INSTITUTIONAL TOKENISATION

L1 COMPETITOR ANALYSIS | 2025

A Competitor Analysis of Layer-1 Blockchains

Evaluating Ethereum, Solana, Avalanche & XRP Ledger

June 2025

Executive Summary

The tokenisation of real-world assets (RWAs) has moved well beyond pilot stages. By mid-2025, the on-chain RWA market (excluding stablecoins) is estimated at approximately $25 billion, a figure that represents roughly fivefold growth since 2022 (RWA.xyz / RedStone, 2025). Conservative projections from McKinsey place the 2030 addressable market between $2 trillion and $4 trillion; more bullish scenario modelling extends substantially beyond that.

Institutions are no longer debating whether to tokenise. The question is which blockchain infrastructure can meet their non-negotiable requirements: regulatory compliance, settlement finality, cost predictability, operational uptime, and permissioned access. This report provides an evidence-based comparison of four Layer-1 networks (Ethereum, Solana, Avalanche, and the XRP Ledger), evaluated against the criteria that institutional procurement decisions actually reflect.

The headline finding is that no single chain is universally optimal. The evidence points to a multichain institutional landscape, not a winner-takes-all outcome:

Chain	Institutional Position
Ethereum	Default institutional anchor; deepest ecosystem, largest RWA TVL ($11B+), broadest custodial and legal precedent, but gas volatility and absent native permissioning remain structural limitations
Solana	Strongest throughput and settlement economics; institutional deployments accelerating, but validator count trends and residual reliability concerns mean fiduciaries may require 12–18 more months of clean performance before treating it as a primary rail
Avalanche	Most mature permissioned hybrid architecture via Evergreen Subnets; best fit for institutions requiring protocol-level KYC gating and controlled validator sets; the challenge is moving pilots into production
XRPL	Compliance-native design with 12+ years of uninterrupted uptime; strongest for cross-border settlement and simpler tokenised instruments; programmability ceiling limits complex product structures until EVM sidechain is live at scale

The most likely institutional outcome: Ethereum anchors compliance-heavy products, Solana handles high-volume settlement, Avalanche Evergreen powers bank-permissioned environments, and XRPL provides cross-border payment rails. BlackRock's BUIDL fund, already deployed across eight blockchains, is the clearest signal that this multichain future is already underway.

Methodology

This report evaluates four Layer-1 blockchain networks against institutional decision criteria drawn from publicly available infrastructure assessments, primary chain documentation, and institutional deployment announcements. The seven evaluation axes are: compliance and regulatory tooling; settlement finality and speed; transaction cost predictability; network reliability and uptime; permissioned or hybrid access options; developer ecosystem maturity; and live institutional adoption. Scorecard ratings are relative to this peer group rather than absolute, and reflect publicly observable product maturity and technical architecture as of mid-2025. All source links were active at time of writing; readers are encouraged to verify figures directly given the pace of change in this market.

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1. What Institutions Actually Need

Understanding institutional requirements is the only sensible starting point. Their priorities diverge sharply from those of the crypto-native startups that originally built and evangelised these chains.

WHAT INSTITUTIONS CARE ABOUT AT A GLANCE	
Regulatory Compliance	Must satisfy AML/KYC, MiFID II, MiCA, securities law
True Finality	Cryptographic certainty before settlement booking
Predictable Costs	Treasury teams cannot absorb gas spikes on high-volume runs
Network Uptime	Outages during market hours mean failed settlements
Permissioned Access	Regulated assets must be restricted to KYC-verified parties
Qualified Custody	HSM integration and institutional custodians – not hot wallets
Legacy Integration	Must connect to SWIFT, T+2 rails, and core banking systems

1.1 The Compliance-First Reality

A useful mental model distinguishes two types of buyer. A fintech startup building a retail yield product can absorb regulatory ambiguity, push compliance into a later funding round, and iterate in public. A tier-one bank issuing a tokenised money market fund cannot. It needs regulator-approved infrastructure before the first dollar of investor capital moves, and it needs its technology stack to survive a front-page Financial Times story without explanation.

