PraSaga Foundation

VALUATION RESEARCH · 13 SEPTEMBER 2026

True Valuation Metrics for Global Open Permissionless Decentralized Trustless Layer 1 Blockchains

A senior analyst framework establishing multi-dimensional valuation criteria, with compositional value as a central component, and an honest assessment of where current practice fails.

EXECUTIVE CLASSIFICATION: Public Campaign Document

Companion instrument: free public L1 valuation tool, public release 1, Tier 1, Tier 2, and sandbox USER UPLOAD. Hosted at: valuation.prasaga.com. Illustrative scenarios only. Not a price target, not audited FDV, not investment advice.

Executive Summary

Why this paper now

In September 2026, the market named the valuation problem this paper addresses.

Anatoly Yakovenko argued that user and capital behavior in crypto is still hard to underwrite because **moats are thin: there is little friction between apps, chains, and wallets.** Take-rate collapses when the user can switch. That is the TVL-and-fee-leaderboard market, flow that can leave tonight.

Raoul Pal argued the opposite half of the same fact: you do not DCF an L1. You value **what the chain secures**. Turn the settlement switch off and the dependent stack is what you were pricing, not last quarter's P/F.

Those posts are not in conflict. Fees and TVL measure rented flow (Yakovenko). Pal's "what it secures" test is only a valuation test if leaving **breaks composition**. Most of what the market calls secured is

portable balances. That is why measured composability depth on large public maps sits in the mid-single digits, and why FDV and TVL fail to capture the valuation case for SagaChain. That mismatch is the point. PraSaga scores **utility that clears as a governed write**, object, rule, evidence, release, not narrative premia from the influencer cycle.

The Foundation provides the rail. Builders and operators own the vertical applications that run on it. The companion model separates ∏_capacity, which is SagaChain pro forma, from ∏_demonstrated, which requires Dimension 8 evidence and remains empty for SagaChain until measured live usage exists. Adoption of cross-industry composition is the conversion event. Until then, Yakovenko is right that flow will not stay for a story, and Pal's switch-off test does not yet apply here.

Four findings deserve immediate attention:

- TVL measures capital parked in contracts. It does not measure utility, composability, security, monetary premium, or the economic consequence of shared state across industries. Treating it as a primary L1 metric is a category error.
- The PraSaga Equation's product identity, V(L1) = ∏ SC(Industry), is directionally correct and theoretically grounded in Reed's Law for group-forming networks. The relative activity index (1.05 to 1.60) is a deliberate design constraint, not an oversight. Multiplying heterogeneous USD stocks inside ∏ is unit abuse. TVL × stablecoin market cap × NFT volume produces a dimensionally incoherent result. The relative index solves that problem. The remaining limitation is that the current tier spread (Dominant 1.60 vs Thin 1.05) is too narrow to reflect real magnitude differences between a dominant industry and a thin one at scale. The fix is wider tier spacing within the relative framework, not abandoning relative indexing.
- No single metric or identity is sufficient. A complete framework requires eight mandatory dimensions: fee revenue productivity, network security budget, native-unit monetary premium, compositional breadth, composability depth, decentralization quality, developer ecosystem vitality, and transaction volume by industry. The PraSaga Equation belongs in dimension four, not as the sole metric, and Dimension 8 is required to evaluate actual activity by industry.
- The free public tool reports two public sets. **Tier 1** (default) is SagaChain plus DefiLlama TVL ranks 1 to 10: Ethereum, Solana, BSC, Base, Tron, Bitcoin, Hyperliquid, Arbitrum, Monad, and Robinhood Chain. **Tier 2** is SagaChain plus ranks 11 to 20 and Cardano: Polygon, Plasma, Avalanche, Sui, Optimism, Anubis, Stellar, X Layer, Ink, Provenance, and Cardano. **All** shows both lists with SagaChain once. A browser sandbox accepts visitor Dim 8 / δ CSVs labeled **USER UPLOAD**. Those overlays are not published MEASURED figures. Dimensions 1 through 8 are filled where public data permits reliable measurement. On Tier 1, Dimension 8 is measured for seven peers, not currently measurable or not applicable for three, and pre-commercial zero for SagaChain. Tier 2 Dim 8 CSVs live in Current_Assets/queries/. Treat coverage as map-limited per chain, not a set-wide block. Peer threshold status for Dimension 8-mapped industries is set per chain at transaction volume of at least 1,000 and is never copied from Ethereum.

- The companion model separates ∏_capacity, which is pro forma, from ∏_demonstrated, which requires at least 1,000 Dimension 8 transactions per industry. SagaChain's 23 pathways should be read as capacity claims until demonstrated industry activity is measured.

1. The Failure of Current Valuation Practice

1.0 Why this paper now (Yakovenko / Pal)

The critique of TVL as a primary valuation metric remains necessary, but it is incomplete on its own. The September 2026 framing from Anatoly Yakovenko and Raoul Pal names the same gap in market language: thin moats mean fees and TVL measure rented flow that can leave overnight. "Value what the chain secures" only holds when leaving breaks composition, not when balances are portable.

The framework addresses that mismatch by scoring utility that clears as a governed write, object, rule, evidence, and release on shared state. The companion model separates ∏_capacity, SagaChain pro forma, from ∏_demonstrated, which requires Dimension 8 evidence. Until measured industry activity converts capacity into demonstrated usage, Yakovenko's thin-moat warning applies and Pal's switch-off test does not yet apply to SagaChain. The following subsections explain why TVL and siloed-value methods fail to capture that distinction.

Current market practice places multi-industry L1s in one of two incomplete valuation methods. The first is FDV-as-worth: treating fully diluted supply multiplied by native-coin price as a proxy for network value. The second is the product-company method: select one niche, prove ARR, and use a commodity chain. SagaChain is neither a capped-supply scarcity asset nor a single-vertical SaaS company. Both methods are likely to misprice what a shared-state L1 with open industry pathways actually is.

Within those frames, TVL has become the default intra-crypto metric. It fails for the same structural reason FDV does: it measures the wrong thing.

1.1 What TVL Actually Measures

Total Value Locked counts the USD-denominated value of assets deposited in smart contracts on a given chain at a point in time. It is a liquidity metric. Nothing more.

TVL answers one question. It reports how much capital is currently parked on this chain. It does not answer:

- The industries using the native unit for settlement, fees, or reserves.
- Whether those industries interact atomically (composition) or merely co-exist (co-location).
- What the chain earns in protocol revenue.
- What it would cost an attacker to corrupt the chain.
- Whether the native coin carries a monetary premium independent of utility.
- Whether the developer base is growing or contracting.

- How decentralized, and therefore how trustless, the chain actually is.

TVL also suffers from a structural circularity problem: on chains where the native coin is used as collateral, rising native-coin price inflates TVL without any new economic activity. TVL is partly a function of what it is supposed to measure.

1.2 The Additive Silo Trap

The standard alternative to TVL, summing sector volumes or adding industry use-values, is better, but it prices composition at zero. Consider a chain with Finance and Healthcare both present. The additive model scores this as Finance + Healthcare. But if those two industries can transact atomically, a healthcare provider settling insurance claims directly against a DeFi liquidity pool, for example, the value of that interaction is not Finance + Healthcare. It is a function of their product. The additive model cannot capture cross-industry synergy.

This is not a rhetorical point. It has a formal analogue in network economics, which we establish in Section 3.

Metric / Frame	What It Measures	What It Misses
FDV (supply × price)	The market price of a fully diluted supply.	Utility, composition, revenue, security, and the category error for forever-minting demand-responsive designs.
Product-company method	The single vertical that reports ARR.	That the chain is the product. Open pathways are the value proposition, not one company's P&L.
TVL	The amount of capital currently locked.	Composition, utility, revenue, security, monetary premium.
Volume (30d)	The amount transacted.	Quality of activity, whether industry pathways compose.
Active Addresses	The number of wallets that transacted.	Economic weight of activity, pathway breadth.
Market Cap / FDV	The amount the market currently prices.	Intrinsic drivers, circularity, sentiment dominance.
Σ SC (additive)	The siloed pathway footprint.	Cross-pathway synergy from shared state.
∏ SC (PraSaga)	The compositional score.	Security, monetary premium, revenue, decentralization. Needs the full eight-dimension scorecard.

