



# Glue

## The Blockchain Ecosystem

WHITEPAPER

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# Glue network:

Technology Stack



# Glue Network: Technology Stack

## Abstract

Glue is pioneering a transformation in blockchain technology through an integrated Layer 1 and use-case optimised Layer 2 network, underpinned by the Substrate framework. While the broader crypto landscape has been enamoured with creating technology for technology's sake, Glue focuses on what truly matters: usability and practicality. This white paper delineates Glue's avant-garde strategy to transcend the inherent limitations of conventional blockchains, with a strong emphasis on enhancing accessibility, user experience, and security through ease of use. The modular architecture of Substrate empowers Glue to deliver bespoke use-case optimised Layer 2 solutions designed for distinct applications, encompassing finance, gaming, and asset transfers, thereby ensuring unparalleled scalability and performance. Glue's unified token model and integrated native multi-signature capabilities bolster usability and security, while the service layer and sophisticated front-end development abstract complex technicalities, democratising blockchain technology for all users. By harmonising economic incentives and maintaining value within the ecosystem, Glue establishes a robust, inclusive, and efficient blockchain environment, guaranteeing seamless integration and superior user experiences. In an industry rife with complexity, Glue's mission is refreshingly simple: to make blockchain accessible to everyone, everywhere, without compromising the technological integrity and potential of the blockchain revolution.

## Introduction

Glue is not merely constructing the future; it is orchestrating a paradigm shift in the blockchain domain by leveraging the Substrate framework to forge an accessible and user-centric ecosystem. In a field where technological sophistication frequently eclipses practicality, Glue distinguishes itself by offering a cohesive Layer 1 and Layer 2 ecosystem, all deployed by the foundation with a product vision in mind that facilitates seamless communication, asset transfer, and decentralised application (dApp) deployment. By rectifying the fundamental inadequacies of traditional blockchains, chiefly accessibility and usability, Glue guarantees an unparalleled user experience.

The prevailing notion that the future of finance must be universally accessible is not a mere platitude for Glue; it is a mandate. While the industry is mired in the complexity of technology for its own sake, Glue advances a novel doctrine: security through ease of use. One of the critical failures of other ecosystems, such as Ethereum, is their lack of a unified product strategy. In Ethereum, anarchy reigns: disparate teams work on the core technology and Layer 2 solutions without coordination, fostering adversarial relationships rather than collaboration. This fragmented approach leaves dApps to a chaotic wait-and-see strategy, often resulting in suboptimal outcomes.

In contrast, Glue adopts a holistic tech stack approach, meticulously planning and integrating each layer of the ecosystem while maintaining fully decentralised deployments. Glue will deploy a Layer 1, multiple Layer 2s as well as the cornerstone dApps needed for a flourishing DeFi ecosystem. This strategy ensures cohesive and user-friendly results, moving beyond the hope and prayer method (combined with bribes for incentives) that other ecosystems rely on. Contrary to the prevalent misconception that the underlying technology stack is the entirety of a Layer 1 blockchain's product, Glue postulates that it is merely one facet of a comprehensive strategy. Glue's focus extends beyond the technological and the technical to encompass a broader vision.

Subsequent white papers will delve into the intricacies of the dApp stack and the service layer, elucidating how these components coalesce to form a holistic and user-centric blockchain ecosystem. This approach not only simplifies blockchain interaction but also fortifies security, ensuring that the sophisticated potential of blockchain technology is accessible to all, without the labyrinthine complexities that have historically stymied broader adoption.



## Technology Selection

### Substrate

Selection of the Substrate<sup>1</sup> framework was driven by a set of stringent criteria aimed at ensuring the success and scalability of Glue. For clarity's sake, there is no connection between Glue and Polkadot<sup>2</sup>, and Glue is neither built on Polkadot nor reliant on its progress. The first and foremost criterion was the need for unprecedented scalability. To achieve unparalleled scalability, Glue employs use-case optimised Layer 2 (L2) solutions that are meticulously integrated with the Layer 1 (L1). Unlike the fragmented and myopic approach seen in other ecosystems, where L2s operate independently with conflicting and often adversarial interests, Glue's integrated strategy ensures that each L2 is tailored for specific applications such as finance, gaming, and asset transfers. This holistic approach allows for optimal performance and scalability, as each L2 can be customised to handle its unique workload without compromising the overall system integrity. The use-case optimisation of L2s extends to critical aspects of the blockchain, including consensus mechanisms, transaction processing, block times, fees, and data storage.

Glue's approach is an improved version of sharding. Each shard, in the case of Glue, is a use-case optimised L2 that maintains interactivity and integration with other shards. This ensures composability is preserved, allowing for seamless functionality across the entire system. This granularity ensures that the Glue blockchain can scale effectively, handling a prodigious volume of transactions with unparalleled efficiency. The Substrate framework's modular design and highly optimised runtime environment are pivotal in achieving this scalability. Each component can be fine-tuned and adjusted to meet the specific demands and needs of diverse applications, ensuring that Glue remains robust and performant under varying conditions. Moreover, the seamless integration of L1 and L2 within Glue obviates the inefficiencies and redundancies that plague other blockchain ecosystems. In the fragmented model exemplified by Polkadot, L2 solutions are essentially auctioned off to third-party entities with misaligned objectives and incentives, resulting in a cacophony of competing interests that undermine cohesive development and scalability. Glue's strategy, in stark contrast, leverages the Substrate framework to maintain a unified and strategically aligned development trajectory for the L1 as well as all the current and future L2s. This alignment ensures that the entire blockchain ecosystem, from L1 to L2, operates in concert towards common goals, thereby maximising scalability, performance, and user experience. The Substrate framework, with its modular architecture, facilitates this seamless integration and customisation. The ability to tailor various blockchain components, such as consensus algorithms, transaction throughput, and data management

protocols, ensures that Glue can adapt to the dynamic requirements of a rapidly evolving technological landscape. This adaptability is crucial for sustaining high performance and scalability as new applications and use cases emerge. Furthermore, the Substrate framework's highly optimised runtime environment significantly enhances Glue's scalability. By allowing for the precise adjustment of runtime parameters and the integration of specialised modules, Substrate ensures that the Glue blockchain can efficiently manage and process a vast number of transactions. This capability is essential for maintaining the integrity and performance of the blockchain under high-demand scenarios.

### Use-Case Optimised Model vs. Generic L2 or Monolithic Model or App Chain

The decision to adopt a use-case optimised model for Glue, as opposed to a generic L2, monolithic, or app chain model, is grounded in our commitment to delivering exceptional performance, scalability, and user experience. This strategic choice is informed by a critical analysis of the limitations inherent in generic, monolithic, and app chain blockchain models, which often fall short in addressing the nuanced requirements of diverse applications.

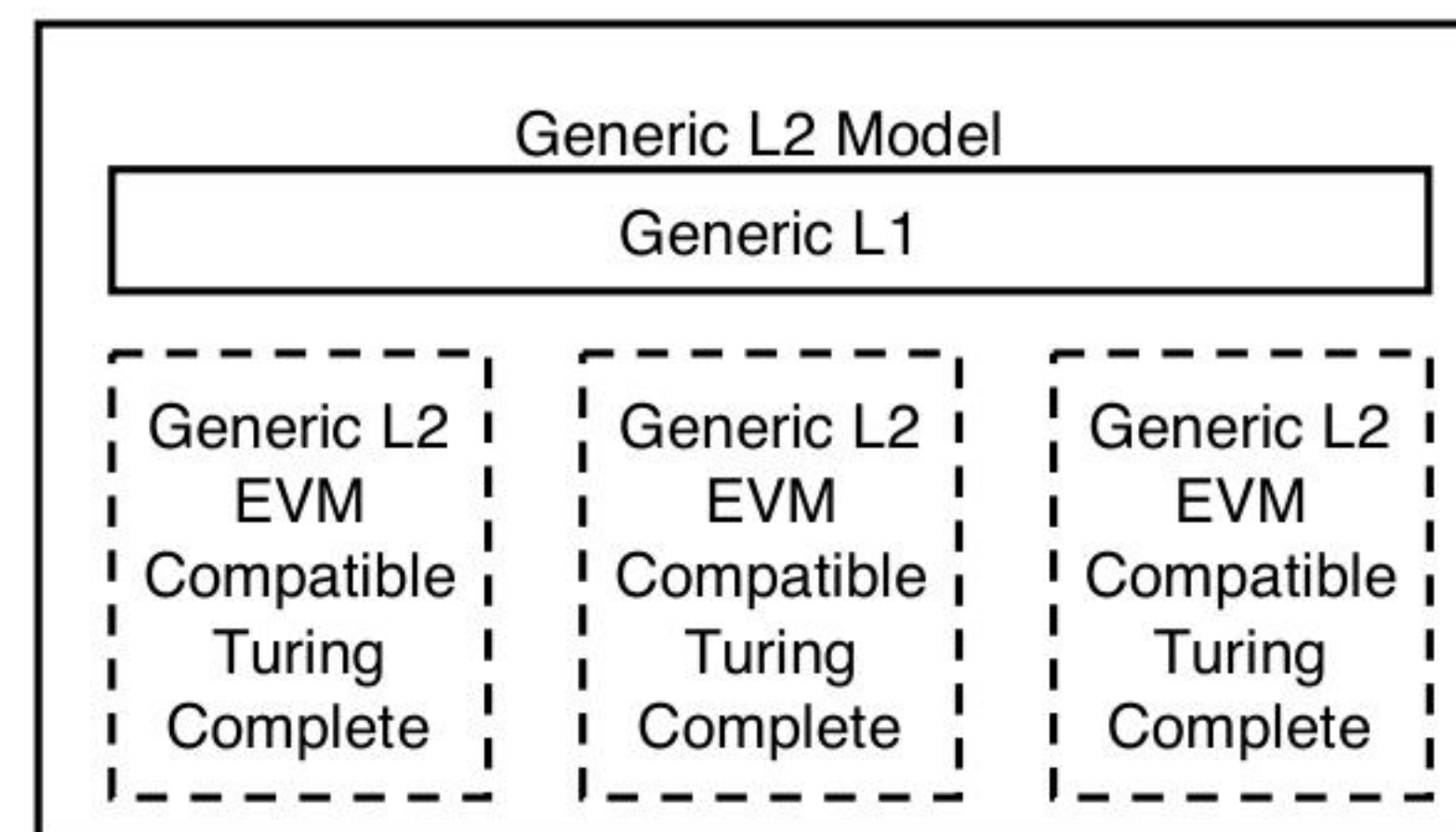


Figure 1: Generic L2 Model. A Layer 1 with multiple Layer 2s that all have roughly equal functionality such as EVM, Turing complete, etc, with no meaningful functional differences between L2s. Capable of running any dApp or smart contract. All dApps share the same underlying resources (e.g., computation, storage). All L2s must handle the full variety of transaction types and operations.

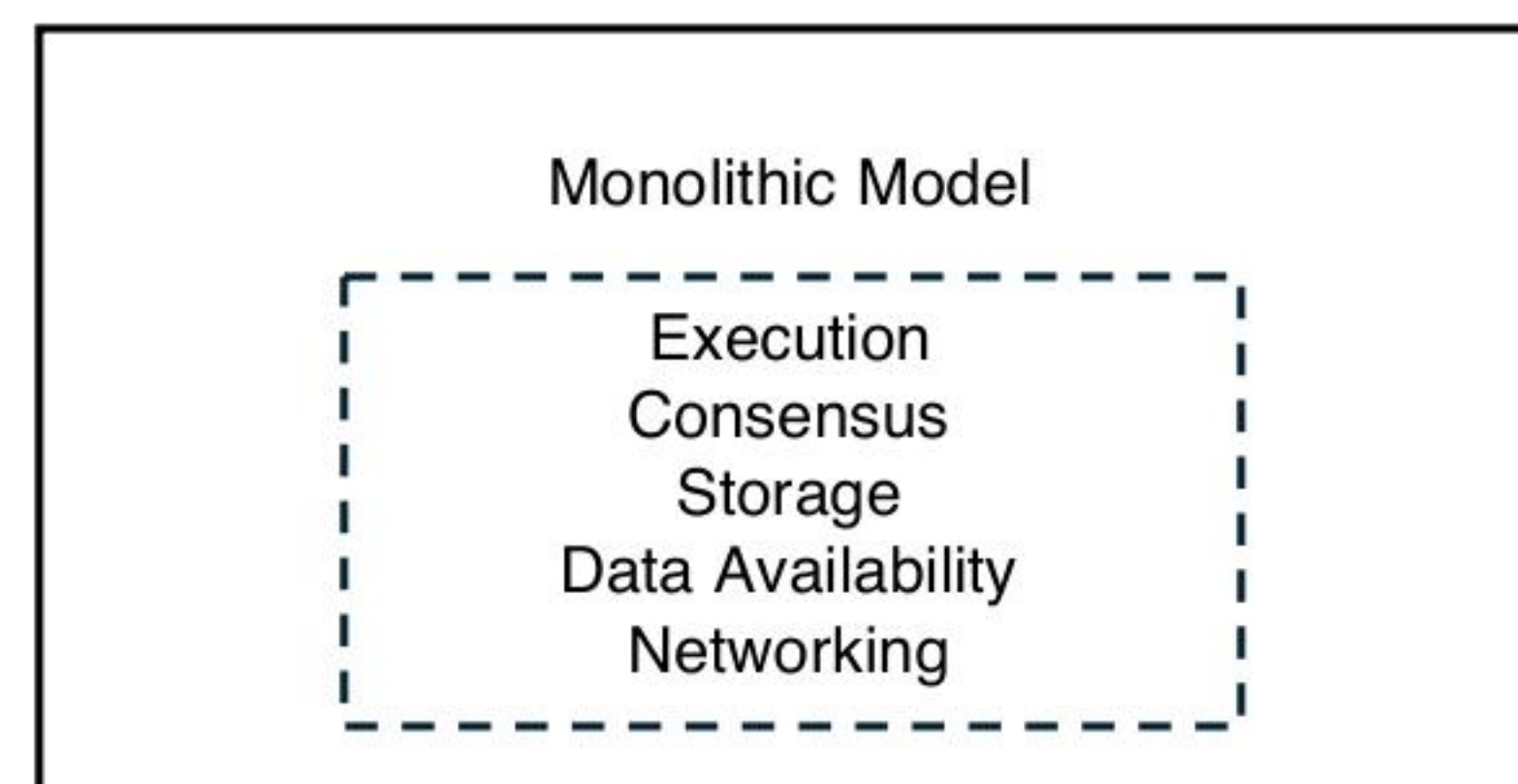


Figure 2: Monolithic Model. All functions (consensus, execution, data availability) are run by a single blockchain and are integrated making it challenging to scale. The architecture is straightforward but can become inefficient and hard to keep live as it scales. To handle the increased load, nodes require significant hardware upgrades, which can lead to centralisation as only those with high-end hardware can participate in validation. The monolithic design makes it difficult to introduce upgrades or changes, as every modification impacts the entire system, potentially leading to longer deployment cycles.

