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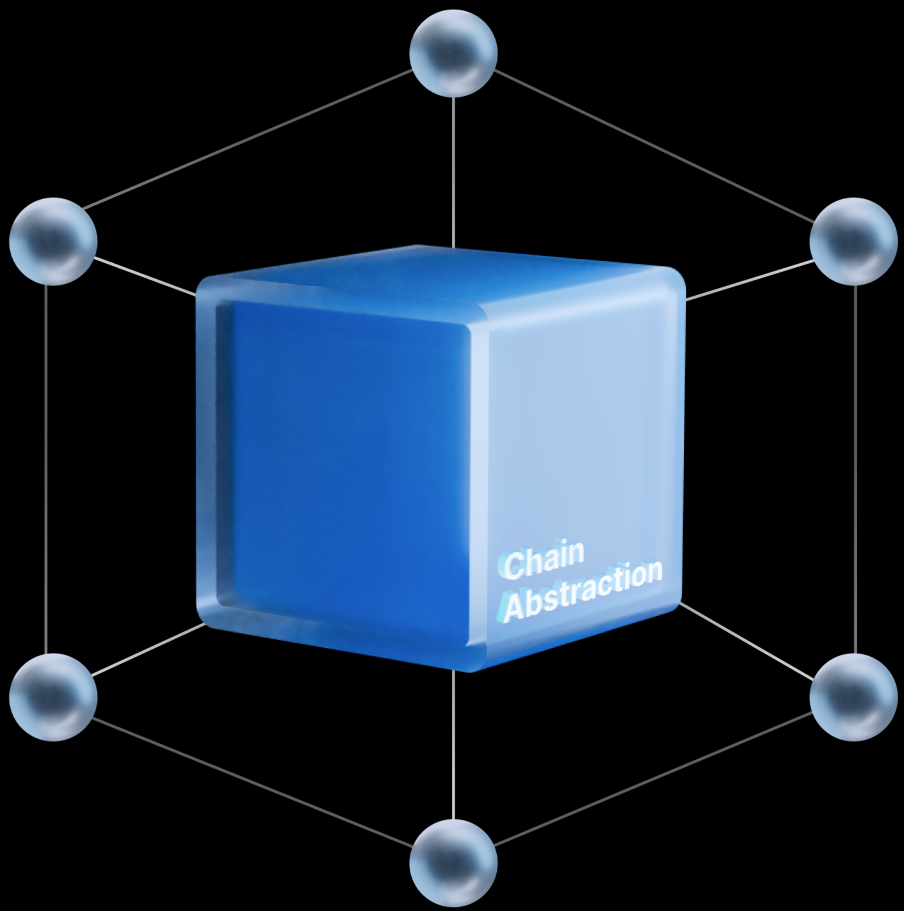
Analyzing Chain Abstraction

An Inevitable Outcome of Web3 Diversification



Abstract

Background of Chain Abstraction: In the context of Web3's multi-chain explosive ecosystem development, there are three main conflicts at the user level: (1) Distribution conflicts of investor capital; (2) Capital flow conflicts; (3) User experience conflicts. The explosive growth in the number of chains has not only created friction in capital flow but also complicated investors' on-chain experience. This mainly manifests in: different chains requiring different wallets to manage; different types of assets in different wallets (different chains mean different tokens); and exposure to capital flow risks (cross-chain vulnerabilities and financial friction in cross-chain transactions).

The Rise of Chain Abstraction: Chain abstraction has emerged as a solution-oriented framework. If modularization is a vertical integration strategy, then chain abstraction is a horizontal one. Chain abstraction is ”a user experience free from manual interactions with multiple chains,” which hides the underlying differences between blockchains (such as consensus mechanisms, Gas fees, native tokens, etc.), allowing users to complete multi-chain interactions without needing to understand specific chain details. Chain abstraction focuses on user intent - the desired outcome - while hiding unnecessary details in the implementation process.

Architecture of Chain Abstraction: The framework consists of three layers. Account-level abstraction serves as the frontline of user experience, application-layer abstraction provides tools for developers, and blockchain-level abstraction forms the foundation of the system, ensuring technical feasibility.

Purpose of Chain Abstraction: Within Web3's diverse ecosystem, chain abstraction simplifies complexity. Think of each blockchain as a country—chain abstraction acts as a universal passport, eliminating the need for ”visas” in the metaverse. Rather than offering a single solution, it functions as an overarching framework that optimizes user experience through multilevel collaboration.

