

Comparison of Blockchain fabrics

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I have been amazed at the number of times the discussion of various blockchain fabrics has come up during the past few weeks. I get it. There are Bitcoin purists who swear it is the only 'true' implementation, and that there are Ethereum fans who think it is the only viable solution for business.

The reality is that these are all blockchain fabrics - underlying technology that enables transactions to happen in a distributed world where entities are not known or trusted (though that's not necessarily true for business blockchains). Personally, I argue that fabrics will be commoditized (if they already haven't) and as the open source community gets behind them, the value will shift higher up the stack into value-added services (such as applications) that will meaningfully interact with on-,off- and intra-blockchain resources.

Blockchain Fabric Comparison

	Hyperledger	Ethereum	Ripple	Bitcoin
Description	General purpose Blockchain	General purpose Blockchain	Payments Blockchain	Payments Blockchain
Governance	Linux Foundation	Ethereum Developers	Ripple Labs	Bitcoin Developers
Currency	None	Ether	XRP	BTC
Mining Reward	N/A	Yes	No	Yes
State	Key-value database	Account data	None	Transaction data
Consensus Network	Pluggable : PBFT	Mining	Ripple Protocol	Mining
Network	Private or Public	Public or Private	Public	Public
Privacy	Open to Private	Open	Open	Open
Smart Contracts	Multiple programming languages	'Solidity' programming language	None	Possible, but not obvious

Bitcoin

In a nutshell:The original Blockchain application, spawning an industry

Use case: Cryptocurrency transfer between anonymous participants

Network: Single public network

Accounts: BTC currency, rewards for mining, transaction fees

User Data: Small transaction data area

Consensus Network: Transactions validated using 'Proof of Work' cryptographic mining

Privacy: Transaction ledger completely open

Smart Contracts: In original design and code, but not obvious

Open: Open source. Changes governed by Bitcoin developers.

Recent Innovations: None – relatively established

Backing: Bitcoin applications are backed many VCs. Network not backed.

More information: <https://bitcoin.org>

Ethereum

In a nutshell: Popularized smart contracts

Use case: Smart contracts encapsulate business rules. Ether currency as ‘fuel’

Network: Single public network. Private network providers available, e.g. Eris

Accounts: Ether currency, rewards for mining, transaction fees

User Data: Accounts can hold binary user data

Consensus Network: POW transaction validation

Privacy: Fully open ledger

Smart Contracts: Fully externalized via ‘Solidity’ programming language

Open: Open source. Changes governed by Ethereum developers

Recent Innovations: Discussing ‘Proof of Stake’ option – May 2016

Backing: Ethereum applications are backed by VCs. Network by donations

More information: <https://www.ethereum.org>

Ripple

In a nutshell: International Payments Platform for banks and businesses

Use case: Cryptocurrency (XRP) transfer between anonymous participants

Network: Single public network

Accounts: Hold XRP currency balance

User Data: No user data

Consensus Network: Transactions validated using novel, ‘white-list’ network protocol

Privacy: Fully open ledger

Smart Contracts: None.

Open: Open source. Changes governed by Ripple Labs

Recent Innovations: Focus on international banking settlements

Backing: Andreessen Horowitz, Google Ventures

More information: <https://ripple.com>

Hyperledge

In a nutshell: Distributed ledger backed by the Linux Foundation

Use case: General purpose distributed ledger satisfying broad requirements

Network: Private networks focus. Available as managed service. Public later

Accounts: Not currency based. (UTXO API available using smart contracts)

User Data: Flexible key-value database

Consensus Network: Transactions validated using PBFT as default. Pluggable design

Privacy: From fully open to private ledgers

Smart Contracts: Broad choice of programming languages. Extensible via Docker containers

Open: Open source. Changes via standard Linux Foundation processes

Recent Innovations: Merging contributions from IBM, DAI, Intel prior to expect GA July 2016

Backing: 30 Founders: IT companies, Banks & Financial organizations

More information: <https://www.hyperledger.org>



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Mark Morris
All-Star -- Founder, lejer9.com -- inventor of the "Cognitive Blockchain" (tm)

... 26s

Thx Manav! Very good high-level dissection--it gives a nice quick overview of direction. My take-a-way...only four columns, if representative of current players, indicates the level of maturity (early) , vagueness of terms (undefined), and lack of competitors (winners undetermined), so caution is warranted and conceptual experimentation may be viable where a strong incentiv... [See more](#)

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Shubbankar Singh
MBA 2016 (Strategy, Innovation), Rotman (University of Toronto), B.Tech. 2009 (Electrical...

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Nice to have a concise comparison. Great point on the attachment with some fabrics. There has to be a balance between innovating/creating within the system (any fabric) and investing outside it - more crucially because of the stage that we are at with the Blockchain technology.

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Justin Caravaggio
Analysis. Trades. All things blockchain.

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Nice breakdown. And soon we may be able to add a column for central bank blockchains, as the Bank of Canada is experimenting with such a venture.

Like Reply | 1 1



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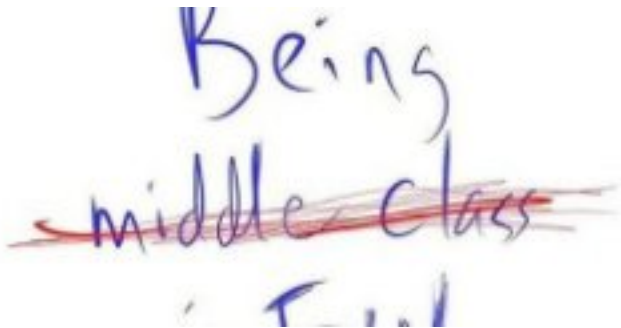
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Good point. Though would they qualify to be a fabric? I have been aware of the current experimentation but I didn't get the sense that a whole new fabric was being developed... thoughts?

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