

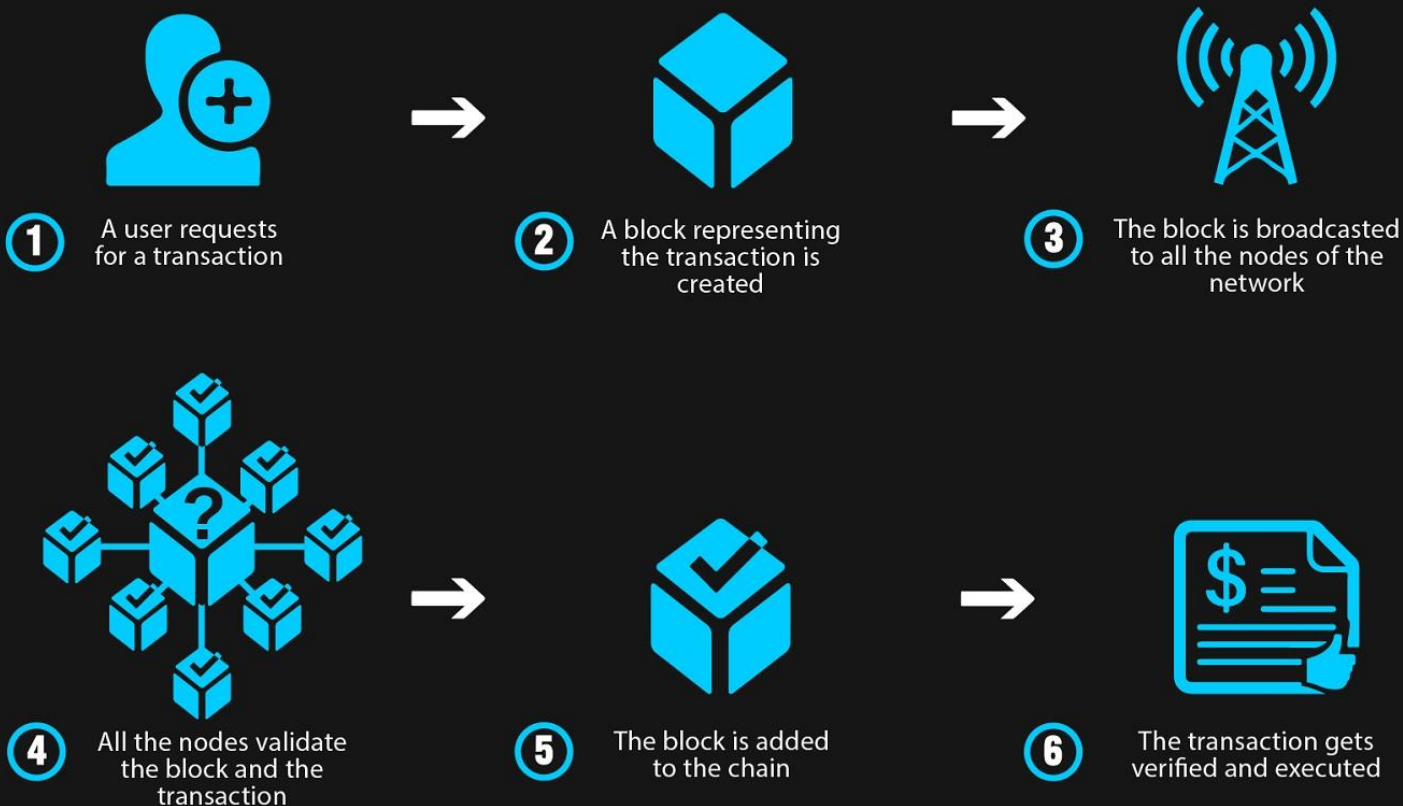
# Blockchain for Trade Finance

## A Better Trade Financing Experience?

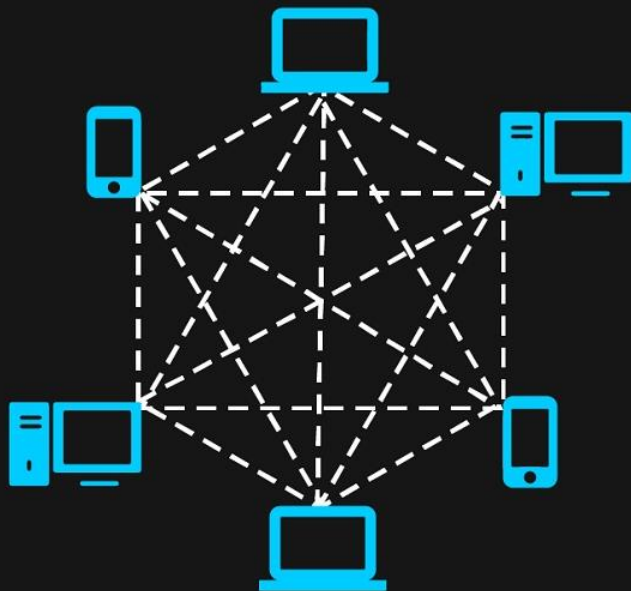


**101 Blockchains**

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



# 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.



# Enterprise Blockchains

## BaaS Vendors:

- IBM
- ORACLE
- AWS
- MICROSOFT
- ALIBABA

## Enterprise Platforms:

- Fabric
- Corda
- EEA
- Quorum
- Ripple





# Federated Blockchains

- Financial Services.
- Insurance Claims.
- Multiparty Aggression.
- Supply Chain Management.

## 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.



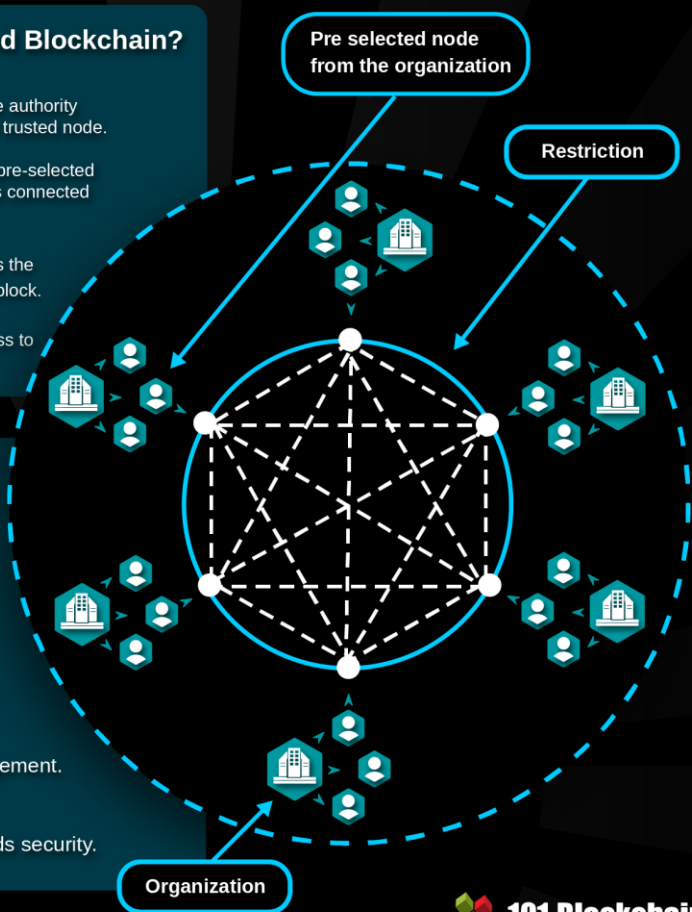
Multiparty Aggression.



Supply Chain Management.



Organizational records security.







# Trade Finance Ecosystem

## PLAYERS IN TRADE FINANCE ECOSYSTEM

Importers



Banks



Trade finance  
organizations



Exporters



Insurers



Export credit  
companies





# 7 Issues of Trade Finance Operations

## WHAT ARE THE ISSUES OF TRADE FINANCE?

### LOW CUSTOMER EXPERIENCE

The exporters and importers and the complex nature of the system makes it hard to keep track of all the parties involved in the trade. Fake documents also reduce the customer satisfaction level.

### INCREASING COST PRESSURE

Creating the letter of credit is a high-cost pressure point for both the clients and the banks.

### SUBSTANTIAL REGULATORY BURDEN

Managing geopolitical risks – trade barriers, sanctions, fraud prevention, and the KYC/AML protocols are becoming more complex.



### CURRENCY RISKS

Due to fluctuations in foreign exchange currency conversion might go up or down. This reduces the profit.



### PRODUCT RISKS

Maintaining product conditions in any situation is tough for the seller.



### MANUFACTURING RISKS

Manufacturing risk is common for products that need to have unique features or are fashioned in a different way.



### TRANSPORT RISKS

Shipping it to the buyer or buying it from a seller would require to get a cargo insurance which is costly.



# Trade Finance and Blockchain

## HOW TRADE FINANCING CAN WORK USING BLOCKCHAIN

### USE TRADE FINANCE BLOCKCHAIN PLATFORM TO MEET TRADING PARTNERS

The buyer and seller would use the blockchain platform to find potential trading partners who are trustable.