<sup>1</sup> <https://substrate.io/>

<sup>2</sup> <https://polkadot.network/>



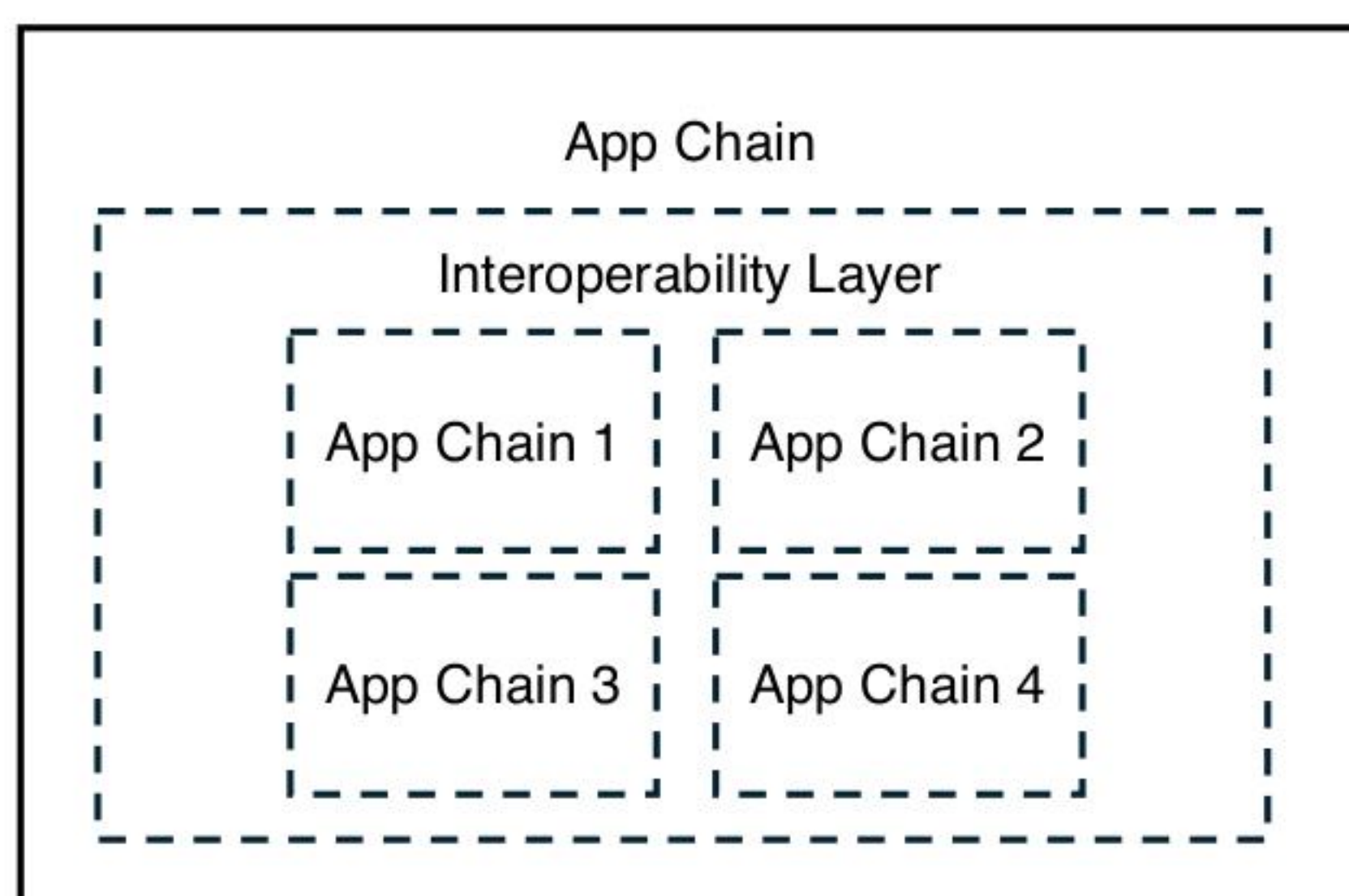


Figure 3: App Chain Model. An app chain model uses multiple specialised blockchains, each optimised for specific applications. Ensuring seamless interaction between various app chains and the relay chain can be complex and may require robust protocols to maintain consistency and security. Cross-chain communication can introduce vulnerabilities, as each app chain may have different security standards and mechanisms, potentially creating weak links. Each app chain requires its own maintenance and updates. Overall, an app chain architecture is not a cohesive and united ecosystem.

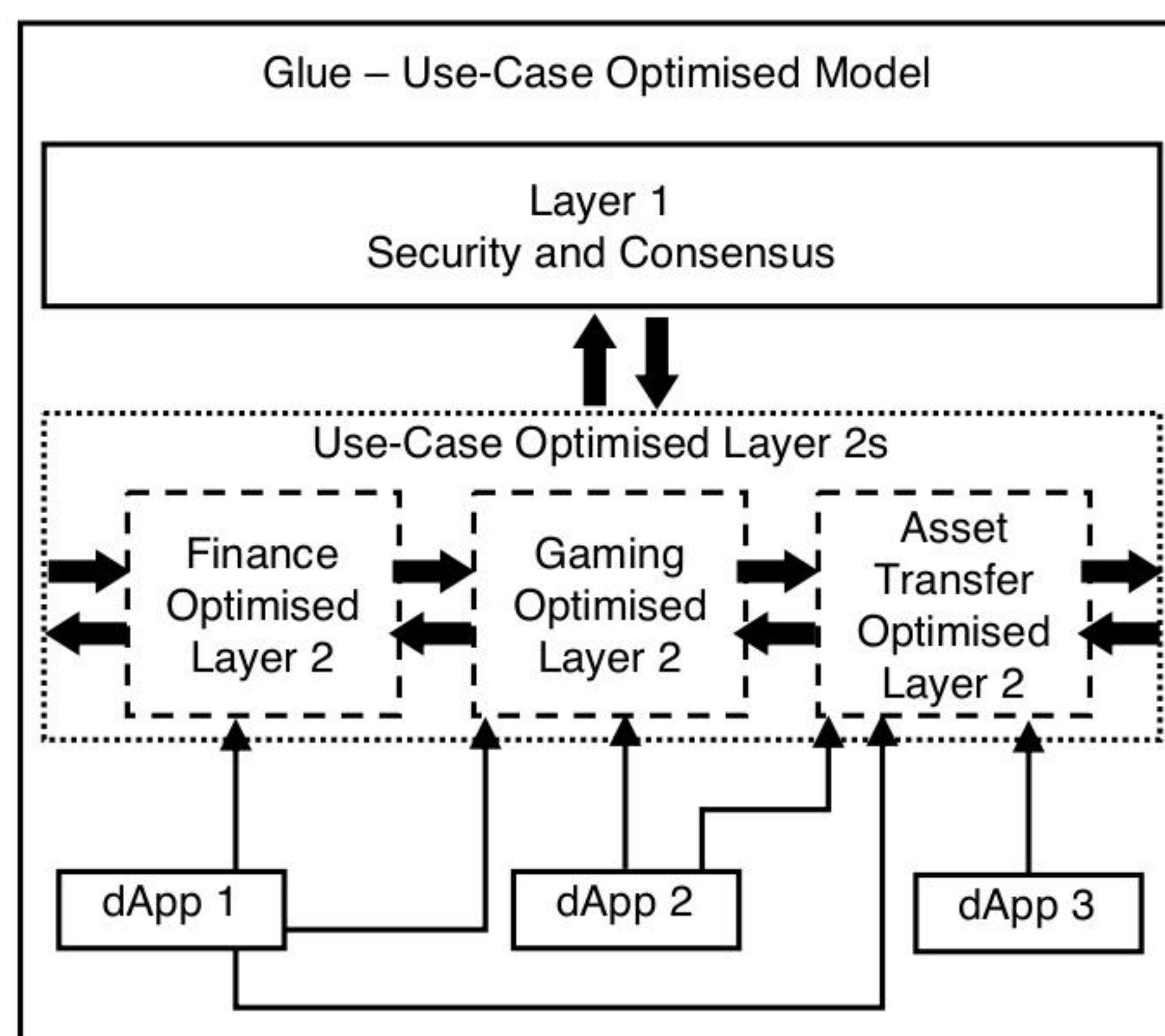


Figure 4: Illustrating Glue's integration of Substrate framework for optimal scalability: The use-case optimised approach combines a Layer 1 and multiple use-case optimised Layer 2 solutions, ensuring tailored performance for diverse applications such as finance, gaming, and asset transfers. This unified strategy maximises efficiency and scalability, contrasting with fragmented models seen in other ecosystems. One dApp might at the same time use multiple Layer 2s for different operations and functions.

### Limitations of Generic and Monolithic Models

Blockchains with generic L2s, such as Arbitrum<sup>3</sup> and Optimism<sup>4</sup>, aim to provide a one-size-fits-all solution. Both Arbitrum and Optimism are Turing complete and EVM compatible, meaning anything deployed on Arbitrum can also be deployed on Optimism or Ethereum<sup>5</sup>. There is no specialisation among them, as each L2 can handle any type of application. While this approach may offer a large degree of flexibility as

everything can do everything, it inherently lacks the specificity required to optimise performance for particular use cases. The generic model by definition results in suboptimal performance, as it is forced to balance a wide array of conflicting demands. Consequently, it struggles to deliver the high throughput, low latency, and specialised functionality that specific applications necessitate.

Monolithic models like Solana<sup>6</sup>, on the other hand, attempt to consolidate all functionalities within a single, unified framework. While this has advantages, it leads to significant drawbacks as well. Monolithic architectures are notoriously difficult to scale, as the entire system must be upgraded or modified to enhance any single component. This rigidity hampers the system's ability to evolve and adapt to new requirements. Furthermore, monolithic models are prone to inefficiencies and bottlenecks, as the centralised approach often leads to resource contention and suboptimal allocation. Worse, the monolithic model suffers from all the same drawbacks as the generic models in addition to its own challenges.

### The App Chain Model: A Misguided Approach

The app chain model, while initially promising, has revealed itself to be an impractical and inefficient approach. By creating independent chains for each application, this model inevitably leads to the proliferation of ghost chains; blockchains that operate below capacity or become entirely inactive. These underutilised chains waste valuable resources, including computational power and network bandwidth, without contributing meaningful activity or value to the ecosystem.

Moreover, the app chain model, such as Cosmos<sup>7</sup>, fosters fragmentation and isolation rather than integration and cooperation. Each chain operates independently, often with little to no interaction with others. This isolation stifles composability, as the fragmented environment discourages the sharing of solutions and best practices. Consequently, the app chain model fails to achieve the cohesive, synergistic ecosystem that is essential for sustained growth and development in the blockchain space. Because of this, both the underlying chains as well as the App chains built on top of them fail to ever gain critical mass as they are too loosely connected to get meaningful network effects.