Topic Tags:

Blockchain, Chain Abstraction, Research, ZK

Gate Research: Analyzing Chain Abstraction: An Inevitable Outcome of Web3 Diversification

1 Background of Chain Abstraction

1.1 Abstraction and Modularity in Web2

In traditional software development, abstraction and modularity are two core design principles that are closely interrelated. Here are their definitions:

1.1.1 Modularity

Modularity involves breaking down a system into independent, reusable functional units (modules) to reduce complexity through division. For example, traditional e-commerce platforms use modular design to split complex operations into separate modules, including order processing, payment, inventory, and user management modules. Different business functions are achieved by combining these modules.

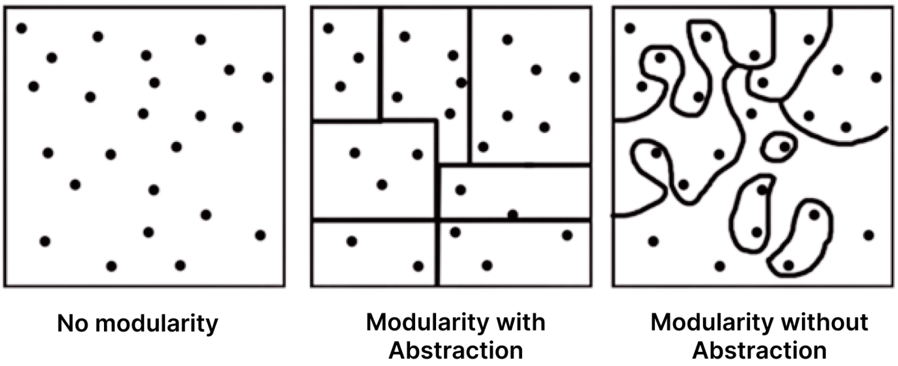
1.1.2 Abstraction

Abstraction is a design method that simplifies complex systems by concealing unnecessary details while highlighting essential features. At its core, it focuses on filtering information and organizing it hierarchically. For example, this involves defining what a payment is and establishing clear boundaries for a payment module.

1.1.3 Relationship between Abstraction and Modularity

Modules represent levels of abstraction, while abstraction simplifies the expression of modules and defines their boundaries.

Figure 1: Relationship between Modules and Abstraction



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1.2 Abstraction and Modularity: From Web2 to Web3

While Web2's abstraction and modularity primarily exist within closed systems (like within a single app) where developers only need to focus on a single platform's technical details, Web3's decentralized nature creates a more complex relationship between modularity and abstraction due to the coexistence of multiple blockchains. Here's how these concepts extend:

1.2.1 Chain Modularity

Traditional single blockchains are divided into independent modules (such as Data Availability Layer (DA), Execution Layer, Settlement Layer, Consensus Layer) that work together through standardized protocols to create flexible architectures. These modules include:

Execution Layer: The computational layer that processes transaction logic and smart contract operations.

Settlement Layer: The verification layer that confirms transactions and records them permanently.

Data Layer: The foundational module that ensures transaction data is published and verifiable by network nodes.

Consensus Layer: The protocol layer that coordinates nodes to maintain ledger consistency.

1.2.2 Chain Abstraction

Chain abstraction is a user experience free from manual interaction with multiple chains, hiding the underlying differences between blockchains (such as consensus mechanisms, Gas fees, and native tokens) to enable multi-chain interaction without users needing to understand chain-specific details.

Chain abstraction focuses on user intent—the desired outcome—while hiding unnecessary details of how that outcome is achieved.

1.2.3 Relationship Between Chain Abstraction and Chain Modularity

The essence of modularity is the collaborative division of labor, where distinct modules work together to build blockchains, thereby reducing development costs and meeting the needs of blockchain builders.

And, the essence of chain abstraction lies in fulfilling the user's ultimate intent. By hiding the underlying processes required to realize that intent, it reduces interaction complexity and enhances the user experience on blockchain platforms. Together, these elements help build a Web3 ecosystem that is both user- and developer-friendly.

