

Why Use Blockchain Networks

Trust-minimized value, verifiable ownership, and programmable markets

Verify, do not trust

Public auditability
reduces counterparty risk

Own digital assets

Portable self-custody
with programmable rights

Ship on a network

Global distribution
without platform lock-in

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v0.1 — A contemporaneous record of perspective as of February 18, 2026

Executive Summary

Why blockchain is increasingly used as a coordination and distribution layer

Core value

- Shared ledger for multiple parties (one source of truth)
- Cryptographic verification replaces institutional trust
- Programmability enables composable markets and automation
- Digital ownership becomes portable and auditable

Strategic implications

- Bitcoin illustrates “verifiable scarcity” and high portability versus gold
- NFT standards enable on-chain ownership state and transfer history
- Tokenization moves traditional assets and software licenses onto networks
- Regulation and accounting standards are becoming more concrete

Practical framing

- Blockchain is not a database upgrade; it is a new market substrate (settlement + distribution).
- Best fit: multi-party workflows where neutrality, auditability, and composability matter.
- Poor fit: single-operator systems with fast-changing private data and low trust risk.

What Problem Does Blockchain Solve?

Coordinating value and rights across parties without a single trusted operator

Trust minimization

- Consensus replaces a central “bookkeeper”
- Rules are enforced by software + cryptography
- Auditability is native (public proofs)

Shared state

- One ledger replicated across nodes
- Deterministic settlement and replayable history
- Reduced reconciliation overhead

Programmability

- Smart contracts automate transfers and constraints
- Composability: protocols integrate like open APIs
- Programmable escrow, royalties, and governance

Digital ownership

- Native representation of assets and permissions
- Portable self-custody and permissionless transfer
- Transparent provenance (especially for NFTs)

Terminology: Network, Coin, Token, NFT

Commonly conflated terms mapped to concrete technical meanings

Blockchain network

- A protocol + nodes that maintain a shared ledger
- Defines consensus rules and transaction validity
- Examples: Bitcoin, Ethereum

Coin (native asset)

- Native to a network; used for fees and security
- Not created by smart contracts on that chain
- Examples: BTC, ETH

Token (smart-contract asset)

- Issued by a smart contract; follows a standard
- Fungible (ERC-20) or non-fungible (ERC-721)
- Examples: stablecoins, governance tokens

NFT (non-fungible token)

- Unique token ID with on-chain ownership state
- Transfer history is recorded as events
- Useful for provenance, licenses, memberships

Coins vs Tokens

Networks define the “operating system”; tokens define application-level assets

Native coin (e.g., BTC, ETH)

- Pays transaction fees (gas / miner fees)
- Secures the network via incentives
- Acts as the base settlement asset on that chain
- Supply and issuance are part of protocol rules

Token (e.g., ERC-20)

- Created and managed by smart contracts
- Represents value, rights, access, or claims
- Interoperable across wallets/apps via standards
- Examples: stablecoins, RWAs, governance tokens

Key distinction

Coins are network-native. Tokens are applications built on networks. “Blockchain” is the shared infrastructure layer.

Bitcoin vs Gold: Verifiability and Portability

A framing emphasized by Changpeng Zhao (CZ) in debate with Peter Schiff: <https://www.youtube.com/watch?v=X4gxTGDzil4>

Physical gold frictions

- Authenticity requires an assay or trusted mint
- Transport introduces theft, loss, and border risk
- Divisibility is limited by physical denomination
- Custody often implies reliance on third parties

Bitcoin properties

- Transactions are verifiable by any node (public ledger)
- Divisible to satoshis (1 BTC = 100,000,000 sats)
- Portable self-custody via mnemonic seed phrases
- Supply is defined by protocol rules (21M cap)

Design takeaway

Blockchain turns verification into computation: authenticity and ownership become a query, not a forensic process.