### Advantages of the Use-Case Optimised Model

In stark contrast, the use-case optimised model embraced by Glue offers a superior approach by tailoring Layer 2 solutions to the specific needs of different application types. This is distinctly different from the app chain model. App chains optimise (and often limit) each chain for a single App. Glue optimises L2s for overarching use cases that cover a multitude of apps that have similar needs. This specialisation allows each L2 to be finely tuned for optimal performance for a specific use case,

<sup>3</sup> <https://arbitrum.io/>

<sup>4</sup> <https://www.optimism.io/>

<sup>5</sup> <https://ethereum.org/en/foundation/>

<sup>6</sup> <https://solana.com/>

<sup>7</sup> <https://cosmos.network/>



addressing the unique demands of applications such as finance, gaming, and asset transfers. By customising consensus mechanisms, transaction processing, minimum fees, block times and data storage for each use case, Glue ensures that each chain and the applications built on it operate at peak efficiency. The tailored approach of the use-case optimised model provides several key advantages:

**Enhanced Performance:** Each L2 solution is designed to meet the specific performance requirements of its intended application. For instance, a financial application requires fast finality and high uptime, while a gaming L2 needs minimal transaction fees. Layer 2s can easily be parameterised and optimised to meet those criteria, but only if they are not generic. The specialisation allows each dApp to select the optimal Layer 2 for the best user experience.

**Scalability:** The modular design of use-case optimised L2s allows for independent scaling of each layer. This means that changes to one L2 do not necessitate changes to others, thereby avoiding the systemic bottlenecks and inefficiencies associated with upgrading monolithic models. As a result, Glue can efficiently manage a high volume of transactions across diverse applications without compromising performance. Total scalability,  $S_{Total}$ , can be illustrated as the following:

Scalability of each L2,  $S_{L2_i}$ , can be expressed as a function of its throughput and resources.

$$S_{L2_i} = f(T_{L2_i}, R_{L2_i})$$

*Formula 1: Each layer 2 defined as a function of its throughput,  $T_{L2_i}$ , and available resources,  $R_{L2_i}$ .*

The total scalability of the system is the sum of the scalability of all the available use-case optimised L2s as the L1 does not host dApps.

$$S_{Total} = S_{L2_1} + S_{L2_2} + \dots + S_{L2_n}$$

Which in turn is equal to:

$$S_{Total} = \sum_{i=1}^n S_{L2_i}$$

*Formula 2: The total scalability,  $S_{Total}$ , of the system is the sum of the scalability of all components of the system.*

By summing the contributions from all  $n$  L2 solutions, it is clearly demonstrated how the overall system's scalability benefits from the modular and independent nature of each use-case optimised L2 layer, ensuring efficient and tailored performance across diverse applications.

### Rapid Iteration

One of the pivotal reasons behind selecting the Substrate framework and implementing a use-case optimised model is our recognition of a critical challenge in the blockchain space: the difficulty of

iterating on monolithic blockchains. Traditional monolithic architectures, such as Ethereum, face significant hurdles in implementing new technologies and features due to the extreme risks to the existing ecosystem from every upgrade. These blockchains require extensive quality assurance cycles and consensus among a wide array of stakeholders to implement new technology, leading to protracted development timelines and delayed deployment of advancements. The inherent complexity of upgrading a monolithic blockchain means that any change can have far-reaching implications, necessitating rigorous testing and broad agreement among participants, which significantly slows down the innovation process. Glue's implementation model, however, is designed to overcome these obstacles.

Substrate's superior runtime upgrade functionality allows for upgrades of both the L1 and L2s without the extensive delays of consensus building and cajoling validators seen in Ethereum. The runtime upgradability of Substrate, facilitated by WebAssembly<sup>8,9</sup> (Wasm), allows for forkless protocol upgrades, bug fixes, and feature enhancements through token holder voting, execution of which is programmatically guaranteed. This capability ensures that changes can be implemented without requiring a fork, which maintains network continuity and reduces the risk associated with upgrades. The iterative development process allows for continuous improvement, where feedback from users and developers can be rapidly incorporated into subsequent updates, fostering a more responsive and user-centric ecosystem.

### Flexible and Agile Development

Glue's use-case optimised model allows for the launch of new L2s without risking disruption to existing decentralised applications. Because Layer 1 provides the underlying security, Glue can introduce significant technological advancements through new L2s tailored for specific purposes, such as zero-knowledge (ZK) L2s, Solana Virtual Machine L2s, or other specialised environments, without impacting the stability or performance of current dApps. This approach provides unparalleled flexibility and agility, enabling rapid innovation and continuous improvement.

For instance, if a new ZK L2 were to be developed, it could be deployed as a new L2 without affecting the ongoing operations of existing financial or gaming applications running on existing L2s and due to Glue's structure, without fracturing liquidity as the ZK L2 would be natively integrated with the Finance L2.

This segmentation significantly reduces the need for exhaustive quality assurance cycles that monolithic blockchains must endure. By isolating changes to specific L2s, there is room to experiment with and deploy cutting-edge technologies while maintaining the integrity and performance of the broader ecosystem. The ability to test and deploy new features in a controlled environment ensures that potential issues are identified and resolved more

<sup>8</sup> <https://wiki.polkadot.network/docs/learn-wasm>

<sup>9</sup> <https://docs.substrate.io/build/build-process/>



swiftly, thereby accelerating the overall pace of innovation.

Furthermore, the ability to deploy rapid and targeted updates ensures that Glue remains at the forefront of technological advancements. As the blockchain landscape evolves, Glue can quickly adapt and integrate cutting-edge developments, maintaining its competitive edge. This agility not only enhances our capacity to meet the dynamic needs of users and developers but also positions Glue as a leader in innovation within the blockchain industry.

### Layer1 Driven Layer 2 Development

This use-case optimised L2 approach can only succeed if the roadmap is effectively dictated by the Layer 1 community, rather than by a haphazard collection of independent L2s. A unified and strategic vision ensures that all L2 solutions are developed cohesively, aligning with the overarching goals and standards of the entire ecosystem. This avoids the pitfalls of disjointed and competing L2 interests, which can lead to fragmentation, inefficiencies, and resource wastage. By having a unified roadmap, Glue ensures that all L2s work synergistically towards common objectives, fostering innovation, collaboration, and seamless integration. This strategic coherence is essential for maintaining the integrity, scalability, and performance of the blockchain ecosystem, ensuring that every component works in harmony to deliver a superior user experience.

**Flexibility and Adaptability:** The use-case optimised model provides the flexibility to integrate new technologies and features tailored to specific applications. This adaptability is crucial in a rapidly evolving technological landscape, ensuring that Glue remains at the forefront of blockchain innovation. To further illustrate:

The system at an initial state of  $t_0$

$$FA_{Total} = FA_{L1} + \sum_{i=1}^n FA_{L2_i}(t_0)$$

*Formula 3: The total flexibility and adaptability of the system,  $FA_{Total}$ , at the initial time of  $t_0$ . The system total also includes the flexibility and adaptability of the Layer 1,  $FA_{L1}$ .*

To reflect ease of introducing a new use-case optimised L2 and the relative difficulty of upgrading existing L2s, the variable  $D$  is introduced. Where  $D=0$  means no difficulty and  $D=1$  means maximum difficulty.

$$D_{New} \approx 0$$

*Formula 4: Ease of introducing new L2. The difficulty of introducing new L2s is near zero.*

$$D_{Upgrade} > 0$$

*Formula 5: Difficulty of upgrading existing L2s. This is greater than zero but still feasible.*

With an addition of a new use-case optimised L2 to the system in the future at  $t_1$ :

Given that  $D_{New} \approx 0$

$$FA_{Total} = FA_{L1} + \sum_{i=1}^n FA_{L2_i}(t_0) + FA_{L2_{New}}(t_1)$$

*Formula 6: The addition of a new use-case optimised L2,  $FA_{L2_{New}}$ . Introducing a new use-case optimised L2 has near-zero difficulty,  $D_{New} \approx 0$ , so its contribution to the total flexibility and adaptability is fully added.*

With an upgrade to a specific L2 that already exists in the system at  $t_2$ :

Given that  $D_{Upgrade} > 0$

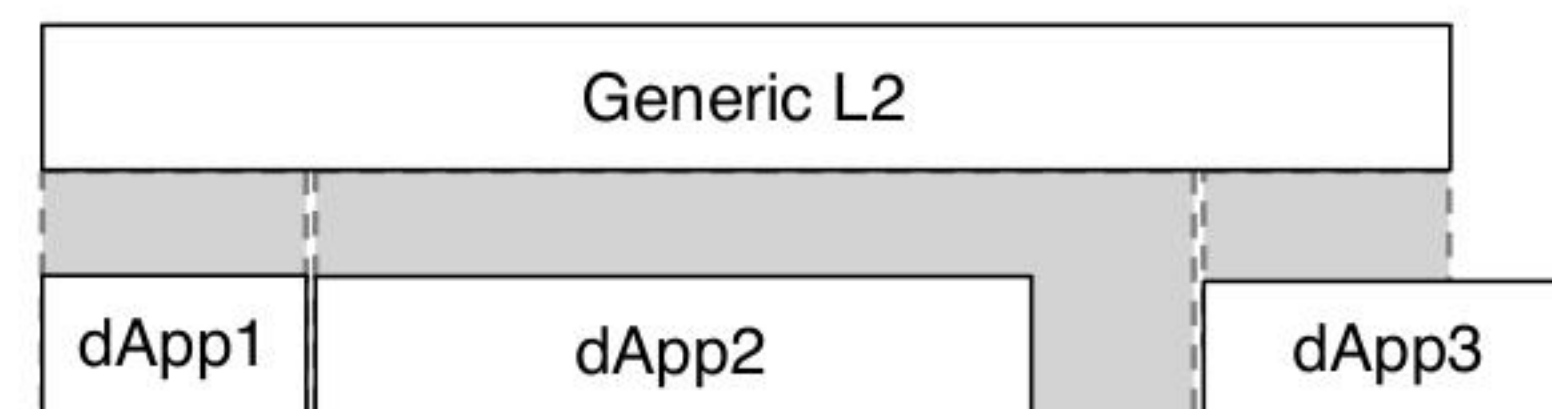
$$FA_{Total} = FA_{L1} + \sum_{i=1}^n FA_{L2_i}(t_0) + FA_{L2_{New}}(t_1) + (1 - D_{Upgrade})\Delta FA_{L2_{Update}}(t_2)$$

*Formula 7: The upgrade to a use-case optimised L2,  $\Delta FA_{L2_{Update}}$ . Upgrading an existing L2 is more challenging as  $D_{Upgrade} > 0$ , so its contribution is scaled by  $(1 - D_{Upgrade})$  indicating a proportional effect based on the difficulty.*

By summing these core components together, the total adaptability and flexibility of the system is captured, considering the contributions from existing L2 solutions, new L2 solutions, and upgrades to existing L2s and their associated difficulty. This integrated formula provides a representation of the system's capacity to respond to changes and have a high level of flexibility and adaptability.

### Strategic Integration

The adoption of a use-case optimised model represents a deliberate and informed choice to transcend the traditionally existing limitations. Substrate enables the precise customisation of blockchain components, allowing Glue to implement specialised modules that cater to the unique demands of each L2. This integration ensures that the entire ecosystem operates harmoniously. By avoiding the pitfalls of a one-size-fits-all approach, the use-case optimised model ensures that resources are allocated efficiently. There is no need to have a dApp that doesn't need extremely high censorship resistance to live on an L2 that has 100,000 validators, as it slows it down and makes it tremendously more expensive. The same goes for doing an asset transfer on a Turing complete EVM chain, which causes massive overheads instead of just using an asset transfer L2 that does not have smart contract capabilities at all.



*Figure 5: Example of censorship resistance on a generic one-size-fits-all approach. In this example, dApp 1 is well optimised for this generic L2. However, this generic L2 has higher censorship resistance than the dApp2 requires, whilst not having enough for dApp3. This inconsistency results in suboptimal user and developer experience.*



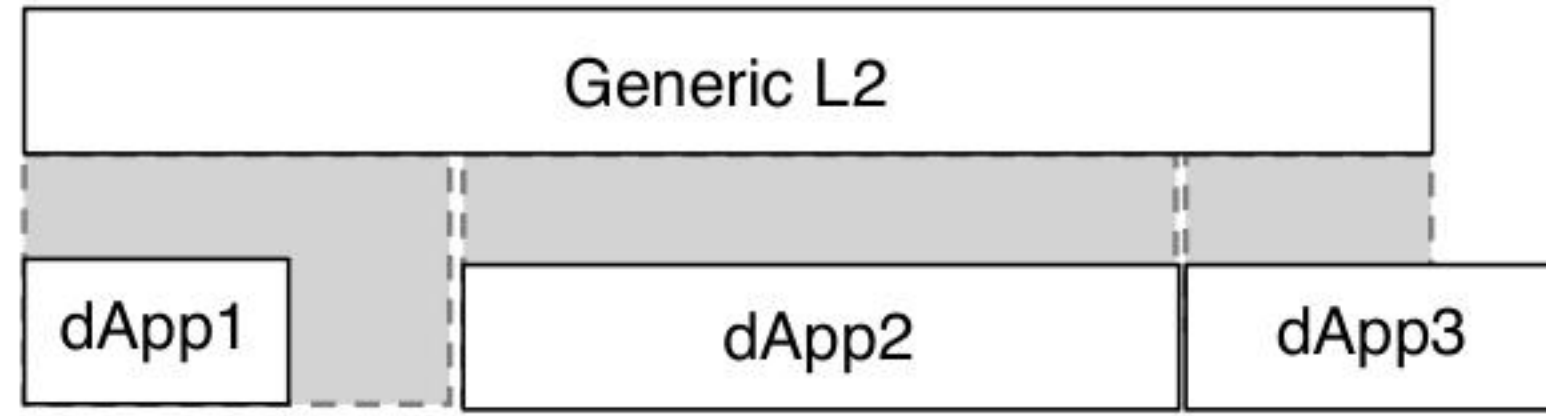


Figure 6: Example of block finality on a generic one-size-fits-all approach. In this example, the block finality is optimised for the requirements of dApp2, whilst being too fast for dApp1 and too slow for dApp3's use cases.