Methodological rule: *TVL is a necessary contrast metric. It is never a primary valuation score for a multi-industry shared-state L1. Proper evaluation requires all eight dimensions, including measured transaction volume by industry.*

2. What a True Valuation Framework Must Contain

A defensible, complete valuation framework for a global open permissionless decentralized trustless L1 must address eight distinct economic dimensions. These are not interchangeable. Each captures a different aspect of value that the others miss.

Dimension	What It Measures	Primary Signals	Why Irreplaceable
1. Fee Revenue Productivity	The amount the protocol earns.	Protocol fees (30d), fee/TVL ratio, P/F multiple	Auditable cash-flow proxy, comparable across chains.
2. Network Security Budget	The cost to corrupt the chain.	Staking yield, validator count, Nakamoto coefficient, cost-of-attack	Value requires security. An insecure chain's utility claims are unsupported.
3. Native-Unit Monetary Premium	Whether the native coin carries store-of-value independent of utility.	Holder concentration, velocity, BTC/ETH correlation, reflexivity ratio	Real economic value not captured by any utility metric.
4. Compositional Breadth	The number of industries that use the native unit as factors in one product.	∏ SC(Industry) per PraSaga Equation, δ treated separately in Dimension 5	Captures super-additive value of shared state.
5. Composability Depth	Whether those industries compose through atomic transactions or merely co-exist.	Cross-protocol atomic transaction count, shared-state dependency graph	Co-existence is not composition. Depth determines whether the product claim holds.
6. Decentralization Quality	Whether the chain is genuinely trustless and censorship-resistant.	Nakamoto coefficient, geographic distribution, client diversity, MEV concentration	The qualifying adjectives, open, permissionless, and trustless, are value attributes.
7. Developer Ecosystem Vitality	Whether the platform is growing.	Active developers (monthly), protocol deployments, GitHub commits, SDK adoption	Leading indicator of future SC growth across dimensions 4 and 5.
8. Transaction Volume by Industry	The transaction activity that exists by industry.	Per-industry and Σ 30d transaction volume	Mandatory activity evidence. Quantifies actual usage by industry and supports quality-tier evaluation.

No single dimension is sufficient. An L1 with high compositional breadth but a thin security budget is structurally fragile. An L1 with strong fee revenue but zero composability depth is a high-throughput single-industry chain, not a compositional network. The framework must be evaluated as a multi-factor matrix, not as a single number.

3. Theoretical Basis for Compositional Value

3.1 Network Economics: From Metcalfe to Reed

The case for compositional value has a formal foundation in network economics. That foundation explains why shared-state systems can create value that additive industry measures do not capture.

Law	Value Function	Applies When	Relevance to L1s
Sarnoff's Law	$V \propto n$	Broadcast networks (one sender, many receivers)	Single-chain, single-use L1s
Metcalfe's Law	$V \propto n^2$	Peer-to-peer networks (any node to any node)	Multi-user chains. DeFi pools
Reed's Law	$V \propto 2^n$	Group-forming networks (any subset of nodes can form a productive group)	Multi-industry shared-state L1s. Industries are the groups

Reed's Law, proposed by David P. Reed in 1999, demonstrates that networks whose primary value comes from their ability to support groups or communities scale super-exponentially with member count. A blockchain where n industries can each form transactions with any other industry, share state atomically, and compose new financial instruments across verticals is precisely a group-forming network in Reed's sense.

The PraSaga Equation's product form, $V(L1) = \prod SC(I)$, is an operationalization of Reed's intuition: each additional industry that genuinely composes on shared state does not merely add to value. It multiplies it, because every new entrant can interact with every existing participant combination.

Theoretical claim: *The PraSaga Equation is not merely an analogy to Drake. It is a practical operationalization of Reed's Law applied to multi-industry blockchain networks. This grounding gives the PraSaga Equation a practical role: it translates Reed's group-forming network intuition into a measurable blockchain valuation framework. Reed remains directionally correct as intuition for group-forming networks. The product of assigned SC scalars is not 2^n and is not a dollar formula.*

3.2 The SC(Industry) Definition: Current Specification and Its Gaps

SC(Industry) is defined as the value of the native unit used by that industry, through fee settlement, reserves, royalty settlement, supply-chain utility, or other native-unit consumption. This definition is correct. The current proxy specification, however, has gaps that limit analytical defensibility.

Gap 1: Tier Spread. The Relative Index Is Correct. The Range Is Too Narrow

The worked examples use a relative activity index rather than raw USD values inside ∏ SC. This design choice is necessary because raw dollar-denominated quantities carry incompatible units and do not measure the same economic phenomena.

Why raw dollar-denominated quantities cannot go inside ∏ SC

Suppose you want to capture the economic size of six industries on Ethereum by putting their raw dollar values directly into the product:

Industry	Raw metric	Value (approx)
Finance / DeFi	TVL	\$49B
Payments / Stablecoins	Stablecoin float	\$147B
RWA	Active market cap	\$15B
NFT / Media	30-day volume	\$0.8B
Gaming	Token market cap	\$2B
Infra / Staking	Staked value	\$100B

The product of those six numbers is:

\$49B × \$147B × \$15B × \$0.8B × \$2B × \$100B = result in USD⁶ (dollars to the sixth power, not a valid quantity)

The result has units of dollars-to-the-sixth-power (USD⁶). That is not a quantity that exists in economics. You cannot express it on a chart, compare it across chains, or interpret it as a value. The problem is not the numbers. It is that multiplying quantities with different units and different economic definitions produces a dimensionally incoherent result. TVL measures locked capital. Stablecoin float measures circulating supply. NFT volume measures turnover. These are not the same kind of thing. Multiplying them together is the same category of error as multiplying meters by kilograms by seconds and calling the result a price.

A second problem: chains with large raw dollar-denominated quantities score well independent of whether those industries compose on shared state. A chain with \$200B of stablecoins that never interact with anything else would dominate the product, not because it is compositionally rich, but because one number is large.

What the relative index solves

Replacing raw dollar values with a relative activity index, a dimensionless number between 1.05 and 1.60, eliminates both problems. The index is dimensionless: it has no units and can be multiplied freely. The product ∏ SC is therefore also dimensionless, a pure score that can be compared across chains and interpreted as a compositional breadth measure. The index captures relative presence and activity within a common scale, not absolute dollar size.

This is a deliberate design constraint, not an oversight. The constraint has a tradeoff: it compresses the difference between a large dominant industry and a thin one. Ethereum's DeFi (\$49B TVL, Dominant tier) and a chain with \$50M DeFi activity (Present tier) score 1.60 vs 1.15 respectively, a ratio of 1.39. In raw dollar terms the difference is 980×. The index does not capture that magnitude gap, which is the limitation addressed by widening the tier spread.

The relative index approach should be preserved. The fix for the magnitude compression problem is wider tier spacing within the relative framework, not switching back to raw dollar multiplication.

The remaining limitation is within the relative framework itself. SC factors currently range from 1.05 (Thin) to 1.60 (Dominant). At these values, the product becomes more sensitive to factor count than factor quality as pathway count grows. A chain claiming many Thin-tier pathways can score higher than a chain with fewer Dominant-tier ones. That is analytically wrong. A Dominant vertical genuinely used for settlement at scale is worth more than a Thin one by more than the current 1.60 vs 1.05 ratio implies.

- A wider tier spread can correct the magnitude compression while preserving the relative framework. One defensible approach is Dominant = 2.0, Material = 1.5, Present = 1.2, and Thin = 1.05. At these values, a chain with five Dominant industries scores substantially higher than a chain with 23 Thin industries, which better reflects real economic differences between mature and thin activity.
- The framework should preserve relative indexing rather than placing raw USD values inside ∏. The unit problem is real: the inputs do not share a common measurement basis. The appropriate correction is wider tier spacing within the relative framework, not a change from dimensionless factors to dollar-denominated multiplication.