Infrastructure assessments of TradFi tokenisation consistently identify evaluation axes for institutional blockchain selection that include: settlement speed, cost volatility, contagion risk, illicit exposure, and governance. Notably, raw throughput, the metric that tends to dominate public blockchain marketing, ranks below cost predictability and settlement finality in actual institutional procurement conversations.The differences between startup and institutional buyers are worth making explicit, because they shape every chain evaluation that follows. A startup can self-custody assets in a hot wallet, deploy on a public chain with no access controls, absorb a 30-minute outage as a minor inconvenience, and treat compliance as a future problem. None of these are options for a regulated institution. Banks, asset managers, and insurers face mandatory AML/KYC obligations before any counterparty can hold a tokenised asset. They require qualified custodians, typically with HSM (hardware security module) integration and insurance backing, rather than software wallets. They must document their governance of every vendor, including blockchain protocol teams. They need legal

opinions on every jurisdiction where a digital asset may be received or transferred. And they operate under uptime expectations inherited from existing capital markets infrastructure: a settlement system going offline during trading hours is not an acceptable disruption. The procurement cycle for an institutional blockchain deployment also looks nothing like a startup's: it typically involves risk committees, technology review boards, compliance sign-off, and legal review over months or quarters, not days.

2. Market Context and Scale

The growth figures contextualise why all four networks in this report are investing heavily in institutional products.

Metric	Current (mid-2025)	2030–2033 Projection
On-chain RWA Market (excl. stablecoins)	~$25B (rapid growth since 2022)	$2T–$19T range (McKinsey to higher-end scenarios)
Tokenised Treasuries & Money Market Funds	~$7.4B (strong YTD growth)	Multiple trillions; primary institutional entry point
Private Credit (largest segment)	~$14B; ~61% of on-chain RWA market	Expected to remain dominant as institutional credit moves on-chain
BlackRock BUIDL Fund AUM	~$2.5B across eight blockchains	Benchmark institutional product; multichain expansion ongoing

BlackRock's BUIDL fund is the most scrutinised institutional tokenisation product in the market. Launched on Ethereum in March 2024, it subsequently expanded to Aptos, Arbitrum, Avalanche, Optimism, Polygon, Solana, and BNB Chain, demonstrating that even the world's largest asset manager treats blockchain infrastructure as a portfolio decision rather than a single-chain commitment. The multichain era for institutional tokenisation is already underway.

3. Chain-by-Chain Analysis

3.1 Ethereum

Ethereum is the undisputed incumbent in institutional tokenisation. Per RWA.xyz and Coindesk data, it hosted over $11 billion in RWA value by mid-2025, a larger figure than all other Layer-1 networks combined. (Figures exclude stablecoins and are subject to rapid revision as new products launch.) BlackRock, Franklin Templeton, Hamilton Lane, KKR, and many other institutional names chose Ethereum first. It holds the largest developer ecosystem in blockchain, deep liquidity, and the longest track record for smart-contract-based financial products. The ERC-3643 (T-Rex) standard, developed specifically for compliant security token issuance, is now embedded in major tokenisation platforms including Securitize.

Post-Merge, Ethereum shifted to Proof of Stake, reducing energy consumption by approximately 99.95%. It is compatible with the EU's MiCA regulation and was included in the European Central Bank's wholesale DLT settlement pilot. JPMorgan's Onyx platform, one of the largest institutional blockchain deployments in the world, is built on a permissioned Ethereum fork.

Ethereum's institutional weaknesses are well-documented. Transaction fees remain volatile: during network congestion, costs can spike substantially, making high-volume settlement operationally unpredictable. When institutional products are deployed on Ethereum Layer-2 networks, the true time to finality on the base layer can extend to 15 minutes or longer, a material concern for high-value settlement.

