IBM Food Trust

Let’s build a smarter, safer, more sustainable food supply chain




Food safety

Securely trace products in seconds – not weeks – to mitigate cross-contamination, spread of food-borne illness, unnecessary waste and the economic burden of recalls.

Food freshness

Gain unprecedented visibility into supply chain data to improve freshness, increase shelf life and reduce product loss.

→ Learn about Freshness for IBM

Reduced waste

Maximize shelf life, optimize the supply chain and provide quick response to food recalls, all helping to reduce waste.

Sustainability

Identify inefficiencies, ensure quality of goods, track authenticity of products and certify provenance across the entire supply chain.

Source: https://www.ibm.com/blockchain/solutions/food-trust

DAY 5

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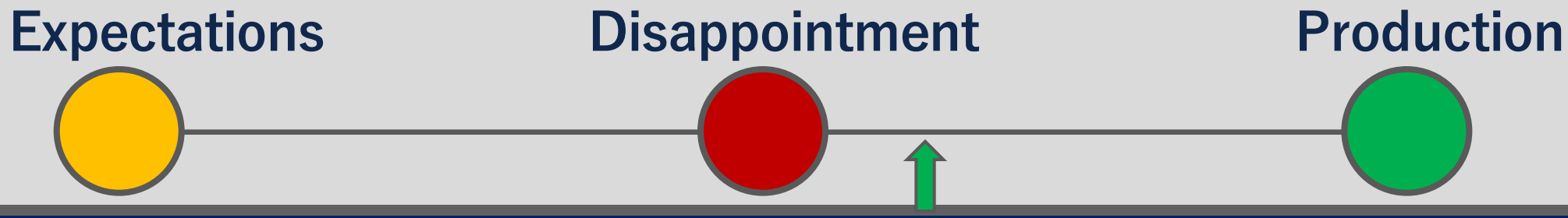
Is the Blockchain overhyped?

Robert Metcalfe, in *InfoWorld*, 1995:

> "I predict the Internet will soon go spectacularly supernova and in 1996 catastrophically collapse."

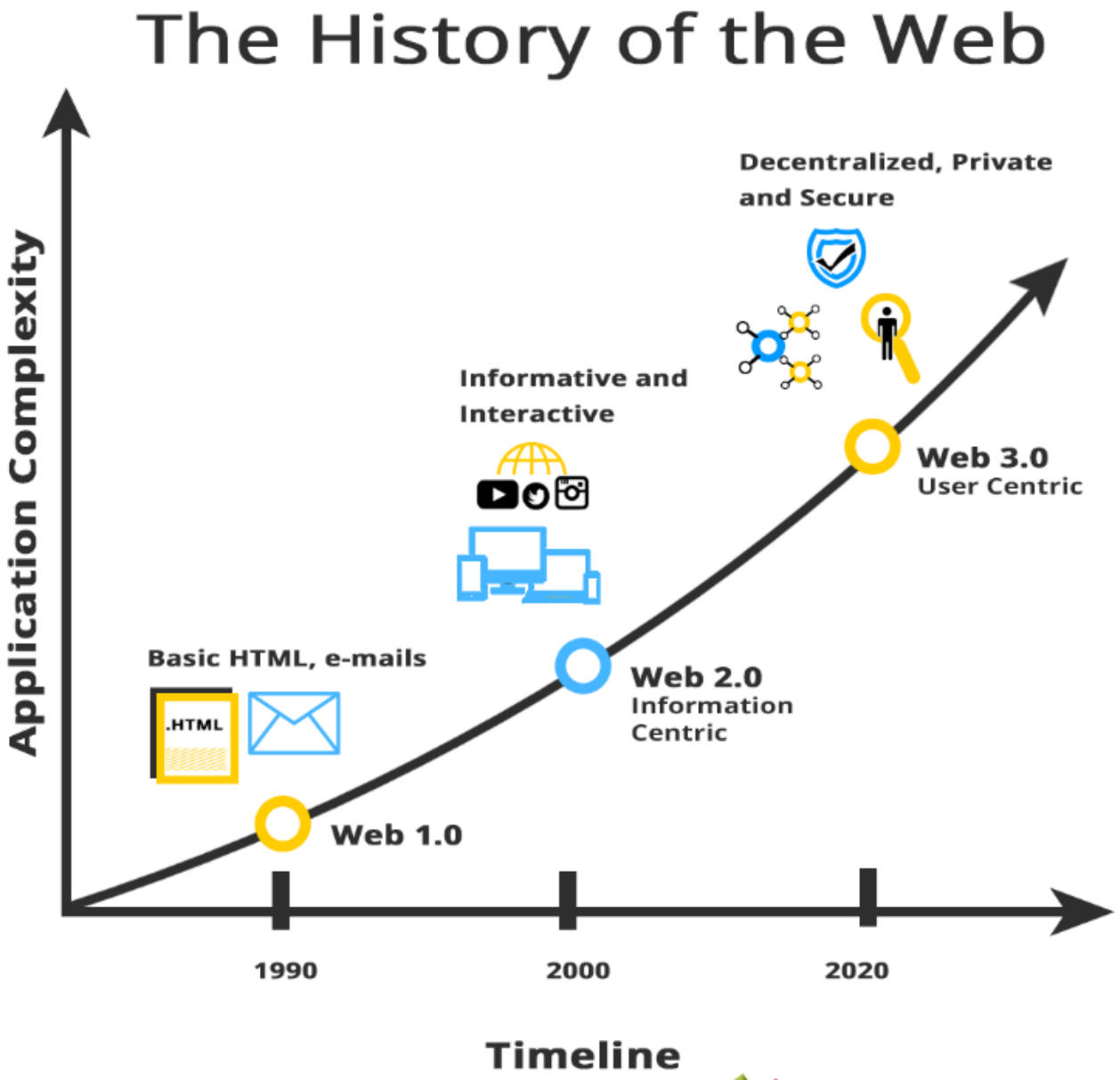
Just five years in to the web's public availablity, Robert Metcalfe, the inventor of Ethernet, gave the whole thing a 12-month life expectancy.