1.3 Current State of Web3 Ecosystem and Potential Conflicts

1.3.1 Current Status

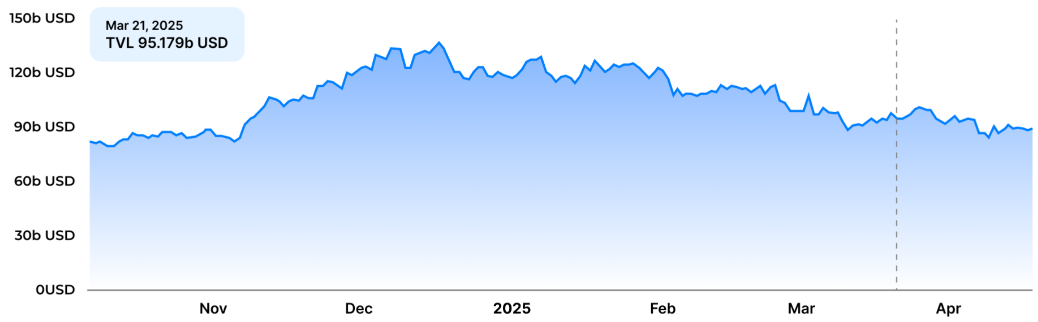
According to market data, the average market capitalization of the cryptocurrency market in 2024 is approximately $2.6 trillion, representing a 62.5% increase from the previous bull market in 2021 (which had an average market cap of $1.6 trillion). Along with this market cap growth, Web3 public chains continue to diversify. As of March 21, 2025, Defillama statistics show 369 public chains, with 179 chains having a total value locked (TVL) exceeding $1 million. Detailed data is shown in the table below:

Category	Number of Chains	TVL	Average TVL
Defillama Statistics	369	95,173.00	245.49
TVL $1 Million and Above	179	90,550.73	505.87

Gate Research, Data from: Defillama

Currently, there are approximately 233 sovereign nations and regions worldwide, with 180 currencies recognized as legal tender by UN member states, UN observers, partially recognized states, and their territories. After excluding currencies with fixed exchange rates, there are 130 distinct currencies. Web3's diversity has already surpassed the number of fiat currencies in our global village.

Figure 2: Web3 Public Blockchain TVL



Gate Research, Data from: Defillama

If we consider each blockchain as a country, the multi-chain ecosystem represents a metaverse global village. In this rapidly evolving landscape where new blockchains continue to emerge, stakeholders face urgent challenges that need to be addressed.

1.3.2 Builder's Challenges

Historically, blockchain development required building all functionalities from scratch, resulting in high development costs and low efficiency. In response, blockchain modularity emerged, allowing developers to reduce costs and increase efficiency by combining pre-built modules.

1.3.3 User Challenges

A. Distribution Conflicts of Investor Capital

The diversification of blockchains has led to challenges in capital distribution, as shown in the following data:

Market	Number of Companies/Projects	Market Cap	Average Market Cap	Average Market Cap Ratio
Web3	17,184	2,851.56	0.17	0.0058%
A-Shares	5,395	137,846.17	25.55	0.0185%
US Stocks	5,574	821,024.92	147.30	0.0179%

Gate Research, Data from: Wind, CoinGeko

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As of March 21, 2025, the cryptocurrency market's capital is spread across 17,184 projects, compared to 5,395 companies listed on China's A-shares and 5,574 on the US stock market. This high number of projects results in thin capital allocation per project.

B. Capital Flow Conflicts

In traditional financial markets, investors can trade in both A-shares and US stocks using a single account and currency, thanks to well-established infrastructure. However, in the Web3 market, the multi-chain ecosystem and varying Gas fees force investors to maintain different wallet accounts and tokens for different chains, making capital movement between chains extremely complicated. This is a major factor contributing to the liquidity shortage in the Web3 market.

C. User Experience Challenges

The explosive growth in the number of chains has not only created friction in capital flow but has also complicated the on-chain experience for investors. This manifests in three main ways: managing different wallets for different chains, dealing with various asset types across different wallets (different chains mean different tokens), and exposure to capital flow risks (cross-chain vulnerabilities and transaction friction losses).

In light of these challenges, the concept of chain abstraction emerges as a potential solution.

2 Analysis of Chain Abstraction Sector

2.1 The Rise of Chain Abstraction

Chain abstraction is key to solving user pain points. At its core, it’s not merely a technology or tool. Chain abstraction is a concept and approach focused on addressing user-level challenges in the current Web3 ecosystem. This concept unfolds through the following layered structure.

The conceptual framework of chain abstraction consists of three layers. Account-level chain abstraction serves as the front line of user experience, Application-layer chain abstraction provides tools for developers, and Blockchain-level chain abstraction forms the foundation of the system, ensuring technical feasibility. The layered structure of chain abstraction is shown in the following diagram:

Figure 3: Chain Abstraction Conceptual Layers

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2.1.1 Application Layer Chain Abstraction

The application-level layer, also known as orchestration, provides developers with standardized toolkits (such as SDKs and APIs) and frameworks to build cross-chain native applications (dApps) without manually handling the underlying differences between different blockchains. For example:

(1) Cross-chain workflow orchestration: Automates the execution of multi-chain transactions (like cross-chain transfers and asset exchanges) using unified interfaces.