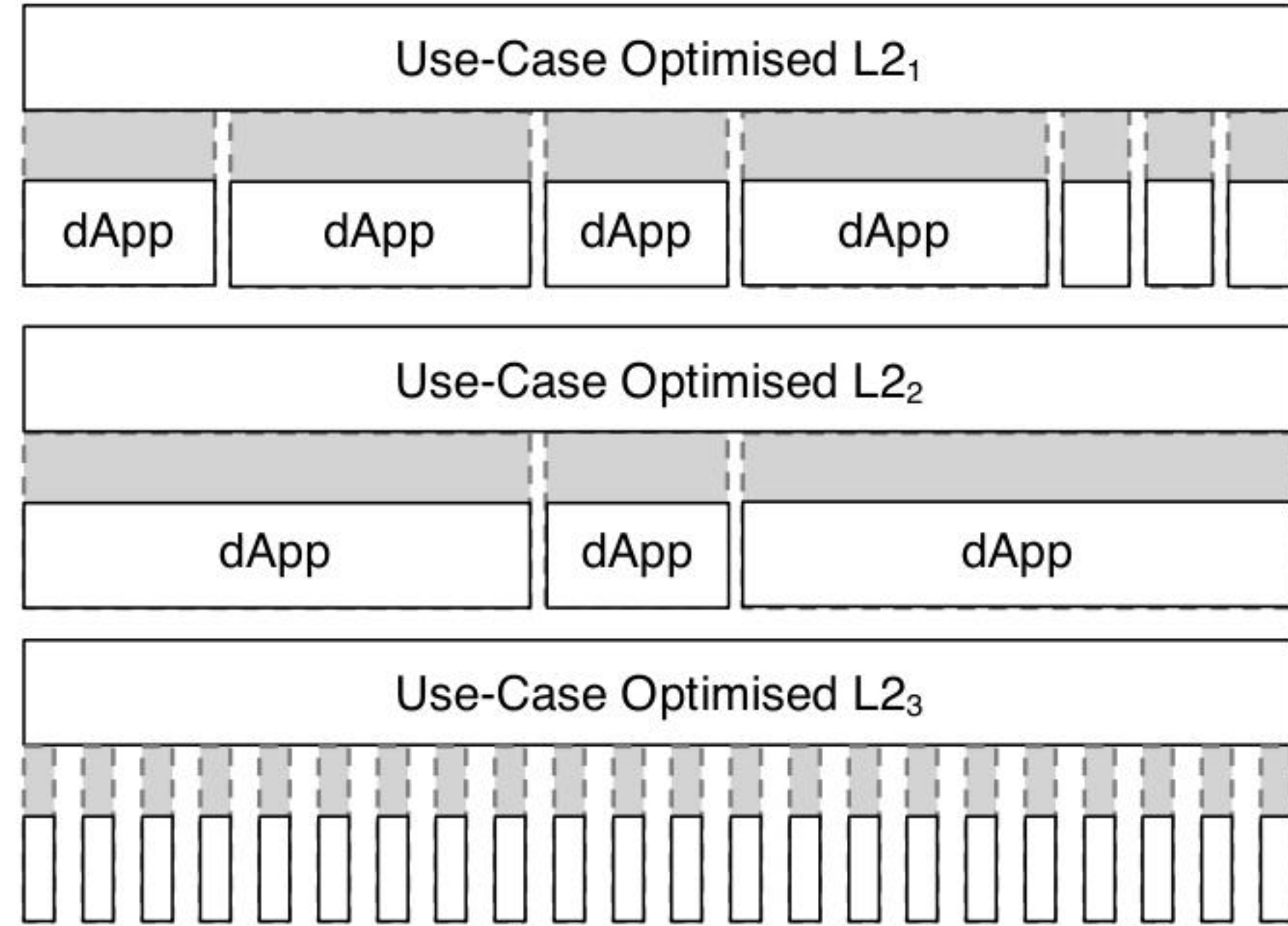


Figure 7: Efficiency in the Use-Case Optimised Model: Each Layer 2 solution is provisioned with tailored optimisations to minimise waste and maximise performance, ensuring optimal operation for diverse applications. In this example, a dApp that requires the highest possible censorship resistance can use use-case optimised L2<sub>2</sub>, whilst a dApp that requires fast transactions and block finality, such as peer-to-peer payments can use the use-case optimised L2<sub>3</sub>. Since there is seamless communication between all the use-case optimised L2s, a dApp can use multiple L2s in conjunction for maximum optimisation and efficiency.

In cases where a use-case optimised L2 becomes extremely popular and experiences high demand, a new and more optimised L2 can be developed and released to better meet the growing demand.

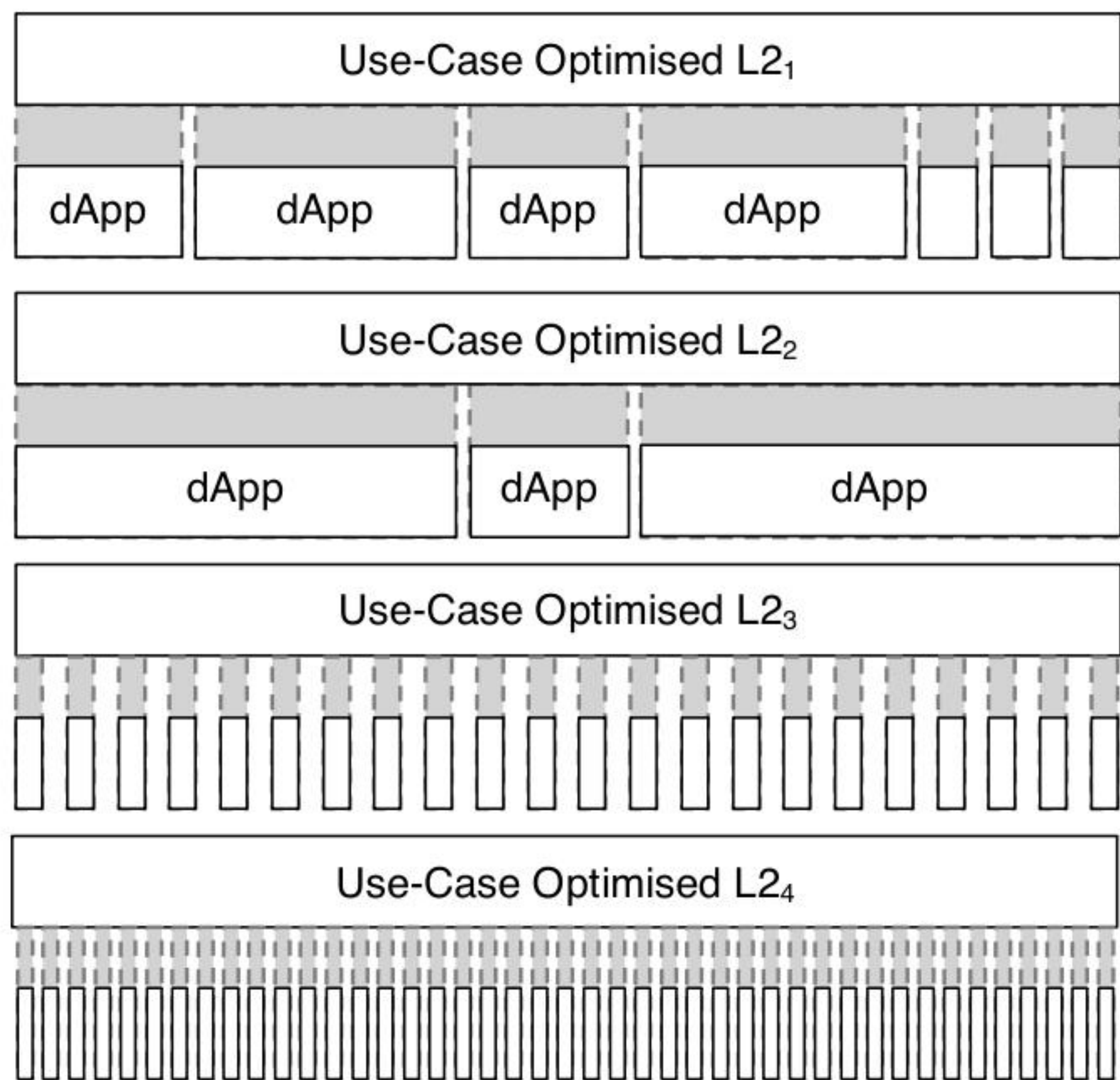


Figure 8: In this example, if the use-case optimised L2<sub>3</sub> sees further demand, a new use-case optimised L2, L2<sub>4</sub>, can be developed and released with no interruptions to any of the other L2s. This is an example of Glue's development flexibility and agility.

## Use-Case Optimised L2 Model: An Advanced Form of Sharding

The use-case optimised L2 model can be seen as a more sophisticated and advanced version of sharding. Traditional sharding divides the blockchain into smaller, manageable pieces or "shards," each capable of processing transactions independently to improve scalability and throughput. However, the use-case optimised L2 model takes this concept further by not just splitting the blockchain for efficiency but by tailoring each "shard" or Layer 2 to specific use case needs. This concept can be conceptualised as:

$$Total\ Throughput = \sum_{i=1}^n T_{Shard_i}$$

Formula 8: Traditional Sharding. Where  $T_{Shard_i}$  is the throughput of the  $i$ -th shard, and  $n$  is the number of shards.

$$Total\ Throughput = \sum_{i=1}^n T_{L2} \times E_{L2_i}$$

Formula 9: Use-Case Optimised L2 Model. Where  $T_{L2}$  is the throughput of the  $i$ -th L2 chain,  $E_{L2_i}$  is the efficiency gain from optimisation for a specific use-case and  $n$  is the number of L2 chains.

This ensures that each L2 is optimised for the particular demands of its use case, whether it be finance, gaming, or asset transfers. This advanced approach not only enhances performance and scalability but also allows for more specialised functionality, surpassing the generalised benefits of traditional sharding. By integrating these specialised L2 solutions seamlessly with Layer 1, and even more importantly with each other, Glue achieves a level of efficiency and customisation that traditional sharding models cannot match.

## Divorcing Security from Censorship Resistance

A defining feature of Substrate, and a critical reason for its selection in the Glue ecosystem, is its ability to divorce security from censorship resistance. In traditional blockchain models like Ethereum, these concepts are inextricably linked, often leading to suboptimal trade-offs across different applications. Substrate's architecture, however, allows Glue to maintain robust security guaranteed by the Layer 1 while offering varying levels of censorship resistance across Layer 2 solutions. This separation is not just a technical nuance but a strategic advantage that significantly enhances the flexibility and power of Glue's ecosystem.

## Security Guaranteed by L1

In the Substrate framework, security for all L2s is guaranteed by the L1. This means that no L2 can make independent security trade-offs that could compromise the integrity of the entire ecosystem. This L1 driven security model ensures that all transactions and operations across different L2s benefit from the same foundational security guarantees provided by L1 validators. This approach mitigates risks and maintains a consistent security standard across the entire blockchain network.



By keeping security at the L1, Glue ensures that all L2s operate within a secure environment, preventing the fragmentation of security protocols that could lead to vulnerabilities. This uniformity is crucial for maintaining trust and stability within the ecosystem, as users and developers can rely on the L1 to uphold the highest security standards regardless of the specific L2 they are interacting with.

### **Customisable Censorship Resistance**

While security is guaranteed by L1, censorship resistance can be tailored to the specific needs of each L2. This flexibility allows Glue to make more nuanced trade-offs within the blockchain trilemma (security, decentralisation, and scalability) that traditional monolithic blockchains like Ethereum cannot achieve. Different applications have different requirements for censorship resistance, and Substrate's architecture allows Glue to meet these diverse needs effectively.

For instance, a financial L2 requires a very high level of censorship resistance. In financial applications, the ability to prevent transactions from being arbitrarily blocked or censored is crucial. Users need to be assured that their financial activities cannot be unjustly hindered, as this could lead to significant economic consequences. Therefore, the financial L2 is designed with a robust censorship-resistant framework, ensuring that transactions can proceed without undue interference. Conversely, a gaming L2 might have significantly lower requirements for censorship resistance. In the context of gaming, being banned from a game or having in-game actions restricted is less critical than having one's bank account frozen. This is especially true if the assets within the game are issued and managed on a more censorship resistant financial L2 so that a user can still sell their assets even if they were censored. The gaming L2 can prioritise speed and efficiency over high censorship resistance. This differentiation allows the gaming L2 to deliver a more responsive and engaging user experience without compromising the overall security guaranteed by the L1.

### **Real-World Trade-Offs and Practicality**

As much as the cryptocurrency industry often advocates for absolute censorship resistance of everything, the reality is that different use cases have varying levels of requirements. The Substrate framework, and Glue's implementation of it, recognises this practical necessity and provides the tools to tailor censorship resistance according to specific application needs. By allowing different L2s to implement varying levels of censorship resistance, Glue can optimise the performance and user experience for each application type. For example:

**Finance L2:** High censorship resistance ensures secure and reliable financial transactions, protecting users' economic activities from interference.