How Bitcoin Removes a Trust Layer

Proof over promises: ownership is derived from signatures + consensus

Gold custody typically requires:

- Authentication (assay, serials, trusted mint)
- Secure transport and storage (vaults)
- Intermediaries (dealers, custodians)
- Paperwork and jurisdictional controls

Bitcoin ownership is derived from:

- Private keys (signatures authorize spending)
- Public ledger (history is globally replicated)
- Consensus rules (validity is deterministic)
- Optional custody (self-custody or institution)

Resilience Under Conflict and Capital Controls

Connectivity is required, but networks are redundant and usage can increase under constraints

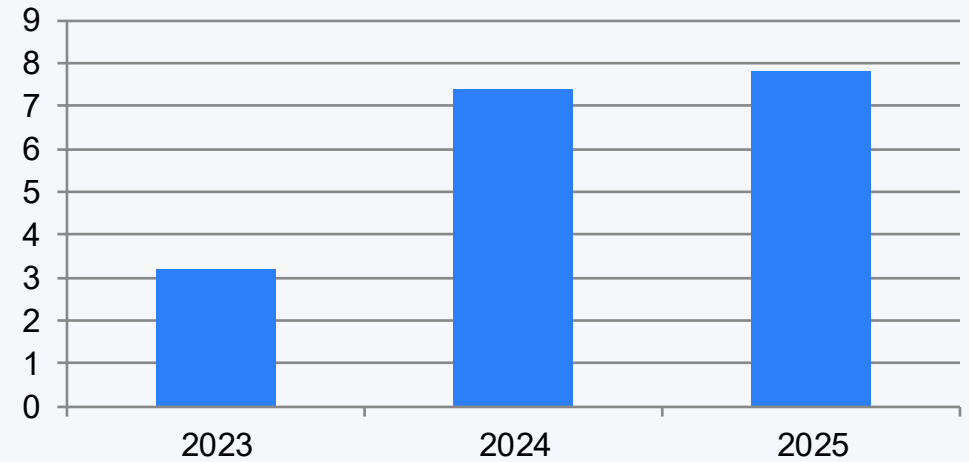
Operational realities

- On-chain settlement requires some route to broadcast transactions
- Transactions can be created offline; broadcasting can use alternative channels
- Redundancy exists: satellite sync and mesh relay experiments
- Outages and censorship remain material risks (especially during war)

Observed pattern

- In sanctioned or high-inflation contexts, demand for portable digital rails can rise.
- Such usage also heightens compliance risk and attracts enforcement attention.

Iran: estimated crypto activity (USD bn)



Estimates reported by Reuters (citing Chainalysis).

Generational Dynamics

Housing affordability pressure vs. higher digital-asset accessibility among younger cohorts

Macro backdrop: housing

- Across the OECD, younger cohorts report higher concern about housing affordability.
- High rates and elevated prices concentrate risk in real-estate-heavy portfolios.
- A potential repricing can disproportionately affect older, property-exposed cohorts.

Digital rails: adoption

- Crypto usage is higher among younger adults in survey data.
- Minimum ticket sizes are low (fractional ownership is native).
- Access is global: wallets and networks are not country-bound marketplaces.

Interpretation (hypothesis)

If real-estate returns compress while network-based assets and tokenized products expand, younger cohorts may face less exclusion from asset formation.

Policy and Institutionalization

Legal, accounting, and market-structure signals are becoming clearer

Selected milestones (non-exhaustive)

- EU: Markets in Crypto-Assets Regulation (MiCA) establishes an EU-wide framework for crypto-assets and service providers.
- US: SEC approved the listing and trading of spot Bitcoin exchange-traded products (January 2024).
- US: FASB ASU 2023-08 moves many crypto holdings to fair-value accounting (effective for many entities starting 2025).
- US: GENIUS Act establishes a framework for payment stablecoins (enacted 2025).
- US: CFTC launched a digital asset markets pilot program (including tokenized collateral use cases).
- IFRS: IFRS/IAS guidance has clarified cryptocurrencies are not cash; often treated as intangible assets under IAS 38.

Why it matters

Institutional adoption accelerates when custody, reporting, and compliance become operationally legible.

NFTs: Ownership and History On-Chain

Two primitives: current owner state + immutable transfer logs

Why NFTs matter beyond “collectibles”

- A token ID has a canonical on-chain owner (ownerOf).
- Transfers emit events that create a provenance trail.
- These primitives enable licenses, memberships, receipts, and credentials.
- Settlement is global and typically denominated in the network’s asset (e.g., ETH).