Web 3.0 –
Make People Valuable Again

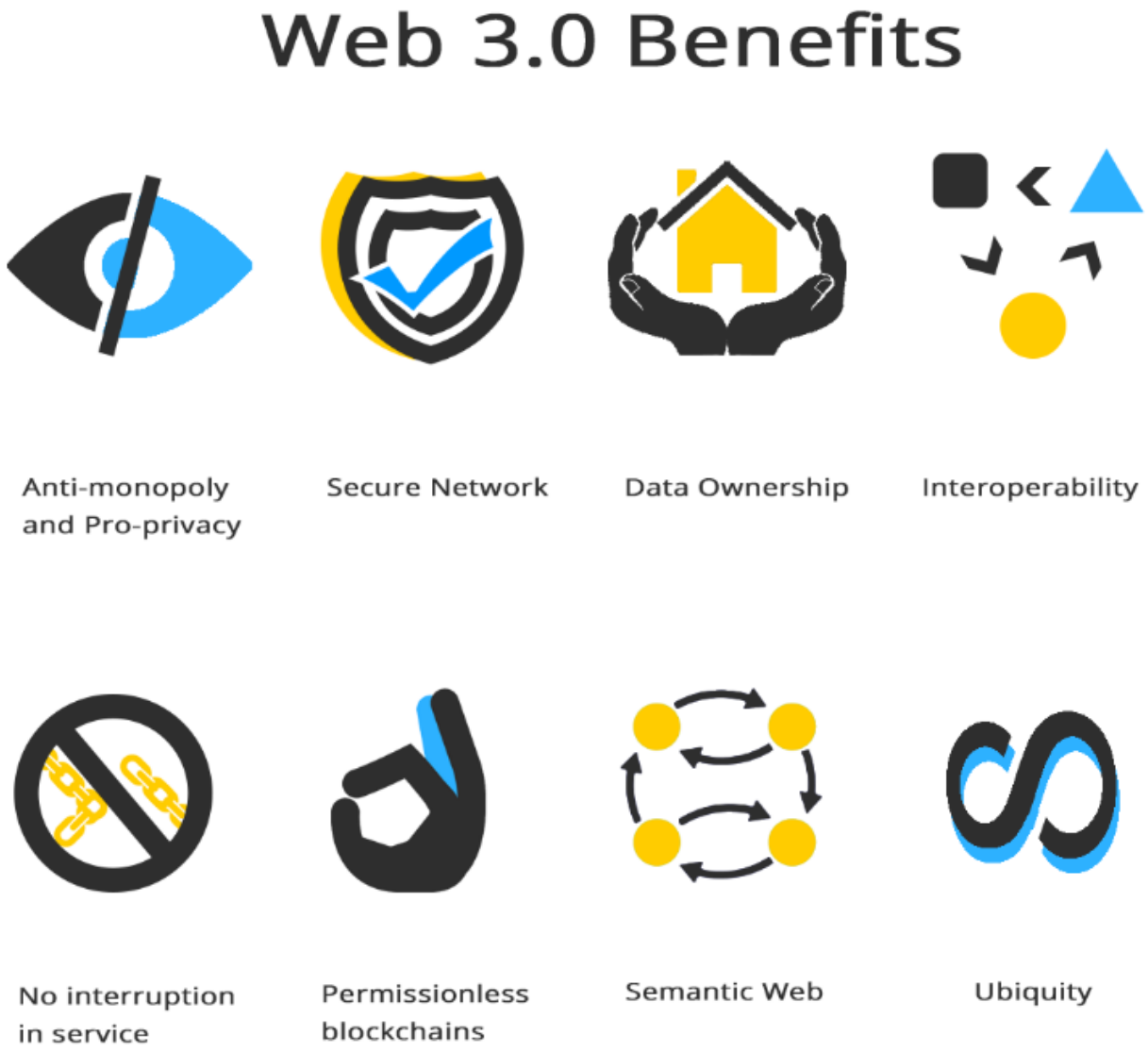
Web 3.0 is the 3rd generation of the internet where the devices are connected in a decentralized network rather depending on server-based databases.