Gap 2: The Anchor Is Under-Specified

The compositional score is expressed as Anchor (\$B) × ∏ SC. The anchor functions as a per-unit native-coin reference price, set manually per chain (\$8B for SagaChain, \$10B for Ethereum). It has no first-principles derivation. A framework that requires an externally set anchor is not a self-contained valuation model. It is a scaling exercise.

- The anchor should be grounded in an auditable signal for each chain, such as annualized protocol fee revenue or a trailing average native-unit market capitalization divided by circulating supply. The selected anchor should be explicit, documented, and reproducible.

Gap 3: Composability Depth Is Absent

Two chains can both have Finance and Healthcare as 'On' factors, but one has atomic cross-industry transactions while the other has two isolated protocols sitting on the same substrate. The current framework scores them identically. This is the most important gap: it means the framework cannot distinguish genuine composition from mere co-location.

- A Composability Depth modifier, $\delta \in [0,1]$, distinguishes genuine atomic composition from co-location. Peer analysis applies δ to demonstrated compositional breadth, while SagaChain capacity remains pro forma until Dimension 8 evidence exists. The named identity remains V(L1) = ∏ SC(Industry). δ is estimated from atomic cross-protocol transaction volume as a share of total transaction volume. $\delta = 1$ indicates full shared-state composition. Δ approaches 0 where activity is bridged or siloed.

For peer analysis, $\delta \times \prod$_demonstrated identifies trailing compositional breadth adjusted for measured depth. Anchor provides scenario scale only. SagaChain's Dimension 4 capacity score remains pro forma until Dimension 8 evidence shows at least 1,000 transactions per industry. The named identity remains V(L1) = ∏ SC(Industry).

where $\delta \in [0,1]$ is the Composability Depth coefficient, the fraction of total transaction volume that involves atomic cross-industry interaction.

4. The Complete Valuation Framework

4.1 The Multi-Dimensional Scorecard

The following scorecard integrates all eight dimensions. It is designed to be used as a structured due-diligence instrument, not a single output number. Each dimension has a primary signal, a benchmark anchor, and a scoring direction.

\#	Dimension	Primary Signal	Benchmark	Direction
1	Fee Revenue Productivity	Protocol fees (annualized) / FDV	Ethereum: ~0.4% · Solana: ~1.2%	Higher = better revenue efficiency
2	Security Budget	Annual staking yield × staked supply / FDV	Target: \>2% of FDV/year to validators	Higher = higher cost of attack
3	Monetary Premium	Non-utility holding ratio (1 minus velocity-adjusted utility fraction)	BTC ~0.85 · ETH ~0.60	Higher = stronger SoV / monetary demand
4	Compositional Breadth	∏ SC(Industry) per PraSaga Equation. δ	Ethereum: ~5.22 (six qualifying industries). Solana:	Higher = more industries composing

		treated separately in Dimension 5	~3.58 (five qualifying industries, subject to Dimension 8 threshold). Base: ~2.03 (three qualifying industries)	
5	Composability Depth	Atomic cross-industry transaction volume / total transaction volume (δ)	Aspirational: \>0.30 for a multi-industry claim	Higher = genuine composition, not co-location
6	Decentralization Quality	Nakamoto coefficient (validators) + client diversity index	ETH: concentration concern (Lido/Coinbase) · SOL: 18 (Chainspect 4 Sep 2026)	Higher = more censorship-resistant
7	Developer Vitality	Monthly active protocol developers (Chainspect / Electric Capital)	ETH: 11,667 · SOL: 10,898 · Base: 1,490 (Chainspect 4 Sep 2026)	Higher = platform growth trajectory
8	Transaction Volume by Industry	Per-industry and Σ 30d transaction volume	MEASURED (Dune). Peer Mode A/B threshold status for mapped industries is based on each chain's own measured transaction volume threshold, not Ethereum's qualifying industry set.	Higher = stronger demonstrated activity by industry

Scoring rule: *A chain must be evaluated across all eight dimensions. Dimensions 1, 2, and 6 establish whether compositional claims on Dimensions 4 and 5 carry analytical weight. Dimension 8 is mandatory because it measures actual industry-level activity and prevents breadth claims from being evaluated without usage evidence.*

4.2 How Chains Differ on This Framework

The following schematic illustrates how different chain architectures score across the eight dimensions. Numbers are directional and illustrative, not audited outputs.

Dimension	Single-Niche L1	Multi-Silo L1 (bridged)	Multi-Industry Shared-State L1
1\. Fee Revenue	High (if niche has traction)	Moderate (split across silos)	High (if multiple industries active)
2\. Security Budget	Varies	Varies	Must be strong to support enterprise industries
3\. Monetary Premium	Low (pure utility coin)	Low to moderate	Moderate to high (if trust established)
4\. Compositional Breadth ∏ SC	Low (1 factor)	Moderate (Σ, not ∏)	High (genuine ∏)
5\. Composability Depth δ	N/A	Low (bridged. Δ → 0)	High target (δ → 1)
6\. Decentralization	Varies	Varies	Critical. Enterprise trust requires it
7\. Developer Vitality	Narrow (one domain)	Moderate	Broad (cross-industry developers)
8\. Transaction Volume by Industry	Low or concentrated if measured activity is limited to one niche	Fragmented across silos. Requires measured industry attribution	Mandatory measured evidence of real-use breadth and industry magnitude

4.3 Peer Coverage: Free Public Tool (Tier 1 + Tier 2)

The free public L1 valuation tool (L1_Complete_Valuation_Calculator_v3.html, public release 1) includes two public sets. Planned host: valuation.prasaga.com. Top-10 membership is a **Tier 1** registry and contrast frame based on locked capital ranking, not a claim that TVL is the primary valuation metric and not the name of the product.

Tier 1 (default): SagaChain, Ethereum, Solana, BSC, Base, Tron, Bitcoin, Hyperliquid L1, Arbitrum, Monad, and Robinhood Chain.

Tier 2: SagaChain, Polygon, Plasma, Avalanche, Sui, Optimism, Anubis, Stellar, X Layer, Ink, Provenance, and Cardano.

Sandbox: visitor Dim 8 CSV plus optional δ CSV in the browser, labeled USER UPLOAD. Overlay does not rewrite published files. Sandbox numbers, including any Celo tests, are not MEASURED.

Dimension 8 measurement status on **Tier 1** uses 30-day distinct transaction counts by industry where public data permits reliable measurement. Measured chains are Ethereum, Solana, BSC, Base, Arbitrum, Monad, and Robinhood Chain. Tron and Hyperliquid are not currently measurable under the

public methodology. Bitcoin is not applicable under the EVM contract map because it uses a UTXO model. SagaChain is pre-commercial zero because transaction volume by industry is not yet measurable. **Tier 2** Dim 8 CSVs are in Current_Assets/queries/ (chain-native maps). Coverage is map-limited per chain. Do not copy Ethereum addresses onto those chains.

Peer threshold status for the six Dimension 8-mapped industries, Finance, Payments/FinOps, RWA, Infra/Protocol, NFT/Music, and Gaming/Sports, is set per chain from that chain's measured volume. An industry meets the threshold when transaction volume is at least 1,000. Ethereum's qualifying industry set is never copied to peers.

Dimension 8 never enters ∏ SC. It is an activity and magnitude dimension reported alongside Dimensions 1 through 7. TVL remains contrast only. SagaChain scores ∏_capacity (PRO FORMA, 23 pathways). Peers score ∏_demonstrated. That is not a ratio. Anchor is scenario scale, not FDV.