(2) Smart contract adaptation: Simplifies smart contract interactions across different chains, letting developers concentrate on their core business logic.

2.1.2 Account Level Chain Abstraction

Account level chain abstraction focuses on seamless integration of user identity and operations, specifically:

A. Unified Account Identity

Users only need one account to access all supported blockchain networks, eliminating the need to create and manage separate wallet addresses or private keys for each chain. For example, XION's universal account system allows users to interact with multi-chain DApps through a single identity, with automatic cross-chain asset transfers.

B. Seamless Cross-chain Operations

When users initiate transactions, the system automatically manages underlying technical differences like target chain Gas tokens and signature requirements. For example, users can purchase NFTs on Ethereum using USDT from the BNB chain without having to manually exchange Gas tokens or switch between networks.

C. Global Account State Synchronization

Account balances, permission rules, and other state information are synchronized in real-time across multiple chains, with users operating based on a unified account view across any chain.

2.1.3 Blockchain-Level Chain Abstraction

Blockchain-level chain abstraction focuses on integrating underlying protocols and designing interoperability. Its main characteristics include:

A. Modular Layering

Individual blockchains are divided into separate functional modules（such as data availability layer, execution layer, and consensus layer），and integrated into flexible architectures using standardized interfaces. For example, Celestia specializes in data storage, while EigenLayer provides a security validation layer, enabling developers to build application chains by combining modules as needed.

B. Cross-Chain Communication Protocols

These define universal message formats and validation mechanisms to ensure state synchronization and transaction atomicity between different chains. Typical solutions include LayerZero's universal chain communication protocol and Polygon's AggLayer, which uses aggregated ZK proofs to achieve cross-chain state consistency.

C. Unified Execution Environment

Supports compatibility with multiple virtual machines (EVM, SVM, MoveVM), allowing developers to deploy cross-chain smart contracts within the same framework.

2.2 Development History

2.2.1 Early Stage (2020-2022): Exploration of Modularity and Interoperability

A. Background

Ethereum's performance limitations became evident, prompting the emergence of modular architectures (like Celestia for data availability and Cosmos SDK for building application chains). Despite these advances, users continued to struggle with managing multiple wallets and Gas tokens.

B. Key Breakthroughs

Cross-chain bridges (like Stargate, LayerZero) made asset transfers between chains possible, but relied on either centralized validation or liquidity pool models.

Account abstraction (ERC-4337) simplified user operations within single chains, laying the foundation for future chain abstraction.

2.2.2 Rapid Growth Period (2023-2024): Chain Explosion and Standardized Protocol Rise

A. Background

Chain proliferation: Ethereum Layer2 (Arbitrum, zkSync) and application chains (dYdX) exploded, leading to fragmented user experiences.

Market narrative shift: As modular technology matured, industry focus shifted from ”launching chains” to ”using chains,” making chain abstraction a core requirement.

B. Technical Framework Development

Intent networks and solvers: Protocols like LI.FI aggregated cross-chain bridges and DEX liquidity to automate user intent execution (such as optimal trading path matching).

Standardized interfaces: ERC-7521 (intent standard) and ERC-7683 (solver protocol) promoted unified cross-chain operations.

C. Key Projects

Everclear (formerly Connext): First to introduce the term ”chain abstraction,” supporting cross-chain deposits and unified asset management.

Particle Network: Launched universal accounts, universal Gas tokens, and liquidity aggregation, enabling seamless interaction between BTC and EVM chains.

2.2.3 Ecosystem Integration Period (2024-2025): The Emergence of Omnichain Interoperability Networks

A. Technical Integration

Cross-chain Protocol Infrastructure: LayerZero and Wormhole have become the foundational layers for multi-chain communication, supporting atomic transactions and state synchronization.

Modular L1: Projects like Particle Network are building dedicated chain abstraction layers using Cosmos SDK, integrating data availability (Celestia, EigenDA) and consensus mechanisms (dual staking model).

B. User Experience Upgrades

Universal Accounts: Users can operate multi-chain assets with a single account, such as Aave's unified lending interface covering Ethereum, Polygon, and other chains.

Gas Token Aggregation: Particle's universal Gas token allows users to pay fees across all chains with a single token.