**Gaming L2:** Lower censorship resistance prioritises speed and cheap fees, enhancing gameplay while relying on the financial L2 for secure asset management.

### **Section Summary**

Glue's choice of Substrate and the use-case optimised model is a deliberate strategy to ensure rapid iteration and agile development. This approach enables Glue to deliver new technologies and enhancements more effectively than traditional monolithic blockchains, avoiding the endless cycles of quality assurance that impede progress. By prioritising flexibility and modularity, Glue ensures that it can move faster and more decisively, solidifying its position as a pioneering force in the blockchain space. The iteration method implemented not only allows for continuous improvement and innovation but also ensures that Glue can adapt to and lead the evolution of the blockchain industry.



## Consensus Messaging (XCM)

### Enhancing Interoperability and User Experience

One of the critical innovations underpinning the Glue blockchain is the implementation of Cross-Consensus Messaging<sup>10,11,12</sup> (XCM), a pivotal feature developed by Parity Technologies<sup>13</sup> that ensures seamless interoperability between Layer 2 solutions.

In ecosystems where L2s cannot natively interact, users are often burdened with complex and cumbersome processes to move assets or perform actions across different chains. This fragmentation leads to inefficiencies and a poor user experience, as users must rely on third-party bridges or intermediaries to facilitate these interactions. The disjointed nature of these systems not only increases transaction costs and times, but also exposes users to additional risks and uncertainties.

Glue, through its implementation of XCM, ensures that all L2 solutions within its ecosystem can natively and seamlessly communicate with each other. This native interoperability is crucial for providing a cohesive and efficient user experience. By both allowing and requiring L2s to interact directly, unlike with Polkadot, Glue eliminates the need for external L2 to L2 bridges, reducing transaction times and costs while enhancing security. Users can move assets and execute transactions across different L2s without the friction and complexity inherent in other blockchain ecosystems.

### Near Instantaneous Bridging for Superior Performance

A significant drawback of existing blockchain ecosystems is the delay in bridging assets between L2s. This latency not only hampers user experience but also limits the practical utility of L2 solutions. In contrast, Glue's use of XCM enables near instantaneous bridging between L2s, not just for assets but also for messages, ensuring that users can transfer assets and data without delay. This capability is a game-changer, as it allows for near real-time interaction and integration across the entire Glue ecosystem, despite the necessary delay for block finality. Secure and fast bridging is achieved through XCM's robust protocol, which ensures secure and trustless communication between different chains. By embedding bridging functionality directly into the Glue framework, XCM guarantees that transactions are processed swiftly and securely. This capability enhances the fluidity of the ecosystem, allowing users to interact with multiple L2s seamlessly and efficiently.

### Cross-L2 Smart Contract Calls

One of the most groundbreaking features enabled by Glue's implementation of L2s and XCM is the ability to perform cross-L2 smart contract calls. In traditional ecosystems, smart contract interactions are typically confined to a single chain, limiting their functionality and potential. XCM extends the capabilities of smart contracts, allowing them to interact across different L2s within the Glue ecosystem. Cross-L2 smart

contract calls open a myriad of possibilities for dApp developers and users. For instance, a dApp operating on one L2 can seamlessly execute functions on a smart contract located on another L2.

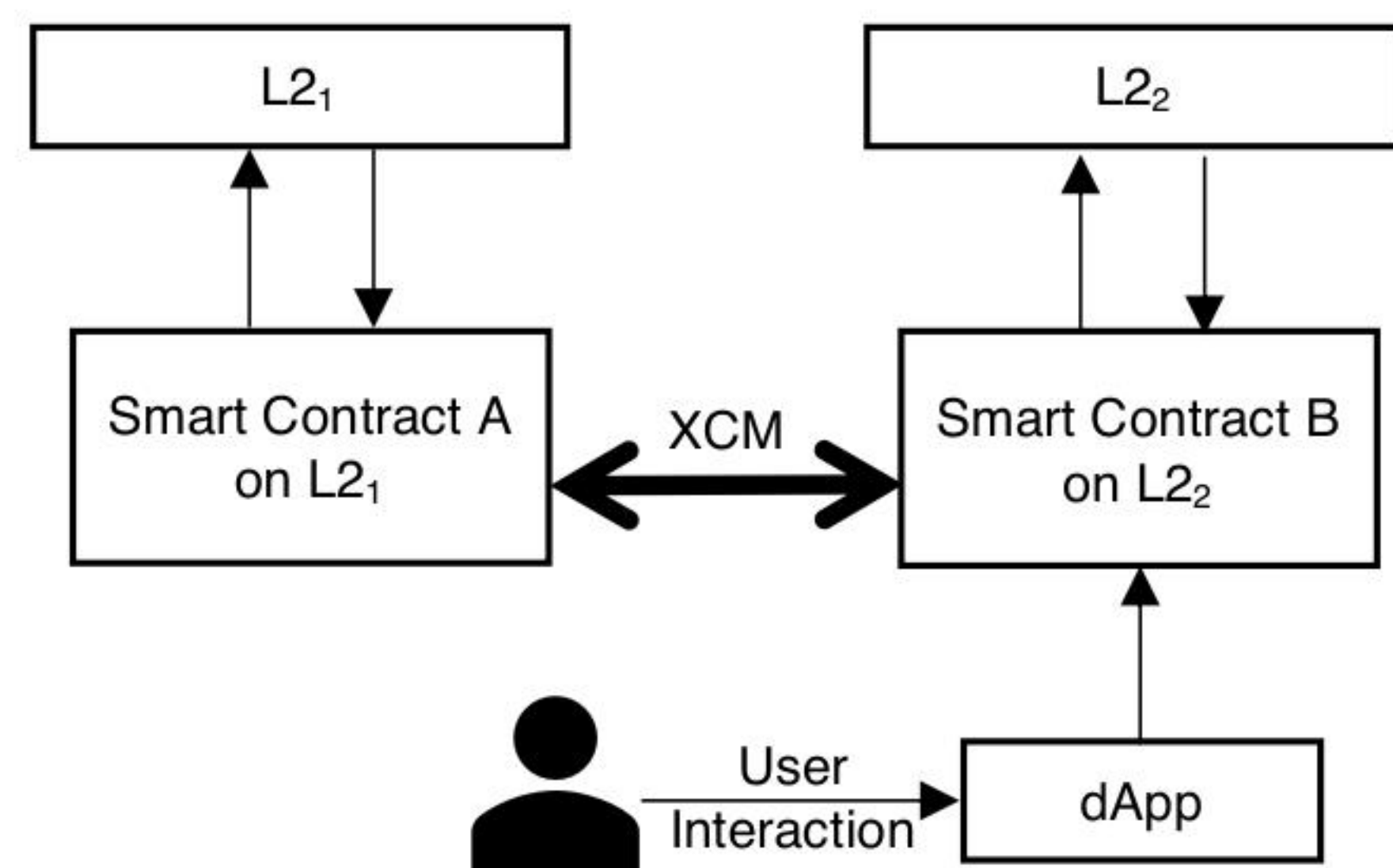


Figure 9: When a user interacts with a dApp, it triggers a function call on Smart Contract B on L2<sub>2</sub>. This smart contract, through the Glue platform and XCM, initiates a cross-L2 call to interact with Smart Contract A on L2<sub>1</sub> to perform specific actions or retrieve information. XCM ensures that the communication is seamless and secure.

This interactivity enables more complex and integrated applications, such as multi-chain DeFi protocols, cross-chain games, and decentralised exchanges that leverage liquidity from multiple L2s simultaneously. The ability to perform these cross-L2 operations enhances the versatility and utility of dApps, making Glue an ideal platform for innovative and sophisticated blockchain solutions.

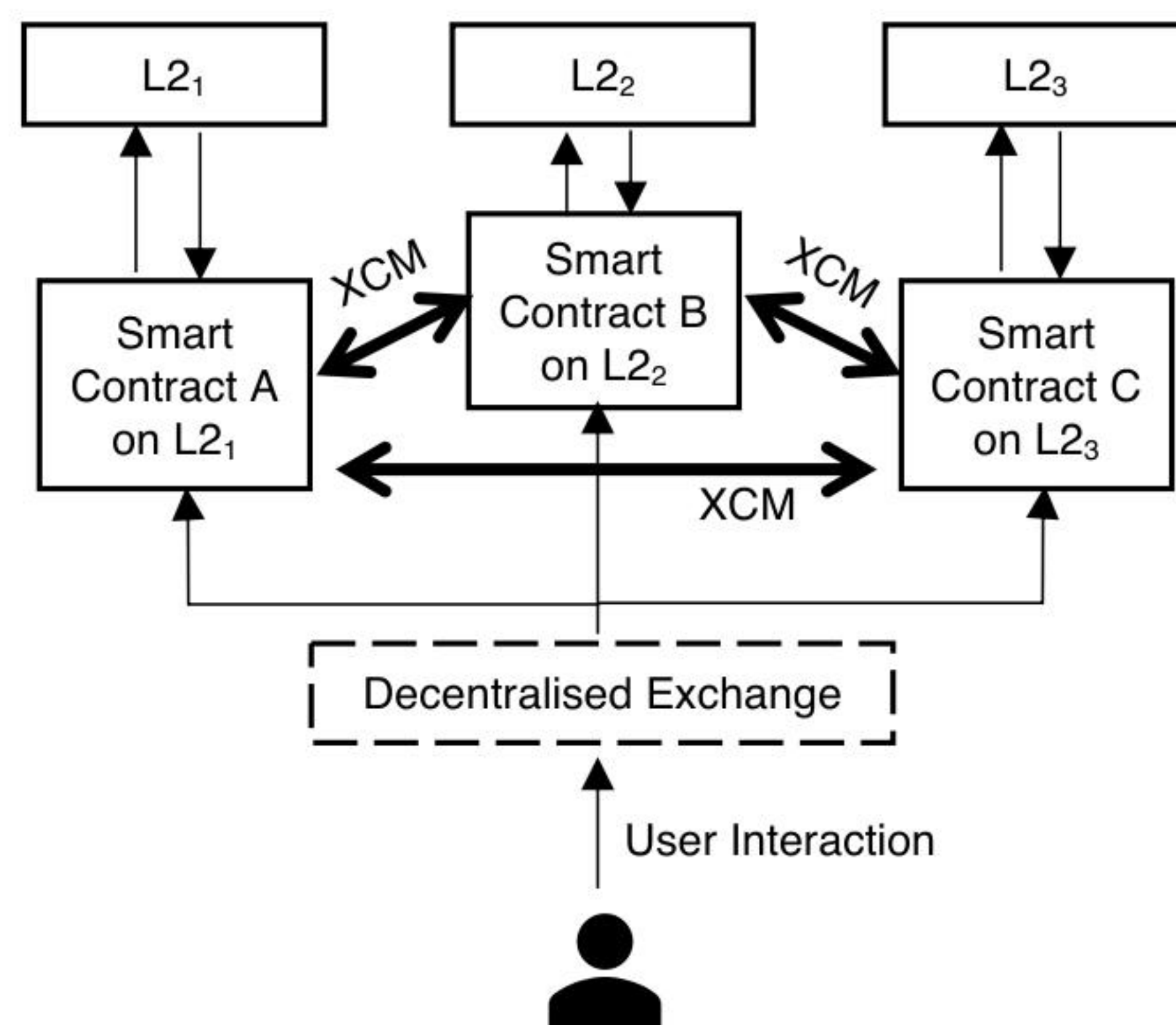


Figure 10: In this example illustrated, there are three use-case optimised Layer 2s. L2<sub>1</sub>, L2<sub>2</sub> and L2<sub>3</sub> each connected via Cross-L2 bridges. Glue facilitates cross-L2 smart contract calls enabled by XCM. Smart Contract A resides on L2<sub>1</sub>, Smart Contract B on L2<sub>2</sub>, and Smart Contract C on L2<sub>3</sub>. The decentralised exchange (DEX) aggregates liquidity from all three smart contracts. Users can trade across multiple L2s simultaneously, accessing a wide range of assets available on all three L2s. Trades are executed using liquidity pooled from all three L2s, enhancing the efficiency and liquidity depth of the DEX.

<sup>10</sup> <https://docs.substrate.io/learn/xcm-communication/>

<sup>11</sup> <https://wiki.polkadot.network/docs/learn-xcm>

<sup>12</sup> <https://paritytech.github.io/xcm-docs/>

<sup>13</sup> <https://www.parity.io/>



## Strategic Advantages of XCM in Glue's Ecosystem

Glue's implementation of Cross-Consensus Messaging represents a significant advancement in blockchain interoperability and user experience. The integration of XCM within Glue provides several strategic advantages:

**Trusted L2 Ecosystem:** Unlike ecosystems such as Polkadot where L2s are often independently managed and may have conflicting interests, Glue ensures that all L2s are trusted entities within a unified framework. This alignment is further reinforced by the use of a single, shared token model, incentivizing collaboration rather than competition among L2s.

**Enhanced User Experience:** By enabling seamless interoperability XCM significantly improves the user experience. Users can move assets and interact with dApps across different L2s effortlessly, without encountering the friction and delays common in other ecosystems.

