**Blockchain Platform Comparison**

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| **Feature** | **Ethereum (Public)** | **Hyperledger Fabric (Private)** | **R3 Corda (Consortium)** |
| **Blockchain Name** | Ethereum | Hyperledger Fabric | R3 Corda |
| **Type** | Public | Private | Consortium |
| **Consensus Mechanism** | Proof of Stake (PoS, post-Merge) | Pluggable (e.g., Raft, Kafka) | Notary-based (pluggable) |
| **Permission Model** | Open | Permissioned | Permissioned |
| **Speed / Throughput** | ~15–30 TPS | ~1000+ TPS (configurable) | ~170 TPS (varies by setup) |
| **Smart Contract Support** | Yes (Solidity, Vyper) | Yes (Chaincode in Go, JavaScript, Java) | Yes (Java, Kotlin – JVM based) |
| **Token Support** | Native token (ETH) | No native token | No native token |
| **Typical Use Case** | dApps, NFTs, DeFi, DAOs | Supply chain, asset tracking, internal business logic | Financial services, interbank/insurance transactions |
| **Notable Technical Feature** | Layer-2 scaling, EVM, large developer community | Modular architecture, private data channels | Point-to-point data sharing, legal identity mgmt |
| **Openness** | Anyone can participate | Access restricted to authorized members | Limited to selected organizations |
| **Best For** | Public decentralized applications | Internal enterprise applications | Inter-organizational financial systems |
| **Governance** | Community-driven | Controlled by individual organizations | Governed by consortium of participants |

**Best Platform Choices & Justification:**

**1. A Decentralized App (dApp)**

* **Chosen Platform:** **Ethereum**  
   **Why:**
* Open and public access – anyone can join and interact.
* Supports smart contracts using Solidity and Vyper.
* Massive developer community and tool support.
* Native token (ETH) for handling payments, NFTs, governance, and DeFi.
* Ideal for building fully decentralized and trustless applications.

**2. A Supply Chain Network Among Known Partners**

* **Chosen Platform:** **Hyperledger Fabric**  
   **Why:**
* Permissioned blockchain – only trusted, verified members can participate.
* High performance (1000+ TPS) suitable for enterprise-level data volume.
* Modular architecture and private channels for secure, partner-specific data sharing.
* No native token – ideal for business logic without cryptocurrency dependency.

**3. An Inter-Bank Financial Application**

* **Chosen Platform:** **R3 Corda**  
   **Why:**
* Designed specifically for financial institutions and regulatory compliance.
* Emphasizes privacy with point-to-point communication.
* Smart contracts in Java/Kotlin (familiar to enterprise developers).
* Suitable for automating legal agreements, transactions, and KYC processes in banking networks.