ERC-721 primitives (conceptual)

```
owner = ownerOf(tokenId)
```

```
event Transfer(from, to, tokenId)
```

```
// state: current owner
```

```
// log: full transfer history
```

Design note

NFTs record on-chain ownership; legal rights (copyright, warranties) still require explicit terms and enforcement.

NFTs as Programmable Licenses

A token can function as an on-chain entitlement with transferability and auditability

License pattern

- NFT = entitlement to use software or content
- `ownerOf(tokenId)` gates access (on-chain allowlist)
- Transfer acts as assignment (secondary sales)
- Optional royalty logic (depends on marketplace support)

Benefits

- Global distribution (no single app store dependency)
- Transparent ownership and transfer history
- Composable integrations across wallets and apps
- Native settlement in crypto (expand customer base)

Caution

Security, UX, and legal terms remain essential; on-chain tokens are not a substitute for compliance or support.

Tokenization: Real-World Assets Move On-Chain

Traditional finance is experimenting with on-chain issuance and settlement

“Tokenization changes all that. If SWIFT is the postal service, tokenization is email itself—assets move directly and instantly, sidestepping intermediaries.”

Larry Fink, BlackRock Chairman’s Letter (2025)

Example: tokenized fund

- BlackRock launched BUIDL, a tokenized fund on Ethereum (March 2024).
- Benefits cited: on-chain issuance/trading, transparent settlement, and cross-platform transfer.

Why it matters

- Tokenization standardizes ownership representation.
- Settlement and transfer can become faster and more transparent.
- Financial products become programmable building blocks.

Networks as the Next Software Marketplace

Open networks can distribute and monetize software globally

Thesis

- Software distribution can shift from centralized app stores to open networks.
- Smart contracts provide shared rails for payments, access control, and composition.
- Open-source software can be sold globally without dependency on a single platform operator.

Enablers

- Permissionless publishing (deploy contracts to a public chain)
- Standard wallets and token standards (ERC-20/721)
- Global settlement (stablecoins or native coins)
- Composable integrations (“money legos”)

Constraints

- User onboarding and key management remain difficult
- Fees and scalability depend on the chain and L2s
- Compliance (KYC/AML, consumer protection) varies
- On-chain code risk (audits are essential)

When Blockchain Is the Right Tool

Decision checklist for production systems

Good fit when

- Multiple parties must write to a shared state
- Neutrality and censorship resistance matter
- Auditability is required (provable history)
- Assets/rights must be transferable and composable
- Interoperability across organizations is a priority

Poor fit when

- One operator is fully trusted (no adversarial setting)
- Data must remain private and frequently mutable
- Latency must be milliseconds with high throughput
- Governance requires unilateral changes
- On-chain costs exceed benefits

Key Risks and Mitigations

Operational and governance hygiene determines outcomes

Risk register (high level)

- Custody and key loss → Hardware wallets, multisig, recovery procedures
- Smart contract exploits → Audits, formal verification, limited upgrade scope
- Regulatory exposure → Jurisdictional analysis, KYC/AML where required
- Volatility and pricing risk → Stablecoin rails, treasury policies, hedging
- User experience friction → Progressive onboarding, abstraction layers
- Network constraints (fees, congestion) → L2 usage, batching, failover paths

Principle

The technology reduces trust in intermediaries, but increases the need for disciplined security and governance.

Key Takeaways

Blockchain is a trust-minimized network for value, ownership, and coordination

- Blockchain is best understood as a neutral network that maintains shared state with verifiable rules.
- Bitcoin highlights portability, divisibility, and verifiability versus physical stores of value.
- NFT standards add on-chain ownership state and provenance, enabling licenses and credentials.
- Tokenization connects traditional assets and workflows to programmable settlement.
- Regulatory and accounting signals are maturing, but operational risks remain non-trivial.

Strategic view: “Software is sold on networks.”

Open networks can reduce platform dependency and expand global distribution.

Selected References

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