Strengths & Opportunities	Weaknesses & Risks
Largest institutional RWA TVL ($11B+); dominant market position	Gas fees volatile: can spike significantly during congestion
Unmatched developer ecosystem depth (Solidity, Foundry, Hardhat)	Native L1 finality ~12–15 sec; L2 finality can extend 15 min+
Established compliance standards: ERC-3643, EIP-3525 for structured products	No native permissioning; whitelist logic must be built at smart contract layer
Broad custodial support: Fireblocks, Anchorage, BNY Mellon all native	Network complexity grows with each L2 addition; fragmented liquidity
Regulatory familiarity: MiCA-compatible, ECB pilot participant	High developer cost for sophisticated compliance logic vs. XRPL native features
EVM compatibility enables portability to Avalanche C-Chain	Modest throughput on L1 (~15–30 TPS); institutions reliant on third-party L2s

3.2 Solana

Solana offers the highest raw throughput of any network in this comparison, and its institutional trajectory has accelerated materially through 2025. RWA TVL on Solana grew significantly through 2025, driven by a cluster of live institutional deployments. The network hosts Franklin Templeton's FOBXX fund (approximately $594 million in tokenised US government securities per Franklin Templeton's public disclosures), BlackRock's BUIDL share class, and Ondo Finance's USDY and OUSG products. Solana has also attracted institutional interest for commercial debt instrument settlement, with JPMorgan among institutions experimenting with the network for high-throughput settlement use cases.

The technical case is strong. Solana processes between 50,000 and 65,000 TPS with near-zero transaction costs and slot confirmation around 400 milliseconds. This throughput profile is the reason Franklin Templeton explicitly cited Solana's architecture when expanding its money fund to the network, noting the chain's demonstrated adoption and its potential for high-throughput, monolithic architectures.

The caveat the institutional community has not entirely set aside is reliability. Solana experienced multiple major outages between 2021 and 2024. The network subsequently ran without a confirmed major outage for over 16 consecutive months from February 2024 through mid-2025, the longest stable stretch in its history. Independent monitoring services have flagged intermittent disruptions during this period that were not formally acknowledged; those reports warrant continued scrutiny. The introduction of the Firedancer client (developed by Jump Crypto) provides meaningful redundancy through independent client implementation. The validator count has also declined substantially from its 2023 peak, raising ongoing questions about decentralisation that institutions with fiduciary obligations are tracking.

Solana currently lacks a native permissioned environment equivalent to Avalanche's Evergreen subnets. Compliance tooling relies on third-party providers rather than protocol-level controls; an important gap for institutions requiring KYC-gated whitelists baked into chain architecture.

Strengths & Opportunities	Weaknesses & Risks
Highest raw throughput (50,000–65,000 TPS) of any L1 in this comparison	Outage history (2021–2024) creates residual institutional hesitancy
Near-zero transaction costs enable high-volume settlement economics	Validator count has declined substantially, raising decentralisation concerns
400ms slot confirmation, fastest effective finality among these four chains	No native permissioned chain architecture; whitelist logic is application-layer only
Strong institutional adoption momentum: Franklin Templeton, BlackRock, VanEck	Single client risk historically present; Firedancer not yet fully deployed
Firedancer client adds client diversity and reduces single-client risk	Rust-based development has a steeper learning curve than Solidity/EVM
Alpenglow consensus upgrade (2026 roadmap) targets ~100–150 ms finality	Fee predictability lower than XRPL or Avalanche subnets under peak load
Pyth and Switchboard oracles provide institutional-grade real-time pricing	Reputation risk from association with retail activity on same public chain

3.2.1 Solana: What Must Improve, Institutional Priorities

For Solana to consolidate its position as a primary institutional settlement rail rather than a secondary or experimental one, five areas require continued progress:

- Validator decentralisation: The decline in active validators must stabilise or reverse. Fiduciaries managing third-party capital will scrutinise concentration risk, and a validator count trending toward a small number of high-stake operators directly challenges the decentralisation argument that underpins blockchain's institutional value proposition.
- Firedancer full deployment: The client diversity that Firedancer provides is critical infrastructure. Full production deployment (not testnet availability) is the milestone that materially changes the reliability narrative for institutional audiences.
- Native permissioning framework: Protocol-level permissioned environments (analogous to Avalanche Evergreen) would unlock a category of institutional deployment currently unavailable on Solana. Third-party compliance layers reduce the chain's appeal for institutions that require infrastructure-level control.
- Extended outage-free track record: Solana needs to demonstrate multi-year clean uptime, not months. The 16-month stable period through mid-2025 is encouraging but insufficient for the most conservative institutional actors managing pension capital or insurance assets.
- Smart contract auditability standards: As institutional deployments grow, Solana's Rust-based development environment requires deeper tooling support for formal verification and third-party auditing at standards comparable to the Ethereum ecosystem.