The new internet is a user-centric, more secured, private and better connected.



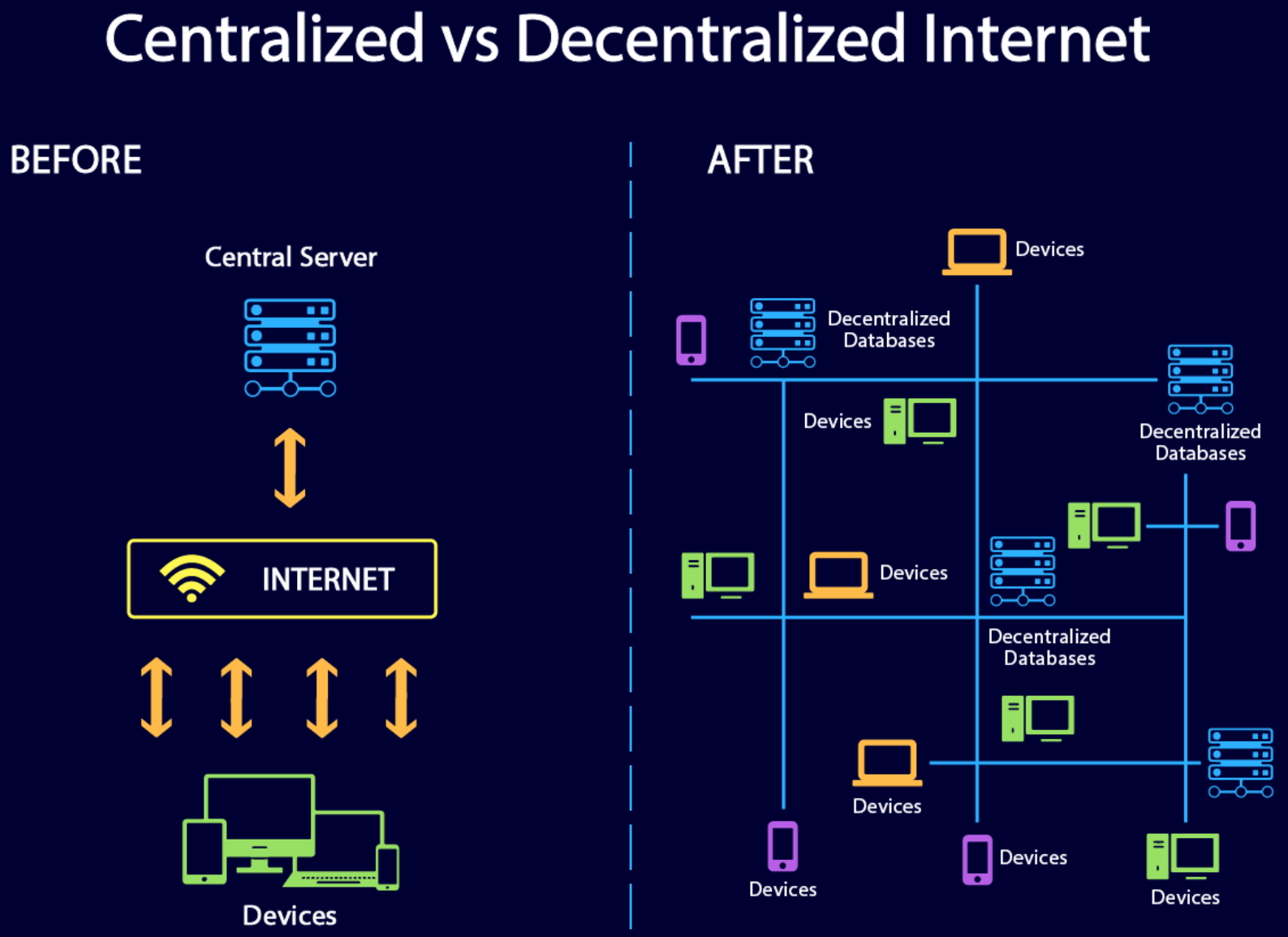
Web 3.0 Benefits

- Anti-monopoly
- Pro-privacy
- Secure network
- Data Ownership
- Interoperability
- No interruption in service
- Permissionless blockchains
- Semantic Web
- Ubiquity



Remember

- Decentralized Internet
- No central authority
- Data Flow
- New Business Models
- dApps



Federated Blockchains Use Cases

- Financial Services.
- Insurance Claims.
- Multiparty Aggression.
- Supply Chain Management.
- Organizational records security.

Federated Blockchain Simply Explained

What is a Federated Blockchain?

- It operates under multiple authority instead of a single highly trusted node.
- The authority nodes are pre-selected from all the organizations connected in the network.
- Selected group maintains the network and validates a block.
- Only the group has access to the restricted inner area.

Use Cases:

- Financial Services.
- Insurance Claims.
- Multiparty Aggresion.
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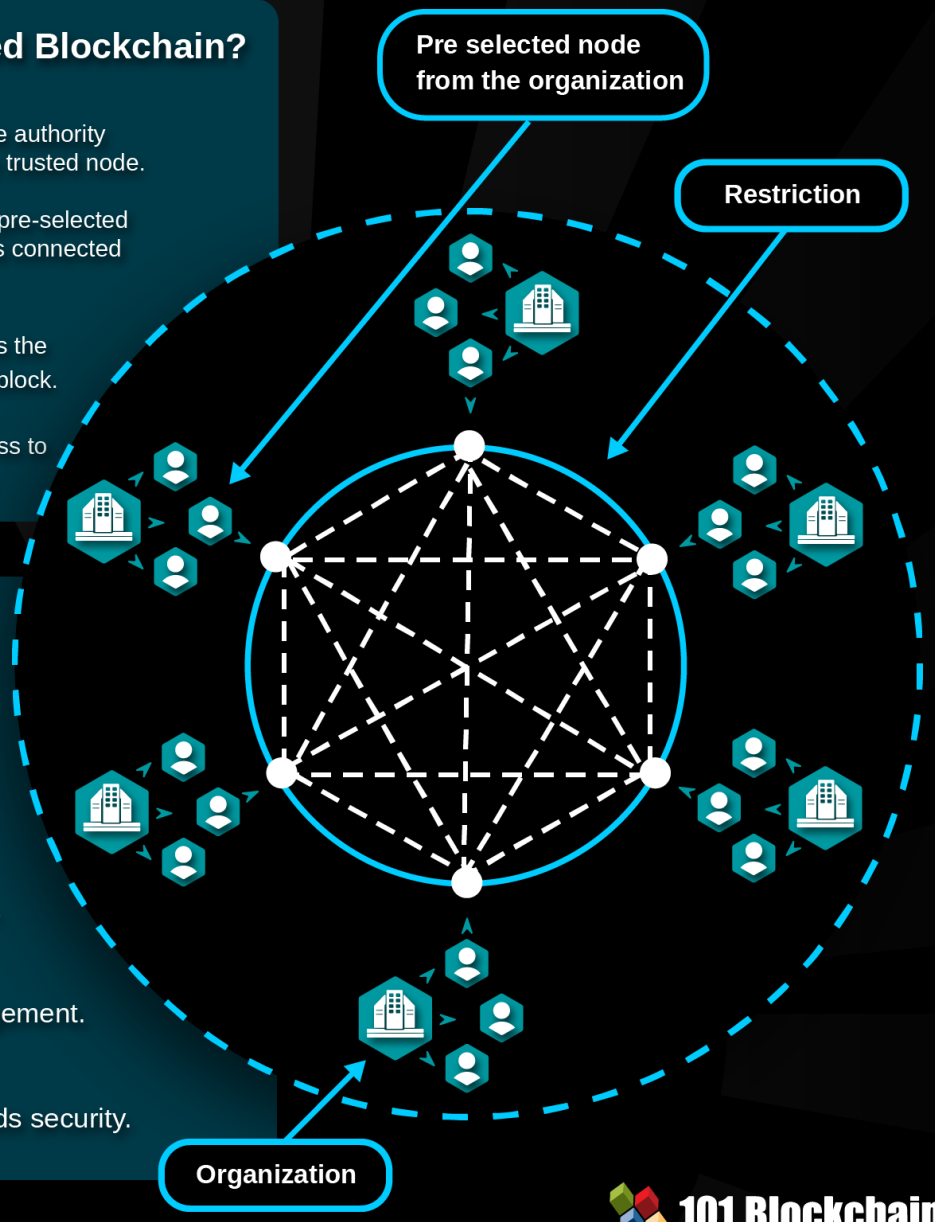
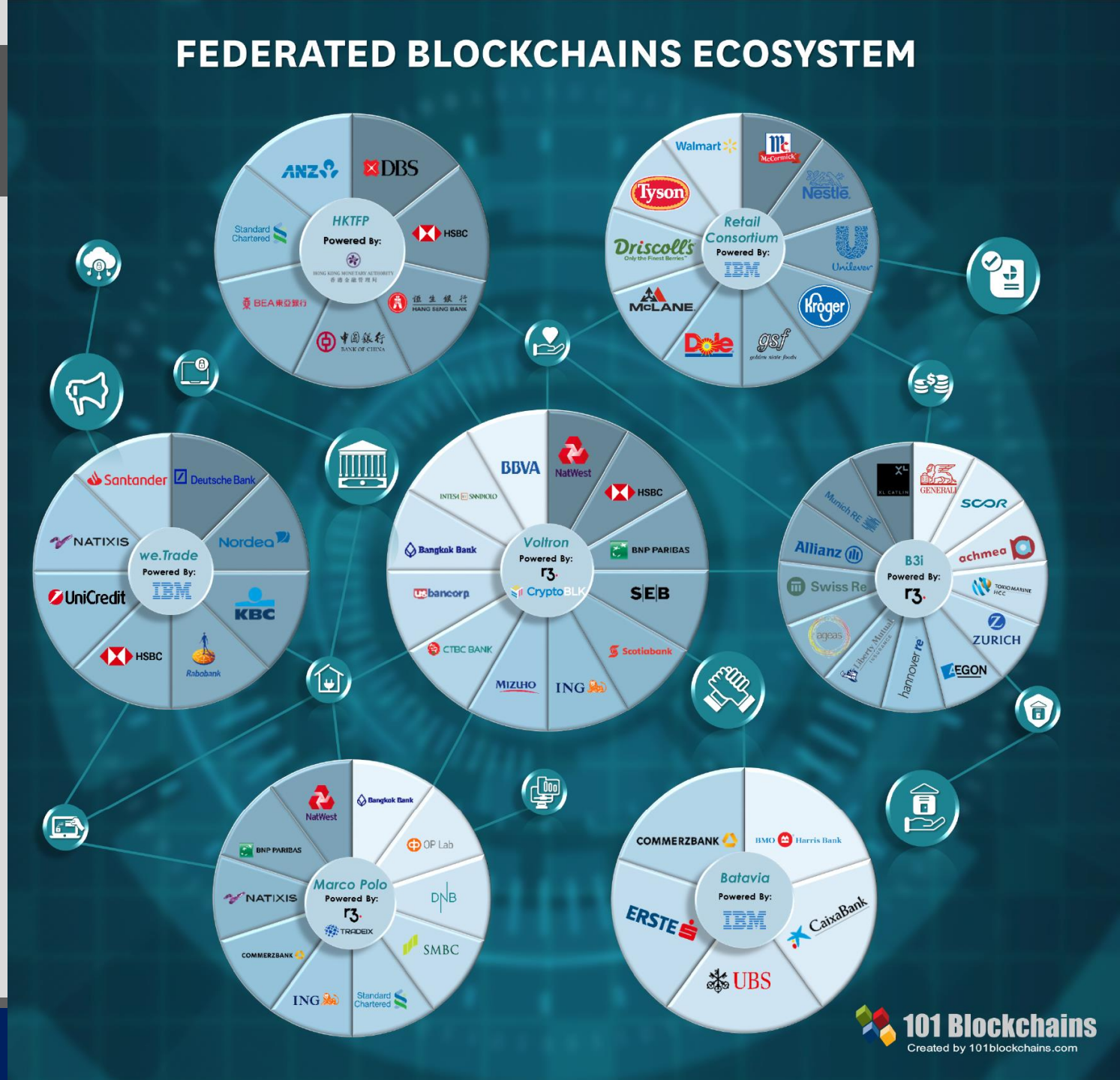
- Organizational records security.