5. Peer Profiles: Public Peer Set

This section covers the public peer set in the free public tool. **Tier 1** is SagaChain plus the DefiLlama TVL top 10, including Ethereum, Solana, BSC, Base, Tron, Bitcoin, Hyperliquid L1, Arbitrum, Monad, and Robinhood Chain. **Tier 2** (Polygon, Plasma, Avalanche, Sui, Optimism, Anubis, Stellar, X Layer, Ink, Provenance, Cardano) is in the same public HTML. Dim 8 CSVs for that set are in Current_Assets/queries/. Coverage is map-limited per chain. Section 5.1 gives an eight-dimension scorecard for every peer in the Tier 1 set. Section 5.2 adds a deeper narrative worked example for Ethereum and Solana. Section 5.3 reports composability depth for the Tier 1 set. Section 5.4 reports Dimension 8 for Tier 1 and the Tier 2 CSVs. TVL is contrast only. SC(Industry) in the strict sense is a function of SagaCoin. For peers the figures use native-unit use-value proxies labeled by ticker. Figures are illustrative or measured under documented assumptions, not audited valuations.

5.1 Eight-Dimension Scorecards: Public Peer Set

Each peer in the public peer set is scored on all eight dimensions below. Where Dimension 8 or δ is not currently measurable, not applicable, or pre-commercial, that status is stated explicitly. Assessments are directional, not audited scores.

Chain	Ticker	D1 Fees	D2 Security	D3 Premium	D4 Breadth	D5 δ	D6 Decent.	D7 Devs	D8 Status
Ethereum	ETH	Strong. ~\$313M. TVL ~\$50.3B.	Strong. ~\$115B staked. ~1M validators.	Moderate to high. Institutional reserve use.	Moderate. ∏≈5.22. Six qualifying industries.	4.41%. Measured.	Moderate. Lido/Coinbase concentration.	Strong. 11,667.	MEASURED.
Solana	SOL	Strong. ~\$380M. TVL ~\$5.9B.	Moderate. \$45.5B staked. Nakamoto 18.	Moderate. Speculation plus culture.	Moderate. ∏≈3.58. Five qualifying industries.	5.72%. Measured.	Moderate to strong. Nakamoto 18.	Strong. 10,898.	MEASURED. Tokenkeg caveat.

BSC	BNB	Strong to moderate. ~\$93M. TVL ~\$5.7B.	Weak to moderate. Small elected validator set.	Moderate. Exchange utility.	Narrow qualifying set. Finance plus Payments.	≈6.98%. Measured.	Weak to moderate. Small set.	Moderate estimate.	MEASURED. Native map.
Base	ETH L2	Moderate to strong. ~\$66M. TVL ~\$5.6B.	Inherits Ethereum L1. Sequencer model applies.	Low to moderate. L2 utility.	Narrower. ∏≈2.03. Three qualifying industries.	9.56%. Limited mapping coverage.	L2 sequencer centralization.	Moderate. 1,490.	MEASURED. Ethereum address-map limitation.
Tron	TRX	Moderate. ~\$8M. TVL ~\$5.5B.	DPoS / super-representative model.	Moderate. Payments corridor.	Not measured under the current Dimension 8 methodology.	Not measured.	DPoS concentration profile.	Moderate to thin estimate.	Not currently measurable.
Bitcoin	BTC	Low absolute. ~\$0.4M. TVL contrast ~\$4.2B\	Strong PoW security.	High. Store-of-value premium.	N/A under EVM industry map.	N/A.	Strong relative to most alt-L1s.	Mature. Different methodology.	N/A. UTXO.
Hyperliquid	HYPE	Strong vs TVL. ~\$149M. TVL ~\$1.4B.	Specialized L1. Moderate estimate.	Moderate. Perp utility.	Not measured under the current Dimension 8 methodology.	Not measured.	Newer L1. Weak to moderate estimate.	Small specialist estimate.	Not currently measurable.
Arbitrum	ETH L2	Moderate. ~\$19M. TVL ~\$1.4B.	Optimistic L2. Inherits Ethereum L1.	Low to moderate.	Narrow qualifying set. Finance plus NFT.	0.00%. Limited by available mapped data.	Sequencer centralization.	Moderate estimate.	MEASURED. Ethereum address-map limitation.
Monad	MON	Emerging. ~\$6.5M. TVL ~\$1.0B.	New EVM L1. Weak to moderate estimate.	Low to moderate.	Narrow qualifying set. NFT only.	0.00%. Limited by available mapped data.	Early mainnet. Weak to moderate estimate.	Growing estimate.	MEASURED. Limited mapping coverage.
Robinhood Chain	ETH	Strong vs TVL. ~\$266M. TVL ~\$0.9B.	Operator-associated estimate.	Low to moderate.	Narrow qualifying set. NFT.	0.00%. Limited by available mapped data.	Operator-limited. Weak estimate.	Early or closed estimate.	MEASURED. Limited mapping coverage.
SagaChain	SC	Pre-commercial.	Not yet public.	Stability premium thesis.	23 pathways identified as pro forma capacity.	Target δ→1.0. Not measured.	Not yet public.	23-pathway base. Pre-commercial.	Pre-commercial zero.

\ *Bitcoin TVL is DefiLlama DeFi wrap contrast, not UTXO settlement volume. L2 tickers show ETH as the fee/native unit.*

5.2 Worked-example narrative: Ethereum and Solana

Ethereum and Solana remain the most detailed worked examples because they have the densest public evidence across all eight dimensions and are the most common analyst baselines. The scorecards in Section 5.1 already cover them. The points below are interpretive, not a substitute for omitting other peers.

Ethereum's valuation strength rests primarily on Dimensions 1, 2, 3, and 7. Compositional breadth is real but concentrated in DeFi and stablecoins. TVL overstates breadth and understates monetary premium.

Solana's strongest signals are fee productivity, composability depth, and decentralization quality. Jupiter routing supports cross-industry composition directly. A TVL-only ranking understates Solana on those dimensions.

5.3 Measured Composability Depth (δ): Public Peer Set

δ = cross-industry atomic transaction count / tagged protocol transaction count (30-day window, Dune), using each chain's available protocol map.

Principal measured examples

The following chains show non-zero measured composability depth within the mapped peer set:

Chain	δ	Cross-industry (30d)	Tagged (30d)	1 in N	Primary driver / notes
Ethereum	4.41%	958,156	21,732,478	1 in 23	Finance × Payments atomic settlement (57 mapped contracts)
Solana	5.72%	56,112,090	980,366,148	1 in 17	Jupiter Finance+Payments+Infra routing (33 mapped programs)
BSC	≈6.98%	16,045,795	230,017,334	1 in 14	BSC-native Pancake/stables map
Base	9.56%	6,838,293	71,528,222	1 in 10	Consumer-app routing. 13 mapped contracts (smaller-map caveat)

Remaining Peer Measurement Status

Chain	δ	Cross / Tagged (30d)	Status
Arbitrum	0.00%	0 / 667,985	Limited by available mapped data (Ethereum address-map limitation. May undercount)
Monad	0.00%	0 / 17,948	Limited by available mapped data (Ethereum address-map limitation. Likely thin)
Robinhood Chain	0.00%	0 / 1,330,428	Limited by available mapped data (Ethereum address-map limitation. Likely thin)
Tron	N/A	N/A	Not measured because reliable public data tables were not available.
Bitcoin	N/A	N/A	N/A under EVM industry methodology
Hyperliquid L1	N/A	N/A	Native data tables were not available under the current public measurement methodology.
SagaChain	N/A	N/A	Not yet measured. Architectural target δ → 1.0

Findings

1 Ethereum, Solana, Base, and BSC show measurable cross-industry composition in this peer set. Arbitrum, Monad, and Robinhood Chain currently show approximately 0% δ on the mapped set used here. Treat those zeros as limited by available mapped data until chain-native mapping deepens, not as proof those networks cannot compose.

2 TVL rank and δ rank diverge. Among the four principal measured examples, high-TVL Ethereum is not the highest-δ peer. Base and BSC show higher δ on their maps, and Solana exceeds Ethereum. Across the broader peer set, several peers are not currently measurable, not applicable, or limited by available mapped data at approximately 0%.

3 Base's higher δ needs the smaller-map caveat: 13 mapped contracts versus 57 for Ethereum and 33 for Solana. Solana and Ethereum remain the most comparable pair.

(4) Tron, Hyperliquid, and Bitcoin are labeled not currently measurable or not applicable rather than silently dropped from the peer set.