### BANK PAYMENT UNDERTAKING OF THE BUYER

Buyer's bank will undertake bank payments to directly settle them when smart contract conditions are met.

### SHIPMENT AND TRACKING OF GOODS

The seller would ship the goods, and both parties will track the process of the shipment.

### THE SELLER GETS THE PAYMENT

The smart contract will automatically pay up the seller once the buyer gets the shipment.

### CREATE A SMART CONTRACT AND INITIATE AN ORDER

Upon agreeing both parties will create a smart contract with the defined rules. The buyer will then initiate the order.

### RECEIVABLE FINANCING FOR THE SELLER

For speeding up the process, the seller can ask for receivable financing from its bank.

### BUYER CONFIRMS THE TRADE

Buyer will confirm the trade in the smart contract.





# 7 Benefits of Blockchain Technology in Trade Finance

## BLOCKCHAIN ADVANTAGES FOR THE TRADE FINANCE

### REAL-TIME PREVIEWING AND REVIEWING

Any document related to trade finance on the platform can be reviewed to see its authenticity in real-time.



### TRANSPARENT FACTORING

Blockchain can offer transparent viewing of the invoices which helps to factor them for short-terms.



### NO INTERMEDIATES

No need for going for a middleman and increase the risk of fraudulence. Instead, banks can safely facilitate trade finance without issues.



### NO DOUBLE SPENDING

All the bills of lading can be tracked from the blockchain, which eliminates the chance of double spending.



### SMART CONTRACT EXECUTION

The status of the smart contract agreement will get updated in real time, which will reduce the paperwork and time.



### PROOF OF OWNERSHIP

Blockchain can offer proof of ownership and be fully transparent of the location of the shipment.



### REGULATIONS

All the regional regulations can get maintained just from one place.





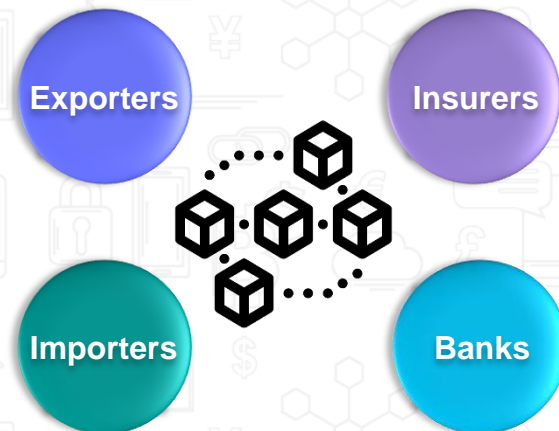
# Blockchain in Trade Finance Use Case: International Trade - Letter of Credit (LC)

What Is a Letter of Credit?

- A letter which is issued by a bank to another bank (typically in a different country). Serves as a guarantee for payment.
- Nature of international trade: distance, different laws in each country, personal trust.

**Voltron, the Letter of Credit blockchain platform**

|   |  |  |   |
|---|--|--|---|
| <b>Voltron</b><br>Powered By:<br><br> | <br>NatWest |  HSBC             |  BNP PARIBAS   |
|   |  ING        |  SEB              |  Scotiabank    |
|   |  usbank     |  CTBC BANK        |  MIZUHO        |
|   |  BBVA      |  INTESA SANPAOLO |  Bangkok Bank |
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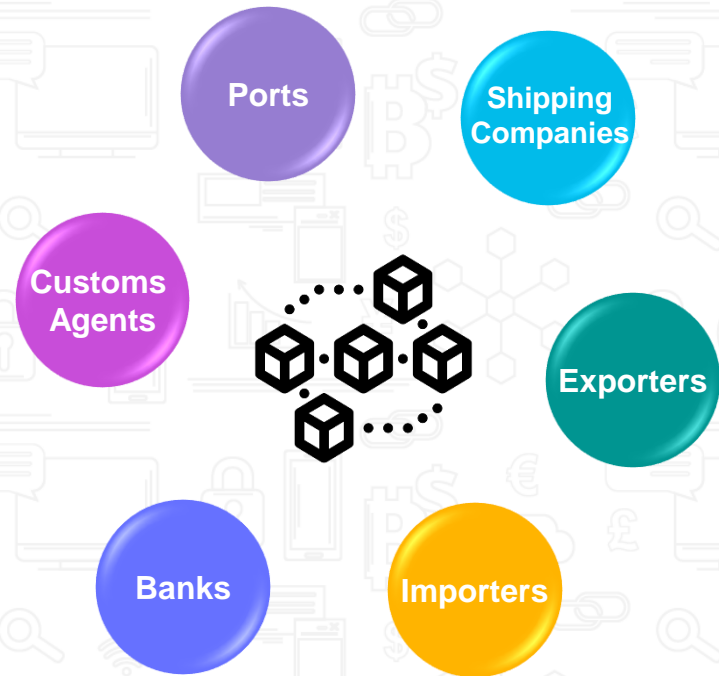




# Blockchain in Trade Finance Use Case: Maritime Trade - Bill of Lading (BoL)

- All members of the supply chain.
- Decentralized network.
- Direct exchange of documents.
- Eliminating disputes and risks.