3.3 Avalanche

Avalanche occupies a strategically distinct position: it is the only chain in this group offering a purpose-built institutional deployment architecture at the protocol level. The Evergreen L1 product enables financial institutions to deploy permissioned environments with built-in KYC/KYB gating, restricted validator sets, custom gas tokens, jurisdictional geofencing, and controlled participant access, while remaining connected to Avalanche's main network infrastructure.

The institutional track record on Evergreen is meaningful. Citi, in collaboration with Wellington Management and WisdomTree, ran private market tokenisation pilots on Avalanche's permissioned subnet environment covering end-to-end asset transfers, secondary trading, and collateralised lending scenarios. ANZ Bank used Evergreen for a tokenised asset settlement project with Chainlink integration. T. Rowe Price and Cumberland have used the permissioned environment. SkyBridge Capital tokenised a significant hedge fund allocation on Avalanche in 2025. The Avalanche Foundation committed up to $50 million to purchase tokenised RWA assets minted on the network through its Vista initiative.

The C-Chain offers roughly 4,500 TPS with approximately one-second finality. EVM compatibility means developers can port Ethereum smart contracts directly, lowering migration friction for institutions already holding Ethereum expertise.

Avalanche's weaknesses are real. The C-Chain suffered an outage in February 2024, a direct comparator to Solana's reliability criticisms. The developer ecosystem, while growing, remains smaller than Ethereum's. Many institutional pilots on Evergreen remain in proof-of-concept rather than live production; the transition to full production deployments is the key milestone to watch.

Strengths & Opportunities	Weaknesses & Risks
Evergreen Subnets: most developed permissioned-plus-public hybrid architecture	C-Chain outage February 2024 undermines uptime narrative
Built-in KYC/KYB gating, restricted validators, jurisdictional geofencing at protocol level	Smaller developer ecosystem and TVL than Ethereum; pilots mostly pre-production
EVM compatibility: institutions with Ethereum expertise can migrate efficiently	Subnet customisation creates fragmentation: each Evergreen L1 is its own liquidity island
Proven institutional pilots: Citi, Wellington, ANZ, T. Rowe Price	AVAX token volatility complicates institutional risk frameworks
C-Chain: ~4,500 TPS, ~1 sec finality, low fees; sound baseline	Cross-subnet interoperability adds complexity
$50M Avalanche Vista fund directly incentivises on-chain RWA issuance	Fewer institutional custodians natively support AVAX vs ETH
BlackRock BUIDL share class active on Avalanche	

3.4 XRP Ledger (XRPL)

The XRP Ledger has over 12 years of continuous operational history and has processed substantial cumulative transaction value. Where Ethereum and Solana require institutions to build compliance logic into smart contracts, XRPL builds compliance directly into the protocol. Native features include issuer-defined authorisation, on-chain freeze capabilities (essential for sanctions compliance), multi-signature accounts, deep freeze for blocking sanctioned transfers, and metadata for attestation, available without custom smart contract development.

XRPL's RWA tokenisation activity grew substantially in 2025, driven by institutional partnerships that validate the network's institutional readiness. Archax, the FCA-authorised digital assets exchange, tokenised access to abrdn's £3.8 billion liquidity fund on XRPL in November 2024. HSBC has conducted tokenisation pilots on XRPL. Ripple's acquisition of Hidden Road, an established prime

brokerage, delivered institutional-grade settlement infrastructure. Ripple's stablecoin RLUSD received NYDFS approval in December 2024, further embedding XRPL in regulated finance.