C. Ecosystem Expansion

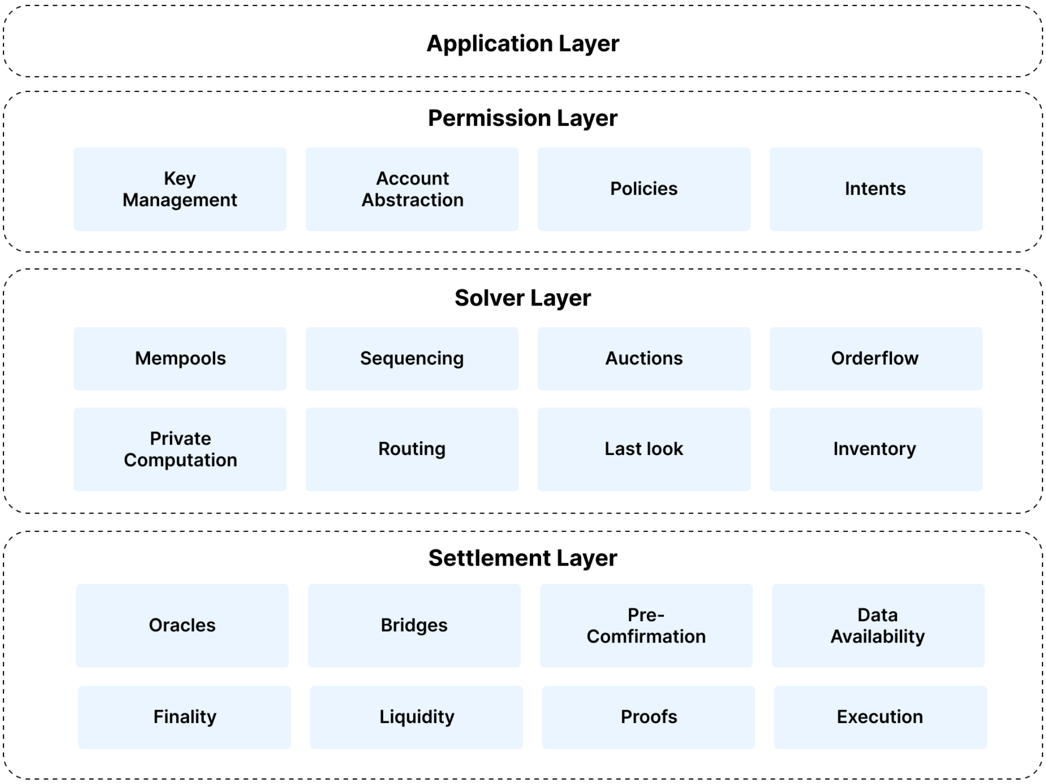
Bitcoin Ecosystem Integration: BTC Connect bridges Bitcoin wallets with EVM chain smart contracts, enabling gasless transactions.

Shared Sequencers and Rollup Clusters: Polygon AggLayer and Optimism Superchain achieve cross-chain atomicity through ZK proof aggregation.

2.3 Technical Architecture of Chain Abstraction

The technical architecture of chain abstraction aims to encapsulate multi-chain complexity into a unified user interface through layered design and modular components. Its core architecture can be divided into three major functional modules: the **Permission Layer, Solver Layer, and Settlement Layer**, which work together with the underlying blockchain network to achieve omnichain interoperability.

Figure 4: Chain Abstraction Technical Architecture



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2.3.1 Technical Layer Architecture

A. Permission Layer

The Permission Layer serves as the entry point for user interaction with the chain abstraction system. Its core functions include unified account management and intent expression. Key technologies include:

Account Abstraction (AA): Achieves cross-chain identity unification through smart contract accounts (like ERC-4337). For example, Particle Network's Universal Accounts allow users to operate assets across 50+ chains using a single address, without needing to understand underlying chain signature differences.

Intent Standardization: Users only need to declare their goals (such as "exchange tokens at lowest cost") without specifying execution paths. NEAR's BOS operating system converts user requirements into cross-chain operation instructions through intent parsing interfaces.

Permission Control: Supports security mechanisms like multi-sig and social recovery, for example, enhancing account security through EigenLayer's re-staking.

B. Solver Layer

The Solver Layer is the core logic layer of chain abstraction, responsible for path optimization and resource coordination:

Intent Decomposition: Breaks down user intent into executable cross-chain operation sequences. For example, Particle Network's Intent Fusion technology dynamically matches optimal paths through off-chain Solver Networks, taking into account parameters such as real-time Gas fees and liquidity depth.