**PAPERLESS TRADE**



# Leading Trade Finance Consortia

- We.Trade
- Komgo
- Voltron
- Marco Polo
- Batavia
- HKTP

## BLOCKCHAIN CONSORTIUMS FOR TRADE FINANCE

**HKTP**  
Powered By:

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**Voltron**  
Powered By:

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**Marco Polo**  
Powered By:

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**Batavia**  
Powered By:

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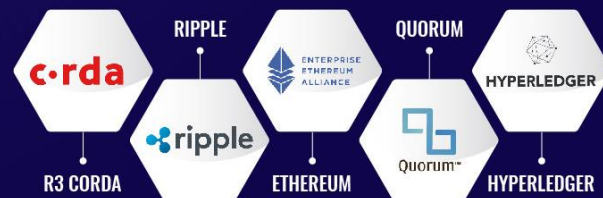
**we.Trade**  
Powered By:

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**Komgo**  
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## POPULAR ENTERPRISE BLOCKCHAINS SUITABLE FOR TRADE FINANCE







## R3 Corda

- Built for Trade Finance
- Enterprise Grade
- Optimized for IT environment
- Supports SQL & Oracle DB
- Application Firewall
- Compatible



## CORDA BAAS VENDORS

ACCENTURE

accenture

MICROSOFT AZURE

Microsoft Azure

AMAZON  
WEB SERVICES

aws

HEWLETT PACKARD  
ENTERPRISE

Hewlett Packard  
Enterprise



## REAL-WORLD COMPANIES USING R3'S CORDA

ING

SBI Holdings

MonetaGo

BANK OF CANADA  
BANQUE DU CANADA

TMX

獅子財經

HSBLOX

SGX

ChainThat

Shearman  
STEWART & LUTHERING

PAYMENTS  
CANADA

BANK OF THAILAND

PERKINS COIE

MAERSK

crowell & MORING

MAS  
Monetary Authority of Singapore

NatWest

SWIFT

## LONG-TERM VISION

### Shared Global Logical Ledger

R3 wants to evolve Corda to be a Shared Logical Ledger where all individuals, companies, and machines would be able to interact and transact seamlessly.

### Quality Control and Lower Costs

In future deployments of new versions of Corda, R3 wants to control and maintain the quality of the platform. They also want to lower the costs in different industrial deployment.

### Innovation for New Services

The company promotes the innovation of new Cordapps, mainly focused on enterprise platforms.

### Get Rid of Friction

Introducing shared standards for different solutions R3's Corda platform can get rid of frictions within organizations.



## Quorum Blockchain

- Open-source
- Enterprise Ready
- Customized
- Matured
- Performance & Throughput

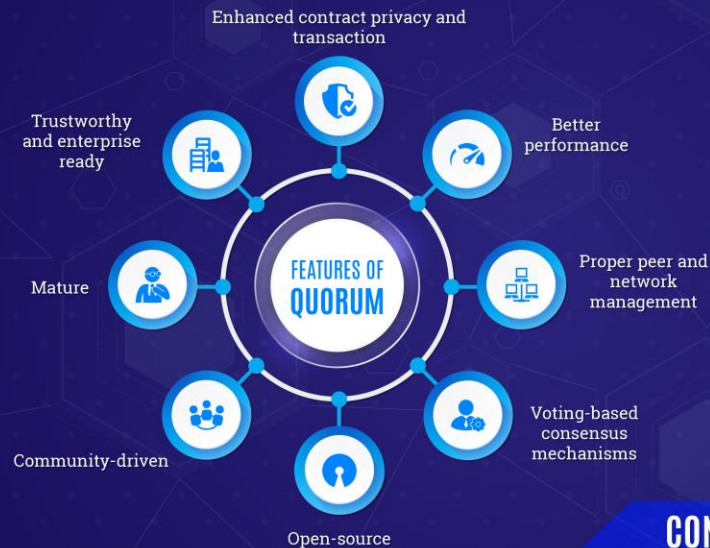


## WHAT IS QUORUM?

Quorum is an enterprise-focused Ethereum blockchain aimed towards the finance sector. It is the brainchild of JP Morgan.