The 2025 'Credentials' protocol amendment added programmable KYC/AML credential issuance directly on-chain. The Multi-Purpose Token (MPT) standard supports structured financial products that previously required Ethereum-style smart contracts.

The limitations are equally clear. XRPL has no native smart contract capability; complex programmable logic requires either workarounds or migration to the planned EVM-compatible sidechain. With 1,500 TPS, XRPL's throughput is the lowest in this group. The developer ecosystem is relatively small, and years of SEC litigation, now resolved, left residual uncertainty that some compliance teams are still working through.

Strengths & Opportunities	Weaknesses & Risks
12+ years of uninterrupted network uptime; best reliability record in this group	No native smart contract layer limits programmability for complex instruments
Native compliance tools: authorised trust lines, freeze, deep freeze, multi-sig, MPT standard	1,500 TPS throughput is the lowest in this comparison
3–5 second finality; sub-penny transaction costs (as low as $0.0002)	Small developer ecosystem relative to Ethereum; fewer tooling choices
FCA-authorised Archax deployment on abrdn's £3.8B fund; live production, not a pilot	SEC litigation history created multi-year institutional hesitancy (resolved but not forgotten by all)
RLUSD (NYDFS-approved stablecoin) provides regulated fiat on/off-ramp	Planned EVM sidechain (for smart contract use cases) not yet live at scale
No smart contracts needed for basic tokenisation; reduces attack surface	RWA TVL remains a fraction of Ethereum's, growing from a smaller base
Energy efficient: strong ESG alignment for sustainability-conscious institutions	Federated consensus (RPCA) model is less decentralised than PoS alternatives by some metrics

4. Comparative Metrics

4.1 Full Technical and Institutional Metrics

Metric	Ethereum	Solana	Avalanche	XRP Ledger
Consensus Mechanism	PoS (Casper FFG)	PoH + Tower BFT	Snowball BFT / PoS	Federated Consensus (RPCA)
Throughput (TPS)	~15–30 native; 100–4,000+ on L2s	50,000–65,000	4,500 (C-Chain); subnet-dependent	1,500
Time to Finality	~12–15 sec (soft); 15+ min via L2s	~400 ms	~1 sec (C-Chain)	3–5 seconds
Avg Transaction Cost	$0.50–$15 (volatile)	~$0.0025	~$0.01 (C-Chain)	~$0.0002
Cost Predictability	Moderate (EIP-1559)	Moderate (spikes at peak)	High on subnets	Very High (protocol-set burn)
On-chain RWA TVL (mid-2025)	$11B+ (dominant)	Significant, growing rapidly	Meaningful; concentrated on pilots	Growing; small base
Native Compliance Tools	ERC-3643 via smart contracts	SPL tokens; third-party providers	Built-in KYC gates on Evergreen L1s	Native auth trust lines, freeze, multi-sig
Network Uptime	High; no major outages post-Merge	Outages 2021–2024; stable since Feb 2024	C-Chain outage Feb 2024	12+ years continuous uptime
Smart Contract Language	Solidity (EVM; largest dev base)	Rust (Sealevel; growing)	Solidity (EVM-compatible)	No smart contracts needed natively
Flagship Institutional Deployment	BlackRock BUIDL (~$2.5B); Franklin FOBXX	Franklin FOBXX ($594M); BlackRock BUIDL share class	Citi + Wellington pilot; BlackRock BUIDL share class	Archax / abrdn £3.8B fund; HSBC pilots
Permissioned / Hybrid Option	No native; L2 permissioned chains	No native; partition via dApps	Evergreen Subnets (key differentiator)	Permissioned DEX; planned EVM sidechain
Regulatory Risk (2025)	Low (MiCA-compatible, ECB pilot)	Moderate (stable since Feb 2024 but history noted)	Moderate (subnet regulatory mapping ongoing)	Low-Moderate (SEC settled; RLUSD approved)

4.2 Institutional Readiness Scorecard

Ratings below are relative to this peer group, based on publicly observable product maturity, live institutional deployments, and technical architecture as of mid-2025. Scores are qualitative and intended to support comparison, not replace use-case-specific evaluation.