**Increased Efficiency:** The ability to perform cross-L2 smart contract calls streamlines operations and enhances the efficiency of dApps. This capability allows for more sophisticated and integrated applications, driving innovation and utility within the Glue ecosystem.

**Improved Security:** XCM's trustless communication protocol ensures that transactions are secure and reliable. By limiting the need for third-party bridges to a minimum, Glue reduces potential vulnerabilities and enhances the overall security of the ecosystem.

**Scalability and Flexibility:** The modular nature of Substrate and the use of XCM allow Glue to scale effectively while maintaining flexibility. New L2s can be introduced and integrated seamlessly, ensuring that the ecosystem can evolve and adapt to emerging needs and technologies.

**Developer Empowerment:** XCM empowers developers by providing them with the tools and capabilities to build advanced multi-chain applications. This flexibility attracts a broader range of developers and cultivates a vibrant and innovative development community.

### Use Case Example: Building a Multi-Layered dApp with XCM

To illustrate the transformative potential of Cross-Consensus Messaging (XCM) within the Glue ecosystem, consider the example of a complex multiplayer online game. This game leverages multiple L2s to optimise different aspects of its functionality, similar to how it is not efficient or good practice to deploy a piece of software on AWS using a single instance type (m4.xl<sup>14</sup> for example). Just as AWS users select instance types optimised for specific workloads to achieve scalability and efficiency, Glue's use-case optimised L2s provide tailored environments for different facets of a dApp.

### Gaming: A Multi-Layered Approach

Imagine a game that involves gameplay, asset issuance, and financial transactions. Each component of this game is hosted on a different L2,

utilising Glue's XCM to ensure seamless interaction, better user experience and superior performance.

#### 1. Game Logic on the Gaming L2

**Performance:** The game logic is hosted on the Gaming L2, which is optimised for throughput and low fees. This L2 is designed to handle high-frequency interactions of the gameplay, ensuring a smooth and responsive gaming experience without breaking the bank.

**Use Case Optimisation:** By isolating the game logic on a specialised L2, the game can take full advantage of performance optimisations tailored for gaming applications. This reduces the load on other L2s and allows the game to scale efficiently.

#### 2. Asset Issuance on the Asset Transfer L2

**Cost-Effectiveness and Decentralisation:** The game's assets, such as in-game currency, are issued on the Asset Transfer L2. This L2 is optimised for minting, burning, and transferring assets, offering a cost-effective and highly decentralised environment.

**Security:** By using a specialised L2 for asset transfers, the game ensures that asset issuance and transfers are secure, efficient, and inexpensive. This L2 is designed to handle high volumes of transactions without incurring significant costs, making it ideal for managing digital assets.

#### 3. Trading on the Finance L2

**Financial Operations:** The trading of in-game assets occurs on the Finance L2, which is optimised for DeFi applications. This L2 is fully EVM compatible and provides a high level of censorship resistance and transaction efficiency, ensuring secure and reliable trading.

**Economic Integration:** By leveraging the Finance L2, the game can integrate advanced financial functionalities, such as market orders, auctions, and liquidity pools, enhancing the economic complexity and engagement within the game.

### Seamless Integration with XCM

XCM facilitates the seamless interaction between these specialised L2s, ensuring that the game operates as a cohesive and efficient system.

As players engage in gameplay on the Gaming L2, they can earn or acquire in-game assets. These assets are issued and managed on the Asset Transfer L2, with XCM enabling instant and secure communication between the two L2s. For example, when a player wins a battle and earns a rare token, the Gaming L2 sends a message via XCM to the Asset Transfer L2 to mint the new token and assign it to the player's account.

Players can trade their in-game assets on the Finance L2. XCM allows the Asset Transfer L2 to communicate with the Finance L2, facilitating the seamless transfer of assets for trading purposes. When a player lists an item for sale, the Asset Transfer L2 sends a message via XCM to the Finance L2, where the item is listed on a decentralised marketplace. Once the transaction is complete, the Finance L2 notifies the Asset Transfer L2 to update the ownership records.

<sup>14</sup> <https://aws.amazon.com/ec2/instance-types/>



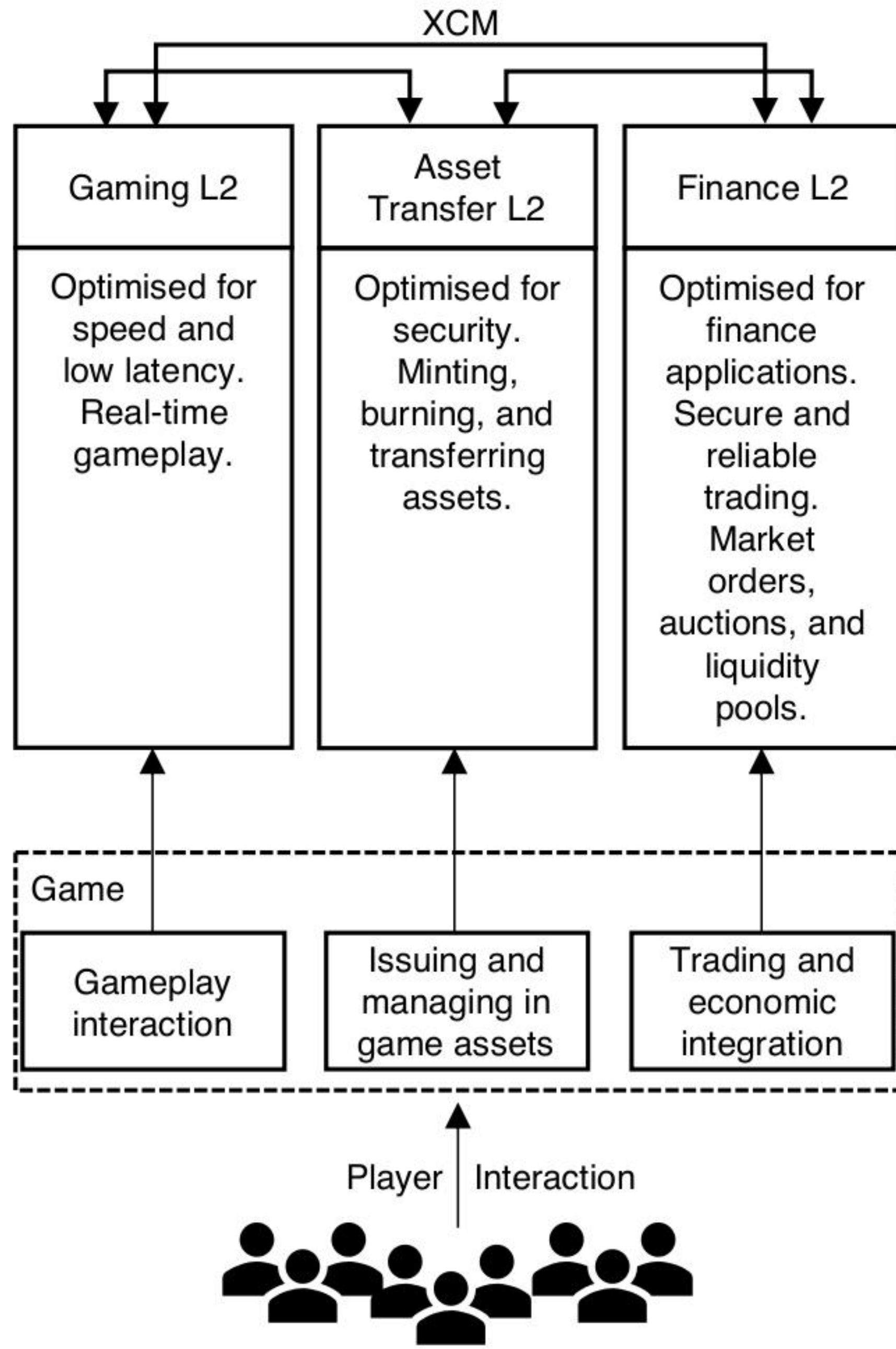


Figure 11: The Glue platform, using XCM, facilitates seamless interaction between L2s, enabling the Game dApp to provide a comprehensive and efficient gaming experience to users. Gaming L2, optimised for speed and low latency, ensuring smooth gameplay. Asset Transfer L2, optimised for minting, burning, and transferring assets in a cost-effective and decentralised manner. Finance L2, allows integration of advanced financial functionalities like market orders, auctions, and liquidity pools.

### Strategic Advantages of a Multi-Layered Approach

The multi-layered approach exemplified by this game showcases the strategic advantages of using Glue's use-case optimised L2s.

**Scalability and Performance:** By distributing different functions across specialised L2s, the game can scale efficiently without overburdening a single layer. Each L2 handles a specific aspect of the game, ensuring optimal performance and responsiveness.

**Cost Efficiency:** Using specialised L2s for different tasks reduces overall costs. The Asset Transfer L2, for example, handles high-volume transactions at a lower cost by not offering EVM compatibility, while the Finance L2 provides robust financial services with high levels of decentralisation.

**Improved User Experience:** The seamless integration facilitated by XCM ensures a smooth and engaging user experience. Players can interact with different aspects of the game without encountering delays or complexities, enhancing overall satisfaction and engagement.

**Flexibility and Innovation:** This approach allows for continuous innovation and flexibility. New features and functionalities can be introduced on specific L2s without disrupting the entire ecosystem, enabling the

game to evolve and adapt to changing user needs and technological advancements.

### Section Summary

Glue's use-case optimised L2 model, enhanced by XCM, provides a powerful framework for building sophisticated and efficient dApps. By leveraging specialised L2s for different functions and ensuring seamless interaction through XCM, Glue offers a superior solution for developing complex applications like the illustrated game. The effectiveness of XCM within Glue is amplified by the unified and collaborative nature of its L2s, all incentivized by the same token, ensuring a synergistic and high-performance blockchain environment. This approach not only optimises performance and scalability but also sets a new standard for innovation and user experience in the blockchain space.

### Unified Token Model

A fundamental aspect of Glue's design is the use of a single unified token as the fee token for both the Layer 1 and all Layer 2 solutions within the ecosystem. This unified token model is critical for nurturing collaboration, enhancing efficiency, and optimising the user and developer experience across the entire Glue blockchain.

### Incentivizing Collaboration within the Ecosystem

By using a single unified token for fees across both L1 and all L2s, Glue ensures that the entire ecosystem is aligned towards common goals. This alignment incentivizes collaboration rather than competition among different L2 solutions. For instance, if Glue were to launch a new Solana VM L2, the ecosystem would not be concerned about losing transaction volume from the existing finance EVM chain. The transaction volume that would be more efficient to be executed on the new L2 would merely shift within the ecosystem, utilising the same token, thereby maintaining overall token value and economic stability. This model allows Glue to prioritise the best user experience, the best developer experience, and overall efficiency instead of myopically protecting the turf of the incumbent L2. This model can be expressed as:

$$V_{Total} = V_{L1} + \sum_{i=1}^n V_{L2i}$$

Formula 10: Total volume,  $V_{Total}$ , is the sum of all volume across both L1,  $V_{L1}$ , and sum of the all use-case optimised L2s,  $\sum_{i=1}^n V_{L2i}$ . Addition of a new use-case optimised L2 complements the total volume across the system.

### Overcoming Traditional L2 Competition

Traditionally, L2s have been competitive rather than cooperative. In ecosystems like Polkadot, where different L2s operate with their own tokens, there is little incentive for L2s to bridge effectively or collaborate.



For example, Astar<sup>15</sup>, an L2 on Polkadot, has little interest in being well-bridged to other Polkadot L2s because of competitive dynamics. If users move their transaction volume to another L2, Astar's token value could decrease. This competition discourages interoperability and cooperation, ultimately stifling innovation, and user experience. This model can be expressed as:

$$V_{L1} = \sum V_{L1}$$

*Formula 11: Initial state is the independent layer 1, without any L2s. Therefore  $V_{L1}$  is the total volume of the Layer 1 itself.*

When a Layer two,  $V_{L2i}$ , is introduced, some transaction volume shifts from the L1 to L2i.

$$V_{L1} = \sum V_{L1} - \Delta V_{L2i}$$

*Formula 12: The volume of the Layer 1 is now the sum of the L1 volume minus the volume that moved to the L2.*

Introducing a competitor L2, which has its own token and volume,  $V_{L2w}$ , in turn will cause volume to shift from both the L1 and the L2i.

$$V_{L2w} = \Delta V_{L1} + \Delta V_{L2i}$$

*Formula 13: The volume of the new layer 2,  $V_{L2w}$ , is the sum volume taken away from the L1 and L2i.*

$$V_{New,L2i} = \sum V_{L2i} - \Delta V_{L2w}$$

*Formula 14:  $V_{New,L2i}$ , is the new volume of the L2i, since L2w has taken some volume away.*

$$V_{New,L1} = \sum V_{L1} - V_{New,L2i} - \Delta V_{L2w}$$

*Formula 15: The new volume left on the L1,  $V_{New,L1}$ .*

To cover all bases, coefficient  $k$  is introduced that represents the volume and value generated by new users that may have arrived into the ecosystem due to the new L2s that are introduced. However,  $k$  only contributes to the totality of the system and does not help alleviate the competitive environment. Meaning, the race to gain as many users as possible, followed by keeping as many users as possible due to the misalignment of the L2s and the L1, since each L2 is trying to maximise its own gains and profitability is inherent in the traditional system.

$$V_{Total} = \sum V_{L1} - V_{New,L2i} - \Delta V_{L2w} + k$$

*Formula 16: The new users introduced and the volume that they bring due to the new L2s, represented by coefficient  $k$ .*

This competitive environment has undermined the incredible potential of Substrate. The lack of cooperation between L2s has led to fragmented

ecosystems where the full benefits of an advanced blockchain technology cannot be realised. Glue's unified token model addresses this issue by aligning the economic interests of all L2s, promoting a cooperative environment where innovation and efficiency can thrive.