## WHAT'S THE NEED FOR SUCH A SYSTEM?

Yes! Quorum provides financial sector the ability to use effective blockchain technology. Quorum offers permissioned network enabling organizations to customize to their own needs.



## QUORUM IS OPEN SOURCE!

**318** ↑↑↑↑↑  
ACTIVE CONTRIBUTORS

**10,000+**  
COMMITTS

**LGPL**  
3.0 LICENSE

## CONSENSUS ALGORITHMS



### RAFT-BASED CONSENSUS

Enables faster transaction, improves block storage



### Istanbul BFT

provides fault tolerance, protects blockchain against bad nodes

## QUORUM ARCHITECTURE

Three key components



### QUORUM NODE

A command line tool based on Geth



### CONSTELLATION TRANSACTION MANAGER

It takes care of the transaction data until it gets completed



### ENCLAVE

Enclave handles the sensitive information where the Transaction Manager delegates key functions such as encryption/decryption



# Real World Companies Using Blockchain for Trade Finance

- SWIFT
- Barclays
- People's Bank of China
- Mizuho
- Scotiabank
- KBank
- Dubai Trade and Dubai Custom

**Marubeni**

**MIZUHO**

**Ornua**  
THE HOME OF IRISH DAIRY

**S|E|B**



**Scotiabank**



**STC** Seychelles  
Trading Company Ltd.



**BARCLAYS**

**دبي التجارية**  
DUBAI TRADE

**ธนาคารกสิกรไทย**  
KASIKORNBANK 華泰銀行

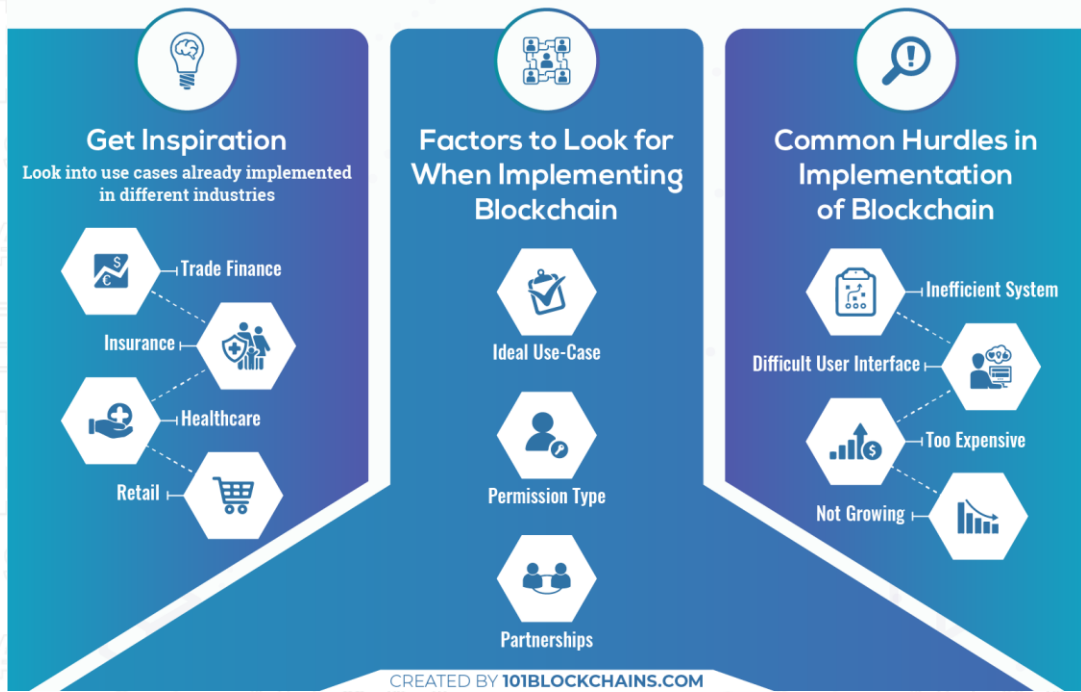
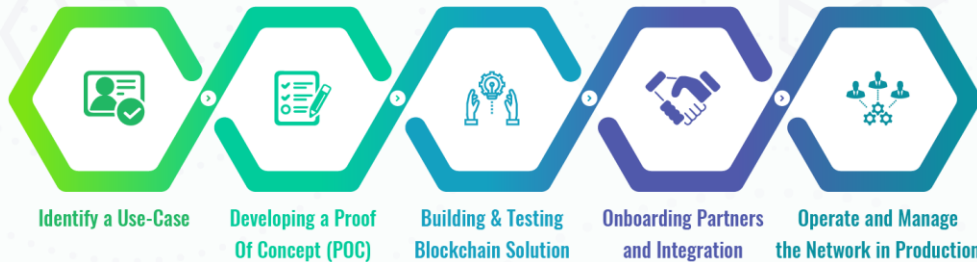