5.4 Dimension 8 by Industry and Public Peer Registry

Dimension 8 equals 30-day distinct transactions by industry for the public peer set. It never enters ∏ SC. A mapped industry meets the threshold only when transaction volume reaches at least 1,000 on that chain. Fee/TVL contrast in Section 5.1 uses the same DefiLlama refresh: Ethereum approximately \$313M / \$50.3B and Solana approximately \$380M / \$5.9B.

Measured Dimension 8 Volumes

Chain	PAYMENTS	FINANCE	INFRA	NFT	RWA	GAMING	Notes
Ethereum	21.39M	2.58M	0.44M	0.23M	0.18M	0.07M	Gaming meets threshold
Solana	1.079B	69.9M	3.3K	6.7M	0.15M	N/A	Tokenkeg-inflated PAYMENTS. Gaming does not meet threshold
BSC	213.8M	32.3M	N/A	N/A	N/A	N/A	BSC-native map
Base	62\	1.01M	8.3K	86K	196\	1\	Ethereum address-map limitation. \ *below the ≥1,000 transaction threshold*
Arbitrum	24\	0.66M	N/A	9.9K	1\	N/A	Ethereum address-map limitation. \ *below the measurement threshold*
Monad	13\	11\	N/A	17.9K	N/A	N/A	Limited Ethereum mapping coverage. NFT meets threshold
Robinhood Chain	38\	791\	3\	1.33M	N/A	N/A	Limited Ethereum mapping coverage. NFT meets threshold

Peers Without Dimension 8 Scores

Chain	Dimension 8 status	Reason
Tron	Not currently measurable	Reliable public tables were not available for TRC20 event and trace-based industry mapping.
Bitcoin	N/A	UTXO. EVM contract map does not apply
Hyperliquid L1	Not currently measurable	Native data tables were not available under the current public measurement methodology.
SagaChain	Pre-commercial zero	Transaction volume by industry not yet measurable

Tier 2 Dimension 8 Volumes

Tier 2 Dim 8 CSVs live in Current_Assets/queries/. Coverage is map-limited per chain, not a set-wide block. Do not copy Ethereum addresses onto those chains. An industry meets the threshold when transaction volume is at least 1,000 on that chain. Public fee and TVL contrast data can be drawn from sources that do not require private credentials. Browser sandbox USER UPLOAD overlays are not published MEASURED figures.

Chain	PAYMENTS	FINANCE	INFRA	NFT	RWA	GAMING	Notes
Polygon	79.2M	7.42M	1.4K	14.5K	831\	26\	Polygon-native map
Avalanche	4.06M	0.21M	22.1K	1.9K	95\	0	Avalanche-native map
Optimism	17.5M	7.33M	0	662\	0	0	OP-native map
Plasma	0	30.3K	0	0	0	0	Plasma-native map, CREATE2 caveat
Cardano	0	40.6K	0	0	0	0	Script-hash map, Minswap V2 plus FluidTokens plus Optim
Ink	0	1.2K	0	0	0	0	Ink-native map, CREATE2 caveat
X Layer	0	2\	0	0	0	0	X Layer-native map, CREATE2 caveat, below threshold

Stellar	0	0	0	0	0	0	Measured 0 hits on the Stellar account map
Sui	0	0	0	0	0	0	Map-limited. Package join returned 0 hits on the listed ids
Anubis	0	0	0	0	0	0	No confirmed Dune schema or chain-native identifiers
Provenance	0	0	0	0	0	0	Cosmos-style. No EVM traces map on this Dune pack

\ *Below the 1,000 transaction threshold. Zero can mean no mapped hits, not proof the industry is absent on chain.*

6. Applying the Framework to SagaChain-Class Networks

A multi-industry shared-state L1 with 23 or more implemented industry pathways presents an analytically distinct profile. The terminology matters: these are open infrastructure pathways that allow others to build businesses on shared state. They are not a product-company SKU list, and they do not imply that PraSaga must operate each vertical as a SaaS product. The valuation effort scores the chain and its pathways, not one niche's P&L. The following assessment applies the eight-dimension framework to the class of chain that SagaChain represents: a shared object-model network designed for cross-industry composition.

Row 23, Insurance / Risk Transfer, was added to the pathway inventory on 5 September 2026 with the registration of SagaInsurance: 60 classes across 8 domains covering the full commercial insurance lifecycle, including parties, product, policy, claims, reinsurance, named lines, and capital adequacy hooks. It is jurisdiction-neutral and aligned with ACORD data standards, Solvency II, IFRS 17, NAIC, and Lloyd's delegated authorities. Insurance is NAICS sector 524, distinct from banking (522) and securities (523), the same basis on which Accounting (row 15) and Regulatory (row 12) were separated from Finance. No peer L1 has an equivalent structured tree.

Important: *The following is a framework application to a class of network, not a statement about current SagaChain market data. SC factors and all dimensional scores require documented public evidence before they should be treated as public claims.*

6.1 Where This Class of Chain Should Score Highest

- Compositional Breadth (Dimension 4): 23 implemented industry pathways, if each genuinely consumes the native unit, produce a ∏ SC that no single-niche or multi-silo chain can match mathematically. This is the primary valuation differentiator.
- Composability Depth (Dimension 5): A shared object model, by architectural design, enables δ → 1. This is the core engineering premise, not measured evidence. If the architecture delivers on this premise, the δ multiplier has the largest effect on the framework's valuation result.
- Developer Vitality breadth (Dimension 7): 23 implemented industry pathways require developers from multiple domains. Cross-domain developer activity, if measured, represents a qualitatively different ecosystem than a single-domain chain.

6.2 Where This Class of Chain Must Build Credibility

- Fee Revenue Productivity (Dimension 1): At pre-commercial scale, protocol fees are thin. The framework requires evidence that native-unit consumption across industries is real and growing. Illustrative SC factors are a placeholder, not a substitute.
- Security Budget (Dimension 2): A 23-industry enterprise network carries higher trust requirements than a consumer DeFi chain. Validator economics must be sized to the adversarial model of the industries it serves.
- Composability Depth Evidence (Dimension 5): The δ coefficient must eventually be measured from actual cross-industry atomic transaction data, not asserted from architectural design documents.
- Transaction Volume by Industry (Dimension 8): Once live usage exists, SagaChain must report measured transaction volume by industry. This is mandatory evidence for evaluating whether claimed pathways have real activity and magnitude.

6.3 Dimension 3 Reconsidered: The SagaCoin Monetary Management Model

The original treatment of Dimension 3 (Native-Unit Monetary Premium) in this framework stated: 'This dimension is earned through institutional trust and time. It cannot be argued into existence analytically. It must be demonstrated in holder behavior.' That statement is correct for speculative monetary premium, value held because a fixed supply may appreciate. It is incomplete for SagaCoin, because SagaCoin's monetary premium thesis is structurally different in kind, not just in degree.

The Core Distinction: Speculation Premium vs. Stability Premium

Most L1 tokens, including Bitcoin, carry a monetary premium that is primarily a speculation premium. The supply is fixed or pre-determined, demand variation is absorbed entirely by price, and holders are rewarded by appreciation. Lawrence White, the monetary economist who co-authored the SagaCoin Management Model with David Beberman, identifies this precisely: 'the quantity of coins is completely

unresponsive to changes in demand for the coin, price bears the entire burden of adjustment, which renders the market value of the coin highly volatile and unpredictable.'

SagaCoin is designed to carry a fundamentally different kind of monetary premium: a stability premium. Value is held not because the price might rise, but because the purchasing power is stable and predictable, making it genuinely useful as a medium of exchange across the 23 industries that compose on SagaChain. Critically, this stability is not pegged to an external basket. Stage 3 uses external indices (CPI/PCE/GDPDEF) as a transitional reference while the internal SagaChain economy is still too small to self-reference. Stage 4 replaces that external reference entirely with SagaChain's own internal price index. Purchasing power is stabilized against SagaChain's own economy, not against the dollar or any external measure. This is a structurally distinct design objective from a stablecoin, a flatcoin, or any fixed-supply coin. It has direct valuation consequences across three dimensions of this framework.