Liquidity Aggregation: Integrates liquidity pools from multiple-chain DEXes and cross-chain bridges. For instance, LI.FI aggregates 200+ protocols to achieve atomic cross-chain asset exchanges.

Risk Hedging: Validates cross-chain states through oracles (like Chainlink) to prevent losses from price fluctuations or execution failures.

C. Settlement Layer

The Settlement Layer ensures atomicity and finality of cross-chain transactions:

Cross-chain Communication Protocols: Transmits transaction states using protocols like LayerZero and Wormhole. For example, Polygon AggLayer uses ZK proof aggregation to achieve multi-chain state synchronization, reducing Ethereum mainnet settlement delays.

Universal Gas Tokens: Introduces tokens like SPARTI as cross-chain Gas payment mediums, eliminating the need for users to hold native tokens of each chain. Particle Network balances security and cost through dual staking (SPARTI+ETH).

Transaction Coordination: Uses shared sequencers (like Astria) to ensure atomic execution of cross-chain transactions, preventing state inconsistencies from partial successes.

D. Blockchain Layer (Not shown in Figure 3)

As the underlying data storage and consensus layer, it provides modular expansion support:

Modular Architecture: Flexible combination of components like Cosmos SDK and Celestia DA layer. For example, Particle Network adopts a modular L1 design compatible with multiple virtual machine environments including EVM and MoveVM.

Interoperability Protocols: Protocols like IBC (Cosmos) and XCM (Polkadot) enable heterogeneous chain communication. Union protocol ensures trustless asset transfers through ZK light client cross-chain consensus validation.

2.3.2 Key Technical Innovations

A. Intent-Driven Architecture

Seamless User Interaction: Users only need to focus on their desired outcomes. For example, using the Socket protocol to "purchase multi-chain NFTs with one click," while the backend automatically handles cross-chain transfers and Gas payments.

Dynamic Path Optimization: Solver networks provide optimal quotes through competitive mechanisms (like auctions), while protocols like 1inch Fusion incorporate MEV protection to improve execution success rates.

B. Liquidity Abstraction and Aggregation

Cross-chain Atomic Transactions: Through aggregation layers (like Polygon AggLayer), scattered on-chain liquidity is consolidated into a unified pool, allowing users to purchase Ethereum DeFi products directly with BTC.

Liquidity Routing Protocols: Protocols like Skip Protocol optimize slippage through cross-chain MEV capture, minimizing user transaction costs.

C. Security and Performance Optimization

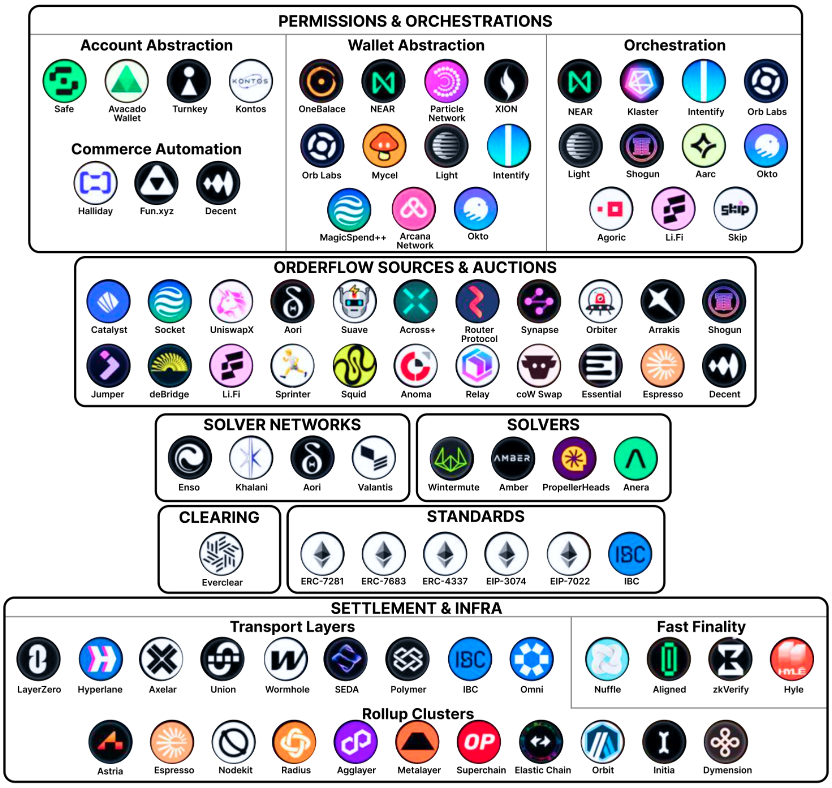
ZK Proof Integration: Polygon AggLayer uses ZK proof aggregation to validate multi-chain states, reducing on-chain verification costs and improving throughput.