### Strategic Advantages of the Unified Token Model

**Enhanced User Experience:** With a single token model, users benefit from a seamless experience across all L2s. They do not need to manage multiple tokens or undergo complex conversion processes when interacting with different parts of the ecosystem. This simplicity enhances user satisfaction and engagement.

**Developer Empowerment:** Developers can build applications that leverage multiple L2s without worrying about token compatibility issues. This unified approach streamlines the development process and encourages the creation of more sophisticated and integrated dApps.

**Economic Stability:** A unified token model provides economic stability for the entire ecosystem. Transaction volume shifts within the ecosystem do not impact the overall token value, ensuring a stable and predictable economic environment that benefits all participants.

**Efficient Resource Allocation:** The unified token model allows Glue to allocate resources more efficiently. Instead of competing for transaction volume, L2s can focus on optimising their specific use cases, leading to a more effective and balanced distribution of workload across the ecosystem.

**Incentive Alignment:** All participants in the Glue ecosystem, from validators to developers to users, are incentivized to contribute to the ecosystem's success. The unified token model ensures that everyone benefits from improvements and innovations, promoting a collaborative and supportive community.

**Simplified Governance:** A single token model simplifies governance processes. Decisions that impact the entire ecosystem can be made more straightforwardly, as all stakeholders share a common economic interest. Traditionally, the independent layer 2s run their own governance which may or not be aligned with the L1 governance proposals.

### Section Summary

The unified token model is a cornerstone of Glue's strategy, driving collaboration, efficiency, and innovation. By aligning the interests of all L2s and eliminating the competitive barriers that have hindered other ecosystems, Glue creates a cohesive and high-performing blockchain environment. The seamless integration of L2s, facilitated by the shared token, ensures that advanced features and innovations can be deployed rapidly and effectively. This model ensures that Glue can deliver the best possible user and developer experiences, maintaining its position as a leader in the blockchain industry.

<sup>15</sup> <https://astar.network/>



## Building a Robust Ecosystem of Service Providers

### The Service Provider Gap in Crypto

One of the core challenges facing the cryptocurrency space is the glaring lack of service providers. In the traditional financial system, customer service is paramount. No one would switch to a bank with poor customer service. Yet, the blockchain world often expects users to navigate complex systems without adequate support, leading many to stick with centralised exchanges that offer a semblance of customer care. This lack of support infrastructure has created significant barriers to entry for mainstream users who are accustomed to the convenience and security provided by traditional financial institutions. This deficiency in service provision must be addressed to achieve real-world adoption of decentralised technologies.

### Benefits of Service Providers

**Enhanced User Experience:** Reliable customer service and support will make the blockchain ecosystem more accessible and user-friendly, encouraging broader adoption.

**Revenue Model for Service Providers:** By offering a straightforward revenue model, Glue incentivizes service providers to enter the ecosystem, ensuring a wide range of services are available.

**Increased Trust and Security:** Services like insurance can provide users with peace of mind, knowing their assets are protected against unforeseen events.

**Scalable Support Infrastructure:** An app-store-like setup for subscribing to services will make it easy for users to find and utilise the support they need, scaling the support infrastructure effectively.

**Competitive Advantage:** Glue's ecosystem of service providers will set it apart from other blockchain platforms, making it a preferred choice for users seeking a reliable and supportive environment.

### Glue's Strategic Approach to Service Providers

Glue's approach to this problem is straightforward and transformative. To create an ecosystem of service providers, a viable revenue model for these services must get established. Glue allows users to opt into third-party service providers on an address level, making it easy for them to access and pay for services they need. This model ensures that service providers can generate consistent revenue while offering valuable support to users.

### Subscription-Based Service Models

On platforms like Ethereum, acquiring subscriptions for services such as insurance is prohibitively difficult. Users often must interact with complex smart contracts, which need to be pre-funded, creating a cumbersome experience. Glue addresses this by integrating service provider billing directly into the L1 and L2 infrastructure. Users can effortlessly subscribe to services like insurance, which might cost \$0.05 per transaction, and the billing is handled seamlessly by the blockchain. Moreover, since the L2s handle all billing processes, service providers do not need to implement or manage any of these technical aspects

themselves. This eliminates the need for any technical skills to become a service provider, making it accessible and straightforward for anyone to offer subscription-based services on Glue.

Glue will offer multiple subscription models to cater to different needs and preferences. This flexible approach makes it trivial for users to opt into services, eliminating the need for complex setups and pre-funding requirements. Subscription models include:

**Monthly Fee:** Users pay a fixed monthly fee for continuous coverage or service.



Figure 12: Monthly subscription fee from user to service provider.

**Fee Per Transaction:** Users are billed a small fee for each transaction, providing flexibility and pay-as-you-go convenience.

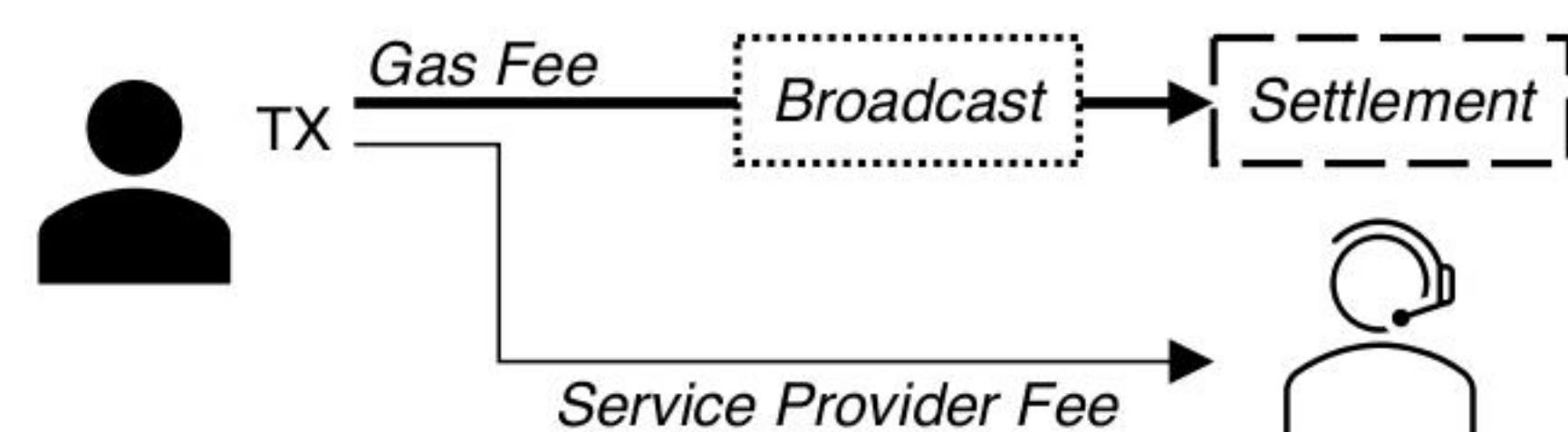


Figure 13: Each transaction has its own service provider fee that is charged independently to the gas fee of the transaction. This is a pay as you go service, hence there is no service provider fee if there are no transactions.

**Multiple of Gas Fees:** Service provider's fees can be tied to the gas costs of transactions, ensuring proportional costs relative to usage.

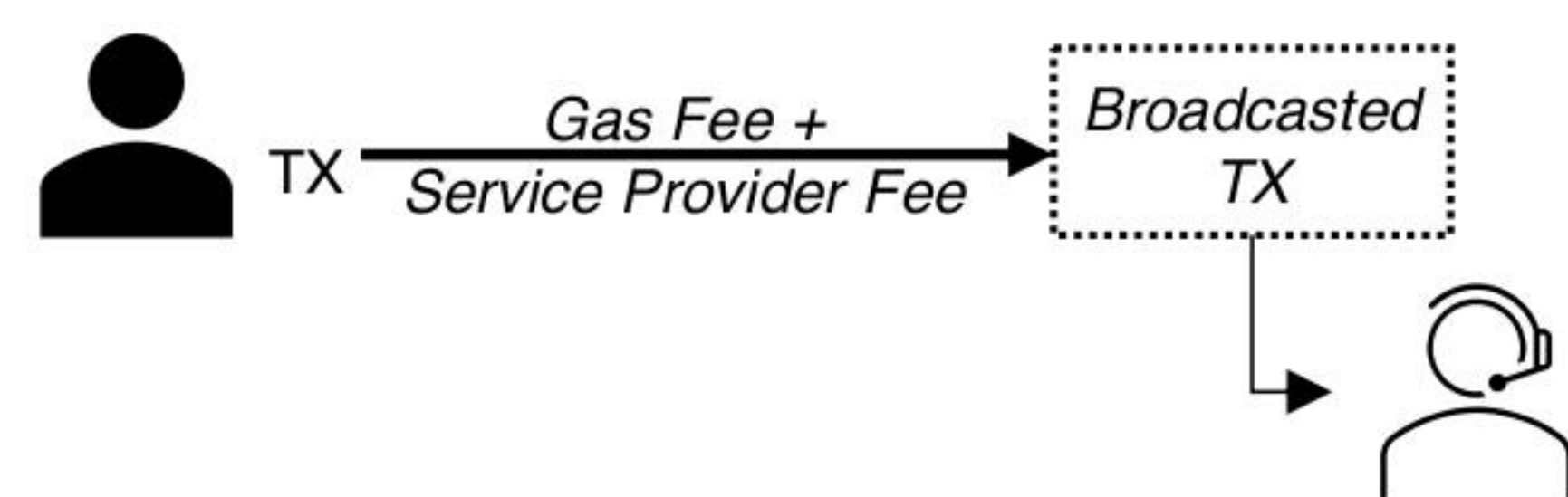


Figure 14: The gas fee will include the service provider's fee. Once the transaction is broadcasted and completed, the service provider will be paid their fee.

### Aiming for a Rich Ecosystem of Service Providers

The goal is to build a vast and diverse ecosystem of service providers, with a strong focus on customer service. In the Glue ecosystem, users should be able to pick up the phone and speak to a real person who can help them with their issues. We envision companies offering a "We help you with anything Glue" service, which users can subscribe to through an app-store-like setup. This easy subscription model will revolutionise the user experience in the crypto space. Service providers will be able to offer various support packages, ranging from basic technical support to comprehensive customer services. This approach will make Glue the only blockchain ecosystem with a robust and reliable service infrastructure, bridging the gap between decentralised technology and user-friendly service.



## Section Summary

Glue's strategic enhancement of integrating a robust service provider ecosystem addresses one of the most critical barriers to mainstream blockchain adoption. By providing an easy-to-use subscription model for essential services, Glue can ensure that users can access the support they need while creating a sustainable revenue model for service providers. This approach not only enhances the user experience but also establishes Glue as a leader in the blockchain space, offering unparalleled customer service and support. By building a comprehensive and reliable service infrastructure, Glue transforms the landscape of decentralised technology, making it more accessible, secure, and user-friendly.

## Strategic Enhancements to the Protocol

### Native Multi-Signature Integration

While Glue's implementation of the Substrate framework and its strategic use of Layer 1 and Layer 2 solutions already set Glue apart, we have also introduced critical modifications to the core protocol itself. These changes are designed to enhance security, usability, and overall user experience, addressing some of the fundamental challenges in the blockchain space. One of the most significant additions we have made is the integration of native multi-signature functionality.

The integration of native multi-signature (multi-sig) support within Glue's protocol represents a significant enhancement poised to revolutionise how users engage with the blockchain. Conventional single-key addresses are inherently vulnerable, with the loss or compromise of a single key posing significant risks. To address these concerns, a tech stack level multi-sig system has been meticulously designed to greatly enhance both security and usability.

### Multi-Sig Model: 2/4 Configuration

The recommended multi-sig configuration involves the creation of a 2/4 multi-sig address, which provides a robust security framework for all users. The setup is as follows:

- 1. Cold Storage Keys:** Two keys are securely stored offline (cold storage), reducing the risk of unauthorised access.
- 2. Hot Wallet Key:** One key is stored in the user's hot wallet, allowing for convenient access and daily transactions.
- 3. Service Provider Key:** One key is held by a trusted service provider, who acts as an additional layer of security and oversight.

### Full Custody and User Control

A key advantage of Glue's native multi-sig model is that users retain full custody and control over their assets. The service provider cannot unilaterally execute transactions; their role is to provide additional security and verification. Users can always override the service provider's decisions, ensuring that they maintain ultimate authority over their funds. This balance of security and control is crucial for building trust and driving real-world adoption of blockchain technology.

## The Role of the Service Provider

The service provider plays a crucial role in this multi-sig model, offering both security and user support on three distinct levels whilst the full custody and ultimately the decision remains with the user.

