📘 Blockchain Platform Comparison Report

📊 Comparison Table

Blockchain Name	Type	Consensus Mechanism	Permission Model	Speed / Throughput (TPS)	Smart Contract Support	Token Support	Typical Use Case	Notable Technical Feature
Ethereum	Public	Proof of Stake (PoS)	Open	~30–100+ (with Layer 2)	Yes (Solidity, Vyper)	Yes (Native ETH, ERC20+)	Decentralized Apps, NFTs, DeFi	Large dev ecosystem, EVM compatible
Hyperledger Fabric	Private	Pluggable (Raft, Kafka)	Permissioned	~2,000+	Yes (Go, Java, JavaScript)	No (modular support)	Supply chain, asset tracking	Modular, channel-based privacy
Quorum	Consortium	Istanbul BFT / Raft	Permissioned	~200–300	Yes (Solidity via EVM)	Yes (Private ETH-based)	Inter-bank payments, finance consortia	Private tx, Ethereum compatibility

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📝 Short Report

The selected blockchains—**Ethereum**, **Hyperledger Fabric**, and **Quorum**—represent different blockchain models suitable for different needs.

Ethereum is an open, decentralized blockchain using Proof of Stake. It supports powerful smart contracts via Solidity and hosts a large number of decentralized apps. Its openness is ideal for public participation, but throughput limitations exist on Layer 1, often addressed by Layer 2 scaling solutions.

Hyperledger Fabric, on the other hand, is permissioned and built for enterprise use. It offers high speed, modularity, and privacy via channels. It supports smart contracts in general-purpose languages (Go, Java) but lacks built-in token features. It's best for environments where participants are known and data privacy is essential.

Quorum is a consortium blockchain built on Ethereum. It combines Ethereum's smart contract flexibility with enhanced privacy features, making it ideal for regulated sectors like banking. Its permissioned structure supports both speed and controlled access.

✅ Platform Choice Summary:

- **Decentralized App:** Ethereum → public, decentralized, rich smart contract ecosystem

- **Supply Chain Network:** Hyperledger Fabric → secure, fast, modular, and permissioned

- **Inter-bank Application:** Quorum → private transactions, Ethereum-compatible, finance-ready

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