Criterion (★★★★★ = Best in group)	Ethereum	Solana	Avalanche	XRP Ledger

Compliance / Regulatory Tooling	★★★★☆	★★★☆☆	★★★★★	★★★★☆
Finality & Settlement Speed	★★☆☆☆	★★★★★	★★★★☆	★★★★☆
Cost Predictability	★★☆☆☆	★★★☆☆	★★★★☆	★★★★★
Network Reliability / Uptime	★★★★★	★★★☆☆	★★★★☆	★★★★★
Developer Ecosystem & Tooling	★★★★★	★★★★☆	★★★☆☆	★★☆☆☆
Institutional Track Record	★★★★★	★★★★☆	★★★★☆	★★★☆☆
Permissioned / Hybrid Options	★★☆☆☆	★★☆☆☆	★★★★★	★★★★☆
OVERALL INSTITUTIONAL READINESS	★★★★☆	★★★☆☆	★★★★☆	★★★★☆

4.3 Use Case Fit Matrix

Use Case	Ethereum	Solana	Avalanche	XRP Ledger
Tokenised Money Market Funds / Treasuries	✓✓ Best fit	✓✓ Best fit	✓ Good fit	✓ Good fit
Tokenised Equities / Stocks	✓✓ Best fit	✓ Good fit	✓ Good fit	~ Workable
Private Credit / Bonds	✓✓ Best fit	✓ Good fit	✓✓ Best fit	✓ Good fit
Stablecoin Settlement / Payments	~ Workable	✓✓ Best fit	✓ Good fit	✓✓ Best fit
Real Estate Tokenisation	✓✓ Best fit	✓ Good fit	✓ Good fit	✓ Good fit
Permissioned Institutional DeFi	~ Workable	~ Workable	✓✓ Best fit	✓✓ Best fit
Cross-border Settlement	~ Workable	✓ Good fit	✓ Good fit	✓✓ Best fit
High-frequency On-chain Trading	✗ Poor fit	✓✓ Best fit	✓ Good fit	✓ Good fit

5. Where Each Chain Currently Leads

5.1 Ethereum: Institutional Default by Network Effect

Ethereum is where institutions go when they want to be certain. The $11 billion in RWA TVL reflects a decade of developer effort, regulatory engagement, and institutional familiarity. For an asset manager launching a tokenised product in 2025, Ethereum's ecosystem means custodians that already support the token standard, auditors who understand the codebase, legal opinions that reference established precedent, and counterparties that hold EVM-compatible wallets. That network-effect moat is real and not easily replicated by faster or cheaper alternatives.

Where Ethereum demonstrably outperforms all three competitors: developer talent depth, protocol-level security track record post-Merge, compliance tooling maturity (ERC-3643), and breadth of qualified custodians. The EVM as a standard also means institutional expertise translates to Avalanche's C-Chain, reducing training and audit costs.

5.2 Solana: Throughput for High-Frequency Finance

Where volume matters more than complexity, Solana has a genuine technical advantage. The settlement economics are compelling: processing large volumes of tokenised instrument redemptions daily at fractional-cent transaction costs is operationally viable on Solana in ways that Ethereum L1 cannot match at current fee levels. The oracle ecosystem (Pyth, Switchboard) is also better suited for real-time pricing of high-frequency instruments than alternatives.

The institutional narrative is strengthening, but the reliability history requires continued stabilisation, particularly the validator count trends, which warrant monitoring by institutions with fiduciary obligations.Best for: High-volume tokenised asset settlement where transaction economics are the dominant constraint; institutions comfortable with a more recent reliability track record and willing to build compliance controls at the application layer.Not best for: Conservative fiduciaries (pension funds, insurance) requiring multi-year proven uptime; use cases requiring native permissioned chain architecture.