Federated Blockchains

- Finance
  - we.Trade (Hyperledger)
  - Volton (Corda)
  - HKTPF
  - Marco Polo (Corda, TRADEIX)
- Insurance
  - B3i (Corda)
- Retail
  - Retail Consortium(Hyperledger)



BONUS & NEXT STEPS

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Bonus #1

Blockchain vs Database

- Integrity
- Write Access
- Cost
- Trust

Is Database Enough? A comparison Between Blockchain and Database

No one has the central authority. 	Selected groups of individuals have authoritative control. 
Modifying data or asset is nearly impossible. 	Data or assets can be easily changed. 
All the data or activity is out in the open for everyone to see. 	All the data or transactions are hidden from each other. 
Cuts down the excessive costing. 	Implementing process is costly. 
Blockchains are slow. 	Databases are comparatively faster. 
Suited for an organization where users don't trust each other. 	Suited for an organization where there is mutual trust. 

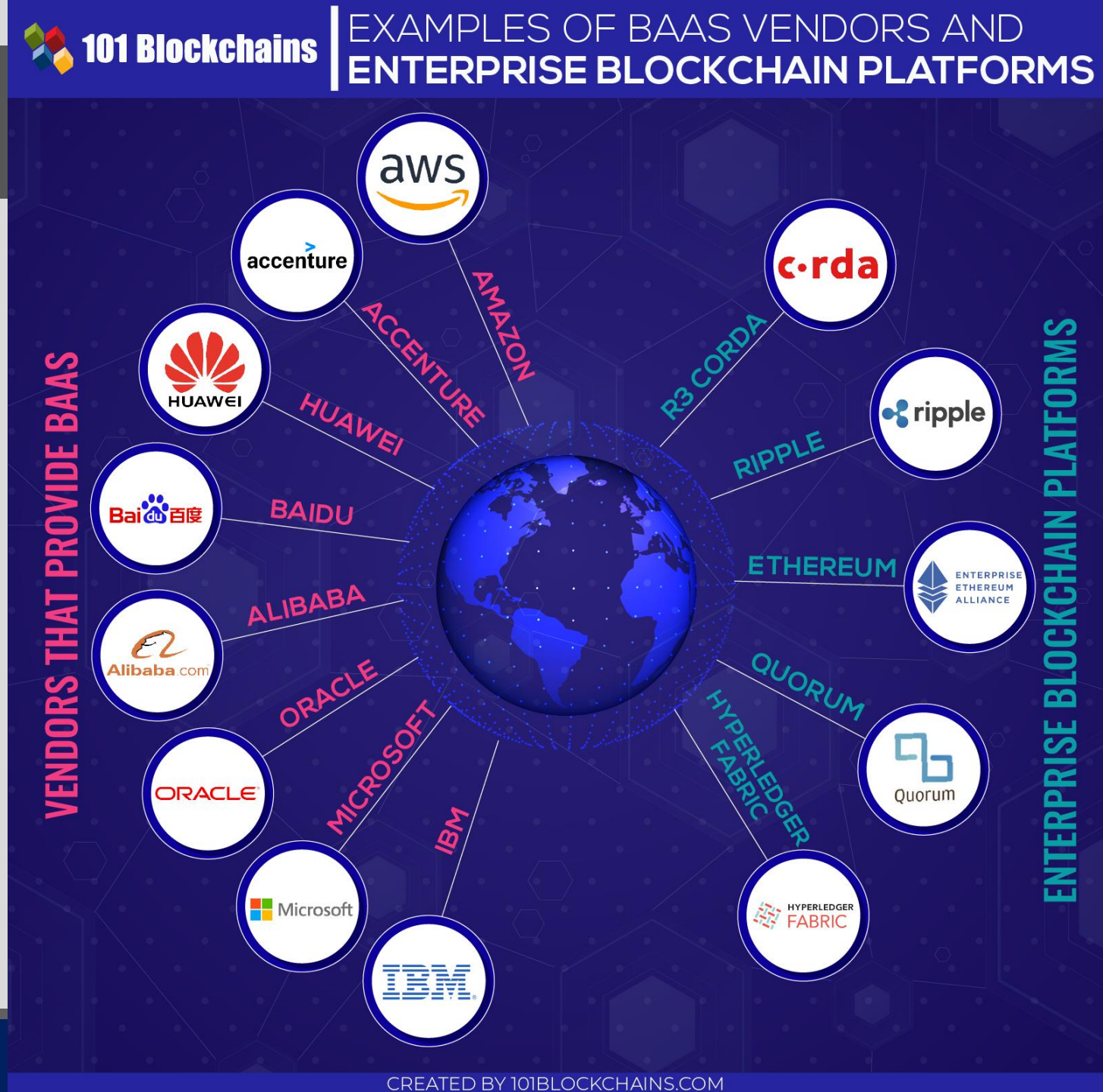
Bonus #2
Enterprise Blockchains

BaaS Vendors:

- IBM
- ORACLE
- AWS
- ALIBABA
- ACCENTURE

Enterprise Platforms:

- Fabric
- Corda
- EEA
- Quorum
- Ripple



EXPERIENCE WORLD-CLASS BLOCKCHAIN TRAINING

101 Blockchains

➢CERTIFIED ENTERPRISE BLOCKCHAIN PROFESSIONAL

- ✓ Understand the core concepts of blockchain technology and its ecosystem.
- ✓ Learn how to approach the blockchain implementation.
- ✓ Focus on your career transformation with up-to-date actionable tools.

GET YOUR CERTIFICATION TODAY

Become a member

Join the cross-industry community of the world's leading enterprise blockchain practitioners. The community is empowering the profession of Enterprise Blockchain Management.

JOIN OUR COMMUNITY

Trusted

Understand the core concepts of blockchain technology and its ecosystem, with verified research and forward-thinking insights.

Strategic

Learn how to approach the blockchain implementation with strategic advice focused on your industry.

Practical

Focus on your transformation with up-to-date actionable tools and start your blockchain transformation.

ARE YOU READY TO JOIN THE BLOCKCHAIN REVOLUTION?

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Enrico Camerinelli

VP Research