The Beberman-White Monetary Management Model

The SagaCoin Management Model implements a four-stage demand-responsive supply rule. Its core mechanism is:

gM(t) = gCt3 - 0.25 × (pp(t) - pp\(t))

Term	Definition	Analogue
gM(t)	Net quarterly supply expansion rate (mint minus burn)	The policy instrument, equivalent to a central bank rate decision
gCt3	3-quarter moving average of trend purchasing-power growth	The baseline. Insulates policy from short-term noise
pp(t)	Natural log of purchasing power at start of quarter t	Current price level observation
pp\(t)	Natural log of target purchasing power at start of quarter t	The price path target
0.25	Error-correction coefficient. Eliminates a 10% gap in ~4 quarters	Calibrated response speed. Not arbitrary

The four stages are implemented in SagaPython class code, including ClassSagaCoinPolicy, ClassPriceOracleBridge, and ClassSagaCoinTreasury. The implementation should be evaluated through code review, activation status, oracle reliability, and governance controls before it is treated as live monetary evidence.

Stage	Policy Mode	Oracle Source	Supply Behavior	Monetary Premium Type

1\. Bootstrap	Fixed supply. Market finds price	None	Unresponsive	Pure speculation premium
2\. Price Path Targeting	Quarterly mint/burn to track appreciation path	Internal market price	Demand-responsive (nominal)	Transitional: appreciation plus emerging stability
3\. Real Price Stability	Flat purchasing-power target. CPI/PCE/GDPDEF deflation	External inflation indices + internal	Demand-responsive (real)	Stability premium. Purchasing power stable in real terms
4\. Internal Algorithmic	zkSNARK-verified internal SagaChain price index replaces all external oracles	On-chain encrypted business reporting. No fiat reference	Fully demand-responsive (endogenous to SagaChain economy)	Endogenous stability premium. Purchasing power stabilized against SagaChain's own internal economy. Not a flatcoin

How the Monetary Model Strengthens Three Valuation Dimensions

Dimension 3: Monetary Premium. A Mechanistically Grounded Stability Claim

For Bitcoin, Ethereum, and Solana, Dimension 3 must be assessed purely from holder behavior: speculation ratios, velocity, and institutional adoption patterns. There is no underlying mechanism that targets purchasing power stability. The premium is real but its analytical basis is market sentiment.

For SagaCoin at Stage 3 and beyond, Dimension 3 has a mechanism: the Beberman-White supply rule, oracle-fed, quarterly-executed, with documented error-correction calibration. The stability premium is not asserted. It is the designed output of an implemented system. This does not guarantee the premium will materialize, but it means the analytical basis for claiming it is categorically stronger than for any fixed-supply peer. Analysts evaluating SagaCoin on Dimension 3 should assess the management model's design quality and implementation fidelity, not just holder behavior.

Analytical implication: *SagaCoin's Dimension 3 assessment requires evaluating the monetary management model as a mechanism: stage of activation, oracle reliability, parameter governance, and circuit-breaker design, not just market sentiment indicators.*

Dimension 4: Compositional Breadth. Stable Unit Strengthens SC(Industry)

SC(Industry) is defined as the value of the native unit used by that industry. This definition contains a hidden dependency: the value of the native unit is not independent of its monetary properties. An industry using a volatile coin for fee settlement must discount that coin's value to account for price uncertainty at settlement time. A Finance vertical settling transactions in a coin whose purchasing power is volatile will assign a lower effective SC than it would for a coin with stable, predictable purchasing power.

This is not a marginal effect. It is the core reason Lawrence White argues a flatcoin outperforms Bitcoin as a medium of exchange, and medium-of-exchange utility is precisely what SC(Industry) is measuring. A stable PSC makes higher SC(Industry) values more defensible. Industries requiring settlement certainty, including Finance, Regulatory, Accounting, Real Estate, and Healthcare, will assign structurally higher SC values to a coin with documented purchasing-power stability than to a volatile peer coin. The monetary management model is therefore not separate from the compositional value framework. It strengthens the analytical basis for higher SC factors.

Anchor Definition: Toward a First-Principles Basis

The original report identified the manually set Anchor parameter as a gap. The \$8B SagaChain anchor and \$10B Ethereum anchor have no first-principles derivation. The SagaCoin monetary management model does not fully solve this problem, but it provides a stronger basis for a principled anchor construction.

In the monetary model, the target purchasing power path (pp\) *is grounded in oracle-observed real price indices, CPI, PCE, GDPDEF, and calibrated quarterly. This gives PSC a native-unit value reference that is documented, observable, and parameter-explicit. A defensible anchor for the PraSaga Equation's SagaChain calculation should be derived from this mechanism rather than set manually. The recommended approach:*

- Stage 2 anchor: derive from the target price path at the end of Stage 1, the market-discovered purchasing power per PSC at the point price targeting begins.
- Stage 3 anchor: derive from the real purchasing power target, the nominal price deflated by the oracle-reported CPI/PCE blend. This is a documented, externally verifiable reference.
- Stage 4 anchor: derive from the internal SagaChain price index, fully endogenous, zkSNARK-verified, and requiring no external oracle dependency.

This is a staged anchor grounding program that maps directly onto the monetary management model's stage structure. It transforms the anchor from an arbitrary scaling parameter into a documented economic reference that evolves as the system matures.

6.4 The Integrated SagaChain Valuation Position

With the monetary management model incorporated into the framework, the eight-dimension profile for a SagaChain-class network is as follows:

Dimension	Assessment	Mechanism / Evidence Base	Stage Dependency
1\. Fee Revenue Productivity	Building. Thin at pre-commercial scale	Native-unit consumption across industries. Measured from on-chain data	Grows with industry activation

2\. Security Budget	Must be sized to enterprise adversarial model	Validator economics. Staking yield. Nakamoto coefficient	Independent of monetary stage
3\. Monetary Premium	**Structurally superior basis. Stability premium with documented mechanism**	Beberman-White supply rule. 4-stage implementation. Oracle-fed error correction	Strengthens Stage 2 → 3 → 4
4\. Compositional Breadth ∏ SC	**Primary differentiator. 23 industry factors including Insurance / Risk Transfer (NAICS 524, 60 classes, 8 domains)**	PraSaga Equation. Stable PSC increases the defensibility of higher SC values across all factors. Insurance pathway: policy × reinsurance × capital atomic composition	Grows with industry activation. Mode A ∏_capacity ≈ 450 is pro forma capacity only. ∏_demonstrated remains not applicable until Dimension 8 shows at least 1,000 transactions per industry. Strengthened by Stage 3+ monetary stability
5\. Composability Depth δ	Architectural thesis. Must be measured from atomic transaction data	Shared object model design. Δ target → 1	Independent. Requires live measurement
6\. Decentralization Quality	Critical. Enterprise trust requires it	Nakamoto coefficient. Validator distribution. Client diversity	Independent of monetary stage
7\. Developer Vitality	Cross-domain breadth is the differentiating signal	23-pathway developer base. Protocol deployments per industry	Grows with industry activation
8\. Transaction Volume by Industry	Mandatory live activity evidence once transactions exist. Currently zero at pre-commercial stage	Per-industry transaction attribution. 30d volume. Quality-tier support	Grows from zero only when live industry activity is measurable

6.5 Scorecard Modifiers: How δ and Anchor Relate to the Named Identity

The named PraSaga Equation is and remains:

V(SagaChain) = SC(I1) × SC(I2) × SC(I3) × …

δ, Composability Depth, and Anchor(stage) are analytical scorecard modifiers used to make the framework more precise. They do not rename or replace the PraSaga Equation. Dimension 4 separates pro forma capacity from demonstrated compositional breadth, which requires Dimension 8 evidence. Anchor provides scenario scale only and should not be treated as a standalone dollar valuation. The

named identity remains the public claim. The modifiers explain how that claim should be measured responsibly.