5.3 Avalanche: Architecture Designed for Institutional Compliance

For institutions where the primary concern is control over who participates, which validators process transactions, and how compliance is enforced at the infrastructure level, Avalanche Evergreen is the most directly relevant offering in this group. No other L1 here provides a permissioned environment that remains connected to public liquidity while giving the deploying institution control over validator set, KYC gating, and transaction rules. For a bank building a private credit tokenisation platform, that architecture directly addresses the compliance questions that commonly halt projects in internal governance processes.Best for: Banks, insurers, and regulated asset managers that cannot operate on a fully public chain; private credit, permissioned secondary market platforms, and any deployment requiring controlled participant sets at the infrastructure layer.Not best for: Institutions prioritising the deepest developer ecosystem or broadest custodian support; use cases where liquidity aggregation across subnets is essential.

5.4 XRP Ledger: Compliance Native, Payments Proven

For use cases centred on cross-border settlement and stablecoin-denominated payments, XRPL's 12-year uptime record and sub-penny fees make a compelling operational case. The Archax partnership, tokenising access to abrdn's £3.8 billion fund on a network with built-in freeze and authorisation primitives, is a serious institutional deployment with FCA oversight. The RLUSD stablecoin approval from NYDFS gives XRPL a regulated fiat settlement layer that Solana and Avalanche currently lack at equivalent regulatory depth.

6. Key Gaps and Priority Improvements

Chain	Priority Gap	Key Milestone to Watch
Ethereum	Gas fee predictability on L1; L2 finality risk for high-value settlement; native permissioning absent	EIP-4844 (proto-danksharding) impact on institutional L2 economics; Verkle tree upgrades
Solana	Reliability track record; validator count decline; absence of native permissioned environments; smart contract auditability vs. Ethereum standards	Firedancer full production deployment; Alpenglow consensus upgrade (~100ms finality target)
Avalanche	Subnet liquidity fragmentation; C-Chain outage in Feb 2024 undermines uptime narrative; developer ecosystem smaller than Ethereum/Solana	Cross-subnet liquidity aggregation via AWM; moving Evergreen pilots from testnet to production
XRP Ledger	No native smart contract capability limits programmable instruments; 1,500 TPS ceiling may constrain volume growth; small developer ecosystem	EVM-compatible sidechain roadmap; if live and stable, combined with native compliance tools, this would be a significant capability uplift

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7. Conclusions

The tokenisation of institutional financial assets is not a single problem with a single solution; the four chains analysed here each offer distinct and legitimate value propositions for different institutional segments.

Ethereum will remain the starting point for any institution that needs the broadest counterparty compatibility, deepest custodial integration, and most established legal and regulatory precedent. Its position is not under immediate threat; the institutional inertia that built $11 billion in RWA TVL on Ethereum is itself a form of infrastructure.

Solana is the most compelling choice for high-frequency, high-volume tokenised asset settlement where transaction economics dominate. The chain's institutional narrative has improved materially, but the validator count trend and historical reliability concerns mean that fiduciaries managing third-party capital will likely require another 12–18 months of clean performance before treating Solana as a primary settlement rail.

Avalanche presents the strongest architectural answer to the compliance-first institution that cannot operate on a fully public chain. The Evergreen permissioned subnet model is genuinely differentiated, and the roster of financial institutions that have piloted it (Citi, Wellington, ANZ), is institutional by any definition. The challenge is moving pilots into production.

The XRP Ledger is the most underappreciated chain in institutional tokenisation discussions. Twelve years of uninterrupted uptime, native compliance tools at the protocol layer, sub-penny fees, and growing institutional deployments make a substantive case. Its ceiling is the absence of smart contract programmability, which the planned EVM sidechain aims to address. Until that roadmap is live at scale, XRPL's sweet spot remains regulated stablecoin settlement and simpler tokenised instruments.

The multichain future is already here. BlackRock BUIDL on eight chains, Franklin Templeton across multiple networks, Securitize's infrastructure spanning Ethereum through BNB Chain; the most likely institutional outcome is not a winner-takes-all chain but a landscape where each of these four networks plays a distinct and complementary role. Institutions building infrastructure today should evaluate chains against their specific use case, not a generalised league table.

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