Asynchronous Execution Framework: Supports long-duration cross-chain business processes (such as lending-leverage cycles), ensuring eventual consistency through state channels and optimistic rollups.

2.4 Chain Abstraction Ecosystem Map

Based on the technical architecture of chain abstraction, the current ecosystem map is shown in the following figure:

Figure 5: Chain Abstraction Ecosystem Map



Gate Research, Data from: The Rollup

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For detailed ecosystem projects, please refer to *Appendix "1. Classification of Chain Abstraction Ecosystem Projects"*. Below is an introduction to each segment of the ecosystem map:

2.4.1 Permissions & Orchestrations

(1) Account Abstraction: This represents a fundamental shift in how users interact with blockchain, simplifying account management and transaction signing. In simple terms, account abstraction eliminates the need to create separate accounts for different DApps, allowing users to interact with multiple DApps using a single universal account.

(2) Commerce Automation: These platforms aim to simplify and automate blockchain-based business processes. They enable businesses to automate payments, settlements, and other commercial transactions, reducing the need for multi-step checkout processes. This not only speeds up transactions but also reduces the likelihood of human error. In simple terms, it uses smart contracts to conduct transactions, reducing the complexity of manual operations.

(3) Wallet Abstraction: These platforms (sometimes called account-level chain abstraction) focus on simplifying user experience by abstracting the complexity of managing multiple balances and wallets across different blockchains. They provide a streamlined wallet experience and consolidate token balances in one place. Users get a unified experience without needing to manually bridge or swap tokens to manage assets across different chains. In simple terms, users can manage all their cross-chain assets in a single wallet without dealing with cross-chain transfers and token exchanges.

(4) Orchestration: This coordinates activities between multiple blockchains, ensuring efficient execution of multi-chain operations. For example, buying assets on one chain, transferring them across chains, and then staking them on another chain. In simple terms, it abstracts the complexity behind cross-chain operations, making multi-chain interactions simple and convenient.

2.4.2 Orderflow Sources & Auctions

Orderflow sources represent the origin of user intentions and are a crucial component of the DeFi ecosystem. Auctions facilitate the execution of these orderflows, ensuring transactions are executed at efficient prices. Platforms specifically manage orderflow and conduct auctions. For example, UniswapX routes transactions through multiple off-chain and on-chain liquidity sources to ensure optimal execution for users.

2.4.3 Solver Networks

Solver networks focus on resolving complex computational challenges in the blockchain ecosystem by leveraging third-party agents (called solvers). These solvers fulfill user intentions and perform tasks like transaction validation, price discovery, and other decentralized operations that require significant computational resources. These platforms optimize blockchain network performance and efficiency by distributing these tasks across the solver network.

2.4.4 Solvers

Solvers are off-chain participants specialized in optimizing various blockchain functions, including transaction batching, arbitrage, cross-chain liquidity provision, and user intent execution. In cross-chain use cases, solvers need to quickly fulfill user intentions on target chains while bearing finality risks from canonical bridges. This represents the verification logic behind chain abstraction, which remains invisible to users.

2.4.5 Clearing

Clearing platforms are responsible for ensuring correct and efficient settlement of transactions across different blockchains. Decentralized clearing services automate processes through smart contracts, ensuring all parties fulfill their obligations (such as asset delivery and verification), and efficiently rebalance asset inventories through liquidity pool mechanisms.

2.4.6 Standards

Standards are the pillars of the blockchain industry, ensuring different platforms and protocols can coordinate and interoperate effectively.

ERC-7281: Solves cross-chain token non-fungibility issues through decentralized bridge permissions. For example, wrapped versions of USDC on different chains can achieve standardized circulation through issuer-authorized bridging.

ERC-7683: Standardizes cross-chain intent interfaces and settlement logic by introducing ”cross-chain orders” and ”settlement contract interfaces.” Users can complete multi-chain operations with a single signature. For instance, Uniswap uses ERC-7683 to aggregate multi-chain liquidity for atomic cross-chain transactions.

ERC-4337: Introduces Account Abstraction, allowing users to use smart contract wallets instead of traditional private key accounts, supporting Gas fee payment in non-ETH tokens and batch transactions.

EIP-3074: Implements permission delegation for EOA accounts through opcodes, supporting authorized transactions and batch operations. For example, users can authorize DApps to automatically execute ”approve + transfer” combined operations.