Term	Role	Belongs On	SagaChain-Specific Grounding
V(SagaChain) = ∏ SC(Industry)	The named PraSaga Equation. The public-facing identity	All public and analytical materials	Output of the compositional scoring framework
SC(Industry)	Value of SagaCoin used by that industry.	All public and analytical materials	Illustrative relative indices. Strengthens as monetary stage advances and PSC stability is demonstrated
δ: Composability Depth [0,1]	Scorecard modifier: co-location vs atomic composition	Analytical framework only	Architectural target: δ → 1 on shared object model. Requires live measurement from atomic cross-industry transaction data
Anchor(stage)	Scenario scale parameter. Stage-dependent, not manually set	Analytical framework and companion model	Stage 2: market-discovered PSC purchasing power at Stage 1 end. Stage 3: oracle-deflated real price target. Stage 4: internal SagaChain price index

The integrated claim: *SagaChain's valuation case depends on three mutually reinforcing claims: compositional breadth, expressed today as pro forma capacity across 23 pathways and demonstrated only when Dimension 8 shows at least 1,000 transactions per industry. Composability depth, represented by the shared-state target δ → 1. And a stability-premium monetary model that strengthens the analytical support for every SC factor in the product. No peer L1 assessed in this framework combines all three in the same form. Most peers lack at least one of the three.*

7. What This Framework Does Not Claim

Precision and honesty about the framework's limits are not weaknesses. They are the conditions under which the framework's genuine insights carry analytical weight.

Claim	Status in This Framework
TVL is a sufficient L1 valuation metric	**REJECTED. Category error**

The additive sum of industry values is sufficient	**REJECTED. Prices composition at zero**
∏ SC(Industry) is a native-coin price oracle	**REJECTED. It is a compositional score, not a price**
∏(1+SC) is the PraSaga Equation	**REJECTED. Different model. Do not conflate**
Object-count products are relevant	**REJECTED. Not the PraSaga Equation. Different claim entirely**
Illustrative SC tables are audited FDV	**REJECTED. Labeled illustrative. Assumptions documented**
Compositional breadth is sufficient without security and revenue	**REJECTED. Compositional thesis requires foundation in Dim. 1, 2, 6, and 8**
Co-location of industries on one chain = composition	**REJECTED. Composability depth (δ) must be measured separately**
SagaCoin monetary premium must be assessed from holder behavior alone	**REVISED. The Beberman-White management model provides a mechanistic basis for a stability premium. Assessment requires evaluating the model, not just sentiment**
The Anchor parameter has no first-principles grounding	**REVISED. The monetary management model's stage-dependent price path targets provide a principled anchor derivation program. Not yet fully implemented**
The current SC factor specification is fully analytically grounded	**PROVISIONAL. The relative index design is correct because it avoids unit abuse. The tier spread (1.05 to 1.60) is too narrow at scale. Wider spacing (e.g., 2.0/1.5/1.2/1.05) is the fix, not a unit change**
∏ SC(Industry) as a dimension is directionally correct	**ACCEPTED. Reed's Law grounds the product form (directionally correct / heuristic. ∏ of assigned scalars is not 2^n). Monetary stability strengthens every factor in the product**
TVL must be reported as a contrast metric alongside compositional scores	**ACCEPTED. Different questions. Both should appear in analyst outputs**
The three claims, compositional breadth, composability depth, and stability premium, are mutually reinforcing	**ACCEPTED. No peer L1 combines all three. SagaChain-class networks are analytically distinct on this basis**

8. The Ask: A New Analytical Standard

The L1 valuation debate will not shift because a new framework is theoretically superior. It will shift when analysts and investors have a practical, reproducible instrument they can apply to any chain with

public data. The following is the recommended analytical standard for evaluating global open permissionless decentralized trustless L1 blockchains.

8.1 For Analysts

- Report all eight dimensions, not one. A chain's TVL is one contrast data point. A proper evaluation requires the complete eight-dimension profile, including transaction volume by industry.
- Report Σ SC (siloed) and ∏ SC (compositional) side by side, with TVL as a third contrast column. Label what each column measures.
- Estimate δ, even qualitatively (high / moderate / thin / absent). A compositional breadth score without a depth estimate is incomplete.
- Report Dimension 8 as a mandatory peer to the other seven dimensions. Industry-level transaction volume is required to evaluate whether claimed pathways have real activity and magnitude.
- State the anchor source explicitly. An undocumented anchor allows analysts to change the result without a documented basis.
- Label SC factors with their tier (Dominant / Material / Present / Thin) and the evidence that supports each tier.
- Do not compare ∏ SC across chains as a price ratio. Cross-chain comparison is qualitative (shape of factors), not arithmetic.

8.2 For Investors

- Stop asking what the FDV is as the first question for a forever-minting, demand-responsive L1. FDV depends on an assumed fully diluted supply and prices native-coin appreciation over utility. It is the wrong primary score for this design.
- Stop asking which single niche product wins. That commoditizes the chain and prices open pathways at zero. The chain is the product. Industry pathways are the value proposition.
- Ask what cannot leave without breaking the record. That is the test that satisfies both thin moats and value what it secures. Industry is a leaf on that edge, not a first TAM.
- Ask instead which industry pathways use the native unit as factors in one product, not which contracts are deployed on the chain.
- Ask the Composability Depth. Ask whether those pathways transact atomically on shared state, or whether they are bridged containers.
- Ask what transaction volume exists by industry, and whether it supports the claimed pathway breadth.
- Ask the security budget relative to the value at risk across those pathways.
- Ask whether the developer base is growing in breadth (new domains) or just depth (more developers in existing domains).
- Do not take TVL as a primary score for multi-industry shared-state chains. It reports how much capital is locked, not how much utility is composing.

8.3 The Central Claim

Score L1s and peer L2 venues (Base, Arbitrum, Robinhood Chain) by compositional utility: industry pathways as factors in one product, not by FDV, TVL, or siloed niche revenue alone. USG / Big 4 / LMT / agency packets are builders or enclaves on SagaChain, not L2s.

V(L1) = SC(I1) × SC(I2) × SC(I3) × …

This identity does not produce a native-coin price. SC(Industry) is a function of the native unit used by that industry, not object counts, not TVL, not FDV. The product of those use-values, alongside the full eight-dimension framework, gives analysts and investors a more complete assessment of what a multi-industry shared-state L1 is actually worth than any single-metric approach can provide.

The test: *If your valuation model for a multi-industry L1 has one column, you are not valuing it. You are ranking its warehouse.*

Appendix A: Glossary

Term	Definition
TVL	Total Value Locked. USD-denominated value of assets deposited in smart contracts at a point in time. A liquidity metric, not a value metric. Correct as a contrast column. Wrong as a primary L1 score.
FDV (Fully Diluted Valuation)	Supply × native-coin price, assuming full supply is in circulation. A category error as the primary worth metric for a forever-minting, demand-responsive L1 design. FDV is a contrast / rejected-score column in this framework, not a hero metric.
Pathways	Industry class trees and standards implemented on SagaChain. Open rails so anyone can build a business on shared state. Not a product-company SKU list. Not proof that PraSaga's only job is to operate each vertical as a SaaS product. Each pathway that genuinely uses SagaCoin is a factor SC(I) in the Prasaga Equation.
Native-unit use-value (proxy)	For peer chains (Ethereum, Solana): native-unit use by industry, used as an illustrative proxy to teach the utility lens market-wide. Not SC in Dave's sense. SC(Industry) strictly means the value of SagaCoin used by that industry.
SC(Industry)	Value of the native unit used by a given industry, through fee settlement, reserves, royalty settlement, supply-chain utility, or other native-unit consumption.