# Getting Started

1. Identify a Use-Case
2. Develop a POC
3. Build & Test
4. Onboard Partners
5. Operate & Manage



## BLOCKCHAIN IMPLEMENTATION: THE STEPS







# 101 BLOCKCHAINS COMMUNITY

## Shaping the Future of Blockchain Technology

101 Blockchains is a cross-industry community of the world's leading Blockchain practitioners. The community is empowering the profession of Enterprise Blockchains Management.



### 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

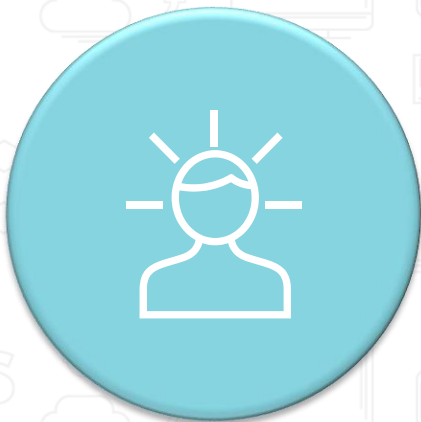
Focus on your transformation with up-to-date actionable tools and start your blockchain transformation.



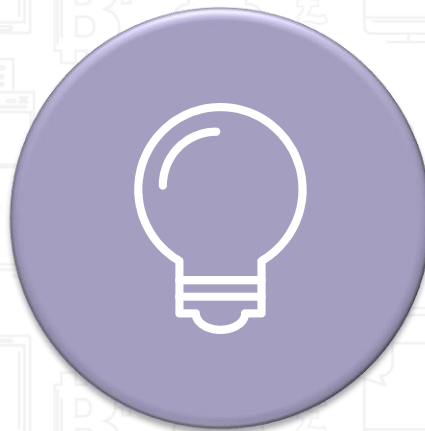
# HOW WE DO THAT

Our licenses are designed to work for enterprise executives and their respective teams.

These give you access to:



Research and  
analyst calls



Library of  
case studies



Peer connections  
& Live events



# Want to learn more?

**Trade Finance Blockchain: Redesigning The World of Trades and Businesses**

<https://101blockchains.com/trade-finance-blockchain/>

**Corda Blockchain: Ruler of The Financial Enterprises**

<https://101blockchains.com/corda-blockchain/>

**Blockchain vs Database: Understanding The Difference Between The Two**

<https://101blockchains.com/blockchain-vs-database-the-difference/>

**Corda Blockchain: Ruler of The Financial Enterprises**

<https://101blockchains.com/corda-blockchain/>

**Quorum Blockchain Ultimate Guide**

<https://101blockchains.com/quorum-blockchain-tutorial/>

**Blockchain For Enterprise: Training Guide**

<https://101blockchains.com/blockchain-for-enterprise/>

**How to Implement Blockchain? Empower Your Business**

<https://101blockchains.com/implement-blockchain/>

**2019 The Year of the Federated Blockchain – Blockchain Consortium Simply Explained**

<https://101blockchains.com/federated-blockchain/>

**Introduction to Permissioned Blockchains**

<https://101blockchains.com/permissioned-blockchain/>

**Enterprise Ethereum: Private Blockchain For Enterprises**

<https://101blockchains.com/enterprise-ethereum/>

**Blockchain Proof of Concept: Enterprise POC Guide**

<https://101blockchains.com/blockchain-proof-of-concept/>

**Blockchain As A Service: Enterprise-Grade BaaS Solutions**

<https://101blockchains.com/blockchain-as-a-service/>

**Distributed Ledger Technology: Where Technological Revolution Starts**

<https://101blockchains.com/distributed-ledger-technology-dlt/>

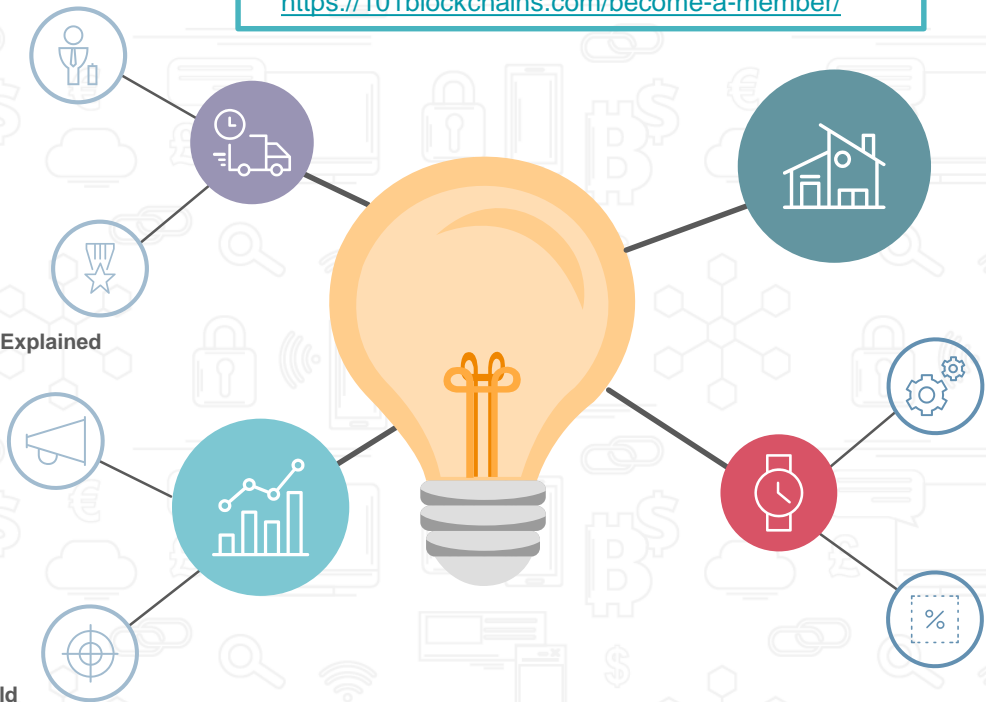
**The Ultimate Blockchain Technology Guide: A Revolution to Change the World**

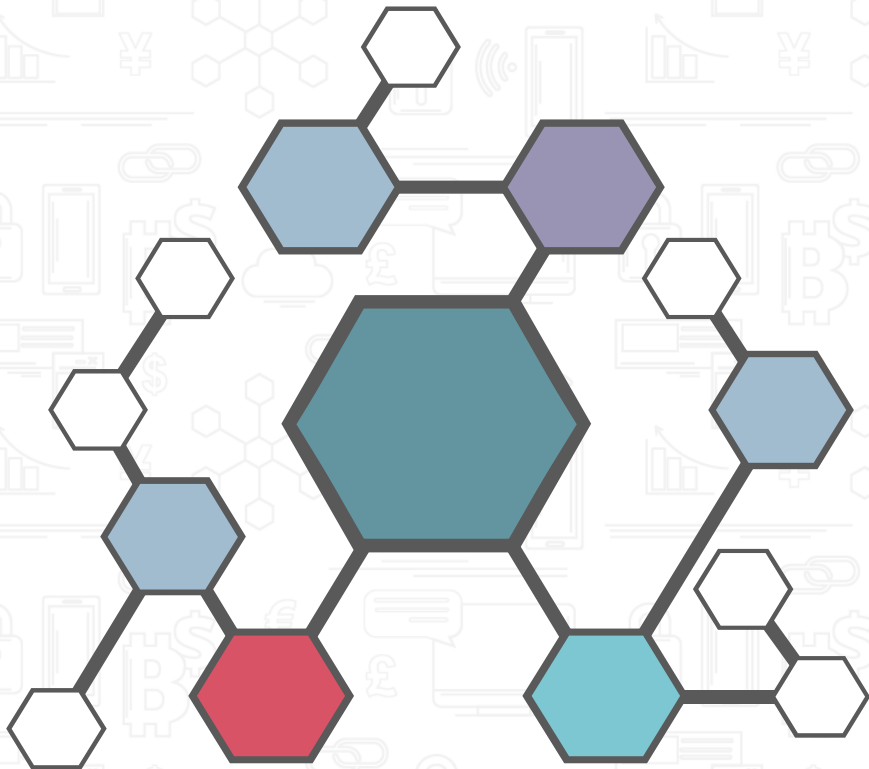
<https://101blockchains.com/ultimate-blockchain-technology-guide/>

## Become a Member

A cross-industry community of the world's leading Blockchain practitioners.

<https://101blockchains.com/become-a-member/>





## Become a Member

A cross-industry community of the world's leading Blockchain practitioners. Let's connect and find out how we can help you drive new value to your organization.

