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BlockChain	Type	Consensus Mechanism	Permission	Speed/ Throughput	Smart Contract Support	Token Support	Use Case	Notable Technical Feature
Ethereum	Public	PoS	Open	15-30 TPS	Yes (Solidity via EVM)	Native (ETH)	DApps, DeFi, NFT's, DAOs	EVM,global decentralizati on
Hyperledger Fabric	Private	Pluggable (Default: Raft)	Require Permission	1000-2000+ TPS	Yes (Go,Jav ascript, Java)	No native token	Enterprise Supply chain, healthcare, trade	Channels, Modular architecture
Quorum	Consortium	Istanbul BFT/Raft	Require Permission	200-500+ TPS	Yes (Solidity via EVM)	Native token optional	Interbank networks, trade finance, compliance	Private Transactions With public Ethereum

📝 Short Report

Ethereum, Hyperledger Fabric, and Quorum represent three distinct blockchain types: public, private, and consortium respectively.

Ethereum, being public, offers full decentralization, making it ideal for DApps and DeFi projects. It supports Solidity smart contracts and uses Proof of Stake, but has limited throughput (~15–30 TPS) and higher gas costs, which may impact scalability for enterprise-grade apps.

Hyperledger Fabric is a permissioned private blockchain suited for enterprise use. It supports modular consensus and chaincode (smart contracts) in general-purpose languages like Go and Java. Its pluggable design and use of channels for data partitioning provide strong privacy and scalability (>1,000 TPS), though it lacks native tokenization.

Quorum, a consortium blockchain, balances privacy and performance. It supports Solidity-based smart contracts and offers better throughput than Ethereum while maintaining permissioned access control. Its ability to perform private transactions on top of Ethereum's architecture makes it well-suited for inter-bank and regulated environments.

Decentralized App: Ethereum

- Open permissionless model, allowing global participation without central control.
- Strong smart contract support using Solidity and the Ethereum Virtual Machine (EVM).
- Massive developer ecosystem and wide tool support (e.g., MetaMask, Truffle).
- Interoperability with DeFi, NFTs, and DAO protocols.

Although Ethereum's throughput is limited (~15–30 TPS) and gas fees can be high, recent upgrades like Ethereum 2.0 (PoS) and Layer 2 scaling solutions (e.g., Optimism, Arbitrum) address these limitations.

Supply Chain Among Known Partners: Hyperledger Fabric

- Permissioned model ensures only known, verified entities can join and transact.
- High throughput (1,000–2,000+ TPS) makes it suitable for real-time tracking and traceability.
- Supports modular consensus (e.g., Raft, Kafka) and chaincode in familiar languages like Go and Java, easing integration.
- Channels allow private communication and data isolation between subsets of participants, enhancing confidentiality in multi-party collaborations.

Inter-bank Financial Application: Quorum

- Built on Ethereum, it retains EVM compatibility and Solidity support while enhancing privacy and performance.
- Uses permissioned consensus protocols like Istanbul BFT or Raft, offering faster finality and low-latency consensus.
- Supports private transactions that are only visible to authorized parties, a critical feature for financial confidentiality.
- Quorum's enterprise orientation and flexibility make it suitable for cross-bank interactions that require both privacy and auditability.