Σ SC	Sum of SC factors across active industries. Scores the additive / siloed footprint. Does not capture cross-industry synergy.
∏ SC	Product of SC factors across active industries. Scores compositional breadth. The Prasaga Equation. Public release 1 splits ∏_capacity (Capacity-On, SagaChain PRO FORMA) from ∏_demonstrated (Dim 8 ≥ 1,000 on that chain). Do not mix Capacity bits into trailing peer ∏.
Capacity-On	Designed attach (class-tree / registry / written proposal). Feeds ∏_capacity only. Not trailing evidence. SagaChain Capacity labeled PRO FORMA.
Demonstrated-On	Dim 8 ≥ 1,000 native txns in that industry on that chain. Feeds ∏_demonstrated. Class load / wizard / ontology do not flip this.
Compose-edge	Cross-industry / cross-protocol shared-state composition edge. Related to δ. Not a separate product in ∏ SC.
Peer L2 venue	Chain-type peer in the score set (e.g. Base, Arbitrum, Robinhood Chain). USG / Big 4 / LMT / agency packets are builders or enclaves on SagaChain, not L2s.
δ (Composability Depth)	Fraction of total transaction volume involving atomic cross-industry interaction. Range [0,1]. Proposed multiplier to ∏ SC.
Anchor	Scenario scale modifier only. Not a published SagaChain dollar hero and not multiplied with ∏ for an FDV-style figure in public release 1. Must be grounded in an auditable signal when used.
Reed's Law	Network value scales as 2^n for group-forming networks. Theoretical foundation for the product form of compositional value.
Nakamoto Coefficient	Minimum number of entities that could collude to compromise a consensus mechanism. Higher = more decentralized.
P/F Multiple	Market cap divided by annualized protocol fee revenue. Analogous to P/E for equity. Allows cross-chain revenue comparison.
Illustrative scenario	A worked example using transparent, documented proxies. Not an audited valuation, not a price target, not investment advice.

Beberman-White Model	The SagaCoin Management Model authored by David Beberman and Lawrence H. White, PhD. A four-stage demand-responsive supply rule targeting purchasing-power stability through quarterly mint/burn adjustments.
Stability Premium	Monetary premium earned because a coin's purchasing power is stable and predictable, making it genuinely useful as a medium of exchange. Structurally distinct from a speculation premium earned through fixed-supply scarcity.
Speculation Premium	Monetary premium earned because a fixed or pre-determined supply means price appreciates as demand grows. Bitcoin's primary monetary premium type.
gM(t)	Net quarterly supply expansion rate in the Beberman-White model. The policy instrument: positive = net mint. Negative = net burn.
gCt3	Three-quarter moving average of trend purchasing-power growth. The baseline growth rate in the Beberman-White formula. Insulates policy from short-term noise.
pp*(t)*	Target log purchasing power at start of quarter t. Defines the price path the monetary model aims to maintain.
Anchor(stage)	The per-unit PSC reference value in the Prasaga Equation, specified as a function of the monetary management model's active stage rather than set manually.
Flatcoin	A coin designed to maintain stable real purchasing power against an external price basket (CPI, PCE, commodity index). SagaCoin is NOT a flatcoin. Stage 3 uses external inflation indices as a transitional reference while the internal economy is too small to self-reference. Stage 4 replaces external indices entirely with SagaChain's own internal price index. SagaCoin's terminal design objective is purchasing-power stability denominated in its own economy, a structurally distinct category for which no established term currently exists. The classical gold standard is cited in the Beberman-White paper as a prototype for demand-responsive supply, not as a model for the terminal state.

Appendix B: Recommended Data Sources

Dimension	Primary Source	Frequency
TVL (contrast)	DefiLlama /v2/chains API	Daily
Protocol fees	DefiLlama /overview/fees/{chain}	Daily / 30d rolling
Stablecoin float	DefiLlama stablecoinchains API	Daily
RWA active market cap	DefiLlama /rwa/chains	Weekly
Developer activity	Electric Capital Developer Report	Annual (monthly updates)
Validator / staking data	Chain-specific explorers (Etherscan, Solscan, etc.)	Daily
Nakamoto coefficient	Rated.Network, Validators.app, Solana Beach	Weekly
NFT volume	DefiLlama chain pages, DappRadar	Daily
Atomic cross-protocol transactions	Chain explorer + protocol analytics (Dune dashboards)	Weekly
Transaction volume by industry	Dune per-industry distinct transaction queries. Chain explorer telemetry. Protocol maps	Weekly / 30d rolling

Appendix B1: Transaction Volume by Industry (confirmed)

Status: Confirmed and measured for Tier 1 peers ETH, SOL, BSC, Base, Arbitrum, Monad, and Robinhood Chain via Dune Dimension 8 queries in public release 1. Tier 2 CSVs are in Current_Assets/queries/. Coverage is map-limited per chain.

Definition: Dimension 8 measures transaction volume by industry, measured here as distinct transaction counts attributed to each industry vertical using a 30-day window by default. It is reported both per industry and as a sum across active industries. It is an activity and magnitude dimension.

Relationship to Dimension 4: Dimension 4 remains compositional breadth via the relative SC index and the named Prasaga Equation $V(L1) = \prod SC(\text{Industry})$. Dimension 8 does not enter that product. Multiplying raw transaction volumes, or dollar volumes, inside $\prod$ recreates the unit-abuse problem. The relative index remains the correct input to the product.

Relationship to TVL: TVL measures locked capital stock. Dimension 8 measures transaction flow and activity by industry. They answer different questions and must not be conflated.

Relationship to δ (Dimension 5): δ is the share of transactions that are atomically cross-industry. Dimension 8 is the absolute, or tagged, volume of transactions by industry, including single-industry activity. Both can be derived from the same ledger telemetry, but they score different phenomena.

Calculator: L1_Complete_Valuation_Calculator_v3.html (public release 1, free public tool, Tier 1, Tier 2, and sandbox, Capacity / Demonstrated) loads measured Dimension 8 volumes from Dune per-industry distinct transaction counts, using the same protocol maps as δ and run 11 September 2026. SagaChain remains zero because it is pre-commercial. Caveats: Solana PAYMENTS includes the SPL Token program (Tokenkeg) and is therefore inflated relative to vertical payments alone. Base, Arbitrum, Monad, and Robinhood Chain may use the Ethereum address map, so coverage is thin for native deployments. Peer Mode A/B On for the six Dimension 8-mapped industries follows each chain's own measured volume threshold of at least 1,000 transactions, not Ethereum's On set. See Current_Assets/queries/DIM8_RUNBOOK.md. Dune Copilot is chat (English). The SQL editor needs WITH/SELECT only. Run Dim 8 and δ as two separate queries.

Scoring guidance: Report Dimension 8 alongside Dimensions 1 through 7. Use Dimension 8 as evidence when judging Mode B and quality tiers. Never fold Dimension 8 into ∏ SC. The investor blank-page slide remains analogy-only and does not display Dimension 8 tables.

Measured Dimension 8 snapshot (transaction volume measured as distinct transactions by industry, 30-day window ending at query run 11 September 2026). Ethereum: PAYMENTS 21.39M, FINANCE 2.58M, INFRA 0.44M, NFT 0.23M, RWA 0.18M, GAMING 0.07M. Solana: PAYMENTS 1.079B (Tokenkeg-inflated), FINANCE 69.9M, NFT 6.7M, RWA 0.15M, INFRA 3.3K. GAMING absent in map hits. BSC: PAYMENTS 213.8M, FINANCE 32.3M. Base: FINANCE 1.01M, NFT 86K, INFRA 8.3K, RWA 196, PAYMENTS 62, GAMING 1 (ETH address-map coverage caveat). Arbitrum, Monad, and Robinhood Chain are measured with the Ethereum address-map limitation noted in Section 5.4. Tier 2 measured volumes for Polygon, Avalanche, Optimism, Plasma, Cardano, Ink, and X Layer, and map-limited zeros for Stellar, Sui, Anubis, and Provenance, are in the Section 5.4 Tier 2 table. Analytical Mode A On includes Gaming for Ethereum, excludes Gaming for Solana, and excludes FinOps, RWA, and Gaming for Base under the 1,000-transaction gate.

Disclosure: This report is produced by PraSaga Foundation for public campaign purposes. All worked examples are illustrative scenarios under documented assumptions. Nothing in this report constitutes investment advice, an audited valuation, or a price target. SC factors are relative activity indices, not measured economic outputs. The Prasaga Equation is a proposed relationship for scoring compositional value, not a mathematical identity and not a native-coin price calculator.