### GET IN TOUCH



[contact@101blockchains.com](mailto:contact@101blockchains.com)



[linkedin.com/company/101blockchains](https://www.linkedin.com/company/101blockchains)



[twitter.com/101blockchains](https://twitter.com/101blockchains)





## Key Features

- Trustless
- Decentralized
- Distributed
- Consensus Based
- Faster
- Secured



Enterprise blockchain is a blockchain network that can be integrated and utilized for enterprise-level purposes. These blockchain technologies are specially equipped to deal with enterprise level organizational demands.

With the ever-growing popularity of these type of blockchains, it's expected to reach an industry worth \$3.1 Trillion within 2030.

## FEATURES OF THE BLOCKCHAIN TECHNOLOGY THE ENTERPRISES CAN UTILIZE



### DECENTRALIZED NATURE ENSURES PEER TO PEER NETWORK

The blockchain is decentralized in nature and doesn't offer the typical client-server type of system. With the central authority out from the mix, now users can enjoy the benefits of peer-to-peer connection.



### IMMUTABILITY GETS RID OF CORRUPTION

No one can tamper with the records on the blockchain ledgers. Once it gets added, it will stay that way. So, enterprises that deal with internal corruption situation issues, will finally be able to depend on a system that can't be corrupted even if tried.



### GREATER TRANSPARENCY INCREASES RESPONSIBILITY

Enterprises deal with transparency issues, and many consumers don't rely on them blindly due to that. With blockchain technology, they can increase their transparency and attract more consumers being completely honest.



### CHEAPER COSTS WILL SAVE MONEY

The Blockchain as a Service is quite cheaper to integrate, and many vendors provide it. Using BAAS instead of developing blockchain from scratch would be more budget friendly and hassle-free.



### FASTER NETWORK INCREASES EFFICIENCY

Everybody wants a faster output when it comes to financial sectors. The blockchain is relatively quicker than many other networks, and enterprises can utilize that to increase their overall efficiency.



# Blockchain VS Database

## Key Characteristic:

- Authority
- Integrity
- Transparency
- Performance
- Cost

## Network Type:

- Public
- Private
- Federated

### WHAT IS BLOCKCHAIN?

Blockchain is a peer-to-peer decentralized distributed ledger technology. It was first introduced in 2009.



### WHAT IS A DATABASE?

Databases are centralized ledger which stores data in a structured way and is managed by an administrator.



### BLOCKCHAIN V/S DATABASE

|   |                      |   |
|---|----------------------|---|
| Blockchain is decentralized and has no centralized approach. However, there are private blockchains that may utilize some form of centralization. | <b>AUTHORITY</b>     | Databases are controlled by the administrator and are centralized in nature.                    |
| Blockchain uses a distributed ledger network architecture.  | <b>ARCHITECTURE</b>  | Database utilizes a client-server architecture.   |
| Blockchain utilizes Read and Write operations.  | <b>DATA HANDLING</b> | The database supports CRUD (Create, Read, Update and Delete).                                   |
| Blockchain data supports integrity.   | <b>INTEGRITY</b>     | Malicious actors can alter database data.   |
| Public blockchain offers transparency.  | <b>TRANSPARENCY</b>  | Databases are not transparent. Only the administrator decides which the public can access data. |
| Blockchains are comparatively harder to implement and maintain.   | <b>COST</b>          | The database being an old technology is easy to implement and maintain.                         |
| Blockchain is bobbed down by the verification and consensus methods.  | <b>PERFORMANCE</b>   | Databases are extremely fast and offer great scalability.                                       |

#### BEST USE CASES FOR DATABASE

- Apps or systems that utilize the continuous flow of data
- Storing confidential information
- Online transaction processing that needs to be fast
- Apps or systems where data verification is not needed
- Relational data

#### BEST USE CASES FOR BLOCKCHAIN

- Transfer value
- Storage value
- Monetary transactions
- Trusted data verification
- Voting systems
- Decentralized apps (dApps)

|                   | Database                   | Hybrid/Federated Blockchain          | Public Blockchain                |
|-------------------|----------------------------|--------------------------------------|----------------------------------|
| Type              | Permissioned               | Permissioned                         | Public                           |
| Control           | Centralized                | Hybrid with few features centralized | Decentralized                    |
| Architecture      | Client-Server architecture | Closed Peer-to-Peer architecture     | Public peer-to-peer architecture |
| Data Persistence  | non-persistence            | Immutable                            | Immutable                        |
| Chance Of Failure | Yes                        | No                                   | No                               |
| Performance       | Extremely fast             | Slow to medium                       | Slow                             |