EIP-3370: Adds prefix identifiers to addresses from different chains (e.g., ”arb:0x...” for Arbitrum addresses) to reduce cross-chain transfer errors.

EIP-7579: Defines minimal interfaces for modular smart accounts, ensuring interoperability between different implementations.

2.4.7 Settlement & Infrastructure

(1) Transport Layer: Responsible for facilitating the transfer of data and assets between different blockchains. These projects provide the infrastructure that enables blockchains to communicate.

(2) Fast Finality: Solutions focused on accelerating transaction settlement, making blockchain networks more efficient and user-friendly.

(3) Rollup Clusters: Groups of rollups sharing liquidity and infrastructure to achieve network effects. By working together, these rollups can handle large transaction volumes, making the cluster more scalable and capable of supporting a broader range of applications.

2.5 Potential Risks

2.5.1 Vulnerability Propagation Risk

Chain abstraction requires deploying adaptation contracts across multiple chains (such as ERC-7683 settlement contracts). A vulnerability in any single chain’s contract can affect the entire system. For example, in 2024, Aave’s cross-chain account functionality experienced user asset anomalies due to contract logic errors on the Polygon side.

2.5.2 Centralization Risk

Chain abstraction requires building unified operation interfaces (such as aggregator wallets or cross-chain DApps). If this layer is highly centralized, it could become a single point of failure for hacker attacks or regulatory intervention.

2.5.3 User Awareness Risk

Similar to bank misconduct, users may not be aware of issues. When chain abstraction obscures underlying logic and details, users become less sensitive to fundamental risks. For instance, when users initiate a ”best rate exchange,” their assets might route through DEXs on high-slippage chains, resulting in hidden losses.

2.6 Future Development: AI-Driven and Cross-Chain Interoperability

2.6.1 Technical Direction

AI + Intent Parsing: Dynamic optimization of cross-chain path selection, combining real-time Gas fees and liquidity depth.

Omnichain Interoperability Network: Trustless cross-chain state synchronization through ZK-based light client verification (such as Union protocol).

2.6.2 Application Scenarios

DeFi and GameFi Integration: Automation of cross-chain strategies (such as multi-chain leveraged yield farming) and interoperability of in-game assets across chains.

Regulatory Adaptation: Chain abstraction protocols integrate compliance tools (such as KYC modules) to lower institutional entry barriers.

3 Conclusion

In the context of Web3's diverse ecosystem, Chain Abstraction aims to simplify complexity. If we think of each blockchain as a country, then Chain Abstraction is like having a universal passport that eliminates the need for "visas" in the metaverse. Rather than being a single-system solution, Chain Abstraction represents an overarching logical framework that coordinates across multiple dimensions to achieve its ultimate goal: improving the user experience.

Appendix

1. Classification of Chain Abstraction Ecosystem Projects

Category	Specific Projects
Permissions & Orchestrations	
Account Abstraction	Safe、Avocado Wallet、Turnkey、Kontos
Commerce Automation	Halliday、Fun.xyz、Decent
Wallet Abstraction	OneBalance、NEAR Protocol、Mycel、Particle Network、Socket Protocol、Orb Labs、Light、Intentify、XION、Arcana Network、Okto
Orchestration	NEAR Protocol、Orb Labs、Light、Intentify、Okto、Klaster、Aarc、Shogun、Agoric、Infinex、Li.Fi
Orderflow Sources & Auctions	Catalyst、Socket Protocol、Uniswap、Aori、Across、Router Protocol、Synapse、Orbiter、Arrakis、Shogun、DLN、Li Fi、Sprinter、Squid、Anoma、Relay Protocol、CoWSwap、Essential、Espresso、Decent、Jumper
Solver Networks	Enso, Khalani, Aori, Valantis
Solvers	Wintermute, Amber, Propeller Swap, Anera Labs
Clearing	Everclear
Standards	ERC-7281, ERC-7683, ERC-4337, EIP-3074, EIP-3370, EIP-7579
Settlement & Infrastructure	
Transport Layer	Layer Zero, Axelar, Union, Wormhole, SEDA, Polymer Labs, IBC Protocol, Omni, Hyperlane
Fast Finality	Nuffle, Aligned, ZKV Protocol, Hyle
Rollup Clusters	Optimism Superchain, Arbitrum Orbit, ZKsync Elastic Chain, Caldera Metalayer, Initia, Dymension, Polygon AggLayer, Astria, Espresso, Nodekit, Radius

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Author: Moose

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