**Automatic Countersigning for Secure Transactions (ACCT):** The service provider analyses each transaction submitted by the user's hot key. For secure and routine transactions, such as depositing stablecoins into the Glue lending protocol, the service provider will automatically countersign the transaction, ensuring a seamless user experience.

**Medium Risk Transaction Verification (MRTV):** If a transaction appears suspicious or unconventional, such as purchasing a lesser-known token, the service provider can use second-factor authentication to request additional confirmation from the user. This extra step helps prevent scams or accidentally confusing tokens by alerting the user and requesting explicit approval before countersigning.

**High Risk Transaction Verification (HRTV):** In the event of a highly suspicious transaction, such as transferring all assets to an unknown third-party wallet, the service provider can delay the countersignature for at least 24 hours. This precautionary measure is designed to protect users from potential threats, such as a wrench attack, by providing a buffer period during which the user can verify or cancel the transaction.

### Strategic Advantages of Native Multi-Sig Integration

**Enhanced Security:** Multi-sig addresses significantly reduce the risk of unauthorised access and asset theft. By requiring multiple keys for transaction authorization, the system ensures that a single compromised key does not jeopardise the user's assets.

**User Friendly Experience:** The involvement of a service provider to automatically countersign routine transactions and verify suspicious ones simplifies the user experience. Users can enjoy the benefits of enhanced security without the complexity often associated with multi-sig setups.

**Preventing Fraud and Mistakes:** The additional layer of verification provided by the service provider helps prevent fraud and user errors. By flagging potentially risky transactions and providing a cooling-off period for suspicious activities, the system protects users from impulsive decisions and malicious attacks.

**Building Trust for Real World Adoption:** Enhanced security measures are crucial for attracting mainstream users to the blockchain ecosystem. By addressing common security concerns and offering a user-friendly solution, Glue can drive broader adoption and confidence in decentralised technologies.

## Section Summary

The integration of native multi-signature functionality within Glue represents a strategic enhancement that addresses fundamental security challenges in the blockchain space. By adopting a 2/4 multi-sig configuration and involving trusted service providers, we offer users a robust, user-friendly, and secure way



to manage their assets. This innovation not only strengthens the security of our ecosystem but also paves the way for greater real-world adoption by making blockchain technology more accessible and trustworthy. By maintaining full custody and control for users, while providing an additional layer of security and support, Glue sets a new standard for safety and usability in the blockchain industry.

## Final Summary and Conclusions

### Recap of Key Innovations and Strategic Enhancements

**Integrated L1 and Use-Case Optimised L2s:** By leveraging Substrate's modular architecture, Glue has created a cohesive ecosystem where Layer 1 and specialised use-case optimised Layer 2 solutions work seamlessly together. This approach ensures optimal performance, scalability, and user experience by tailoring each L2 to specific application needs.

**Cross-Consensus Messaging (XCM):** XCM enhances interoperability within the Glue ecosystem, allowing different L2s to communicate natively. This feature provides instant bridging, cross-L2 smart contract calls, and a unified user experience, addressing the limitations of isolated and competitive L2 environments seen in other blockchains.

**Unified Token Model:** Glue's unified single token model for both L1 and all L2s aligns the interests of the entire ecosystem, fostering collaboration and efficiency. This model eliminates competition between L2s and ensures that all participants benefit from the ecosystem's growth and innovation.

**Security and Censorship Resistance:** Substrate's architecture divorces security from censorship resistance, allowing Glue to maintain robust security through the L1 while offering flexible levels of censorship resistance across different use-case optimised L2s. This flexibility enables more intelligent trade-offs, catering to the specific requirements of various applications today and for the future developments.

**Ecosystem of Service Providers:** Recognising the importance of customer service, Glue has established a framework for third-party service providers to offer various support services. This approach addresses a critical gap in the crypto space, providing users with reliable customer service and creating sustainable revenue models for service providers.

**Native Multi-Signature Integration:** Glue has implemented native multi-sig functionality, encouraging users to set up secure 2/4 multi-sig addresses. This model enhances security and usability by involving service providers to analyse transactions and provide an additional layer of verification, significantly reducing the risk of unauthorised access and fraud.

### Future Vision and Innovation

Glue's goal is simple: To make crypto live up to what it always was meant to be: a new and world changing financial system.

Our current advancements are just the beginning. We are committed to continuous innovation and enabling

the development of new technologies that will further transform the blockchain ecosystem.

With a robust infrastructure already in place, Glue is well-positioned to lead the charge in the next wave of blockchain innovation. Our flexible and scalable architecture, combined with a strong focus on user experience and security, sets the stage for a future where decentralised technology can truly thrive.

### Final Words

Glue is not just another blockchain project; it is a comprehensive solution designed to unlock the full potential of decentralised technology. With our current achievements as a foundation, we are poised to revolutionise the crypto ecosystem, making it accessible, secure, and effective for everyone. The journey has just begun, and we are excited to lead the way in creating a world changing financial system that lives up to its promise.

All the concepts outlined in this white paper have either been fully developed and are in the process of deployment or are nearing completion in their development cycle, ready for finalisation and release. None of the discussed initiatives are speculative; they are concrete and actionable. Moreover, our dedication to facilitating future innovation means that these endeavours represent only a fraction of the transformative impact we anticipate having on the entire crypto ecosystem.





# Glue network:

Decentralized Application Stack



# Glue Network: Decentralised Application Stack

## Abstract

The Glue Network is poised to revolutionise the blockchain landscape by launching as a fully integrated ecosystem rather than merely a technological Layer 1 solution. This white paper outlines Glue's comprehensive approach to decentralised finance, which prioritises user experience, security, and capital efficiency. Glue's strategy involves proactive development and deployment of essential DeFi primitives and decentralised applications, including a decentralised exchange, lending protocol, and stablecoin, all integrated within a unified platform. By focusing on Useful Total Value Locked metrics, Glue ensures that liquidity is both functional and committed, fostering a stable and reliable financial environment. The governance structure leverages the Glue token for stablecoin management and introduces separate governance tokens for other protocols, maintaining credible neutrality and promoting innovation. Key highlights include the Glue Hub, an aggregation platform designed to simplify user interactions, and a strategic roadmap that guides the ecosystem's development. This document also details the distribution mechanisms for governance tokens and the Investment DAO model, aimed at driving sustained growth and innovation within the Glue ecosystem. By launching as a holistic ecosystem, Glue maximises synergies between its components, offering a superior user experience and unparalleled capital efficiency. This integrated approach reduces fragmentation, promotes collaborative growth, and sets a new benchmark for what a blockchain ecosystem can achieve.

## Introduction

The Glue Network is set to redefine the blockchain ecosystem by not just being another Layer 1 (L1) technology, but by launching a fully integrated, comprehensive ecosystem. Our goal is to meet and exceed the demands of decentralised finance (DeFi) while providing a superior user experience. The key to this transformation lies in our holistic approach, which integrates various decentralised applications (dApps) and protocols from the outset, ensuring seamless interaction, unparalleled capital efficiency, and a user-centric design.

In this white paper, we detail our approach to creating a cohesive and powerful ecosystem that combines innovative technology with strategic deployment. By addressing core functionalities such as trading, lending, and stablecoin management, and emphasising quality over quantity in dApp development, Glue ensures a robust and user-friendly experience. Furthermore, our governance and incentive structures are designed to foster a competitive and innovative environment, attracting high-quality projects and long-term participants.

By launching Glue as a comprehensive ecosystem, we leverage powerful synergies that enhance user experience and capital efficiency. This integrated model reduces fragmentation, promotes synergistic growth, and ensures strategic governance, setting a new standard for blockchain ecosystems. Our vision is to make Glue not just another blockchain, but a vibrant, self-sustaining ecosystem that drives innovation, attracts investment, and delivers exceptional value to its users.

## Goals of the Glue dApp Stack

Ironically, the product requirements to compete with a centralised exchange (CEX) are rather simple. Users need to be able to transfer tokens to other users for payments. Users want to be able to buy and sell as broad of a selection of tokens as possible and they want to have the ability to stake their tokens to participate in the network security, consensus and earn yield. Combined with a good user experience (UX), easy onboarding, excellent security, and decent customer support. These are the core requirements needed to be met to compete against CEXs. These straightforward yet critical requirements form the foundation of the Glue dApp Stack.

### User Experience Comes First

For Glue to provide a great user experience, it is essential that users are not forced to navigate a confusing array of decentralised exchanges (DEXs). The current landscape, where users need to know that Curve<sup>1</sup> is best for trading stablecoins while Uniswap<sup>2</sup> is preferred for more volatile tokens, is overly complex and a significant barrier to entry. The process needs to be simplified.

To achieve this simplicity, Glue needs to offer a single, intuitive frontend. While the Glue Network remains completely permissionless to foster innovation, there must be a user-facing interface that curates the best technologies, makes them easily accessible, and aggregates them in a cohesive manner. This interface should serve as a one-stop-shop for users, offering seamless access to the best trading, payment, and staking solutions available.

### Prioritising User Experience in All Decisions

Every decision made in the development and deployment of the Glue dApp Stack should be geared towards optimising the user experience. This includes not only creating a straightforward and user-friendly frontend but also ensuring the best possible trade settlement prices.

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<sup>1</sup> <https://classic.curve.fi/>

<sup>2</sup> <https://www.uniswapfoundation.org/>



Key elements of the user experience that Glue aims to perfect include:

**1. Unified Trading Interface:** Users should be able to buy and sell a wide range of tokens through a single, intuitive platform. This platform will integrate the best DEX technologies available, ensuring users get the best prices without needing to understand or navigate the complexities of the underlying protocols.

**2. Seamless Payments:** Transferring tokens to other users for payments should be as simple as sending an email. The interface should support quick and secure transactions with minimal friction.

**3. Efficient Staking:** Users should have easy access to staking opportunities, allowing them to earn yield on their tokens without navigating multiple platforms or understanding complex staking mechanisms.

**4. Aggregated Services:** The Glue dApp Stack will aggregate various services, such as trading, staking, and payments, providing a holistic solution that addresses the majority of the users' day to day needs within a single platform.

**5. Excellent Security:** Security is non-negotiable. The Glue dApp Stack will implement best-in-class security measures to protect user assets and transactions, ensuring trust and reliability.

**6. Customer Support:** To compete with CEXs, Glue is building a service provider ecosystem so that there is chain wide customer support. Users should have access to trusted and reliable assistance whenever needed, whether through automated help systems or live support.

By focusing on these goals, Glue aims to create a dApp stack that not only competes with but surpasses the offerings of centralised exchanges, delivering a seamless, secure, and user-friendly experience.

### Aggregation Strategy: The Glue Hub

We are developing the Glue Hub; an ecosystem aggregation platform designed to curate and present the best products and services available on the Glue Network. The goal of the Hub is to serve as a comprehensive yet user-friendly gateway for retail users, addressing their most common needs while abstracting away complexities into an advanced user section. This ensures that the Hub caters to both casual and experienced users, offering a seamless and efficient experience for everyone.

Most users have straightforward requirements. They want to trade tokens, make payments, and earn yield without dealing with the intricacies of advanced financial products. For example, providing liquidity involves understanding impermanent loss<sup>3</sup>, which is too complex for the average user to manage effectively and therefore, increasing the risk to the user. The Glue Hub will simplify these experiences by aggregating and presenting only the most essential and user-friendly features on its main interface. More complex functionalities will be available in an advanced user section for those who seek them.

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<sup>3</sup> <https://support.uniswap.org/hc/en-us/articles/20904453751693-What-is-Impermanent-Loss>

<sup>4</sup> <https://ethereum.org/en/foundation/>

### Trading Aggregation and Best Execution

For trading, the Glue Hub will implement a sophisticated router that directs liquidity between all protocols on the Glue Network, as well as cross-chain. Users should not have to know which decentralised application to use; the Hub will automatically route their orders to achieve the best execution price. This approach ensures that users benefit from optimal pricing without needing to understand the underlying mechanics of different DEXs.

The trading interface will aggregate liquidity from all DEXs on Glue, following a rigorous vetting process and protocol vote to add new DEXs into the rotation. This strategy also significantly benefits protocol developers. One of the core challenges on Ethereum<sup>4</sup> and other Layer 1s is the intense competition for user adoption. New DEXs often struggle to gain traction against established players like Uniswap, despite offering more efficient solutions. Developers, who are typically more focused on building robust protocols than on marketing, find it difficult to attract users.

The Glue Hub addresses this issue by being completely neutral in routing orders, prioritising the best settlement price for users. If a developer launches a new, more efficient DEX (e.g., a stablecoin-specialised DEX) and secures some liquidity, the Hub will start routing orders their way, provided they offer better prices. This creates an ideal environment where users receive the best execution, and developers can focus on innovation without the distraction of extensive marketing efforts.

### Extending Aggregation Across Services

This aggregation philosophy extends beyond trading to other services such as lending protocols and NFT marketplaces:

**Lending Protocols:** The Glue Hub will vet lending protocols for security and start routing deposits to those offering the best yields and interest rates. Over time, Glue will have a capability to have a protocol that automatically manages withdrawing and depositing tokens to the highest-yielding protocol, ensuring users always get the best returns.

**NFT Marketplaces:** The Hub will relist NFTs from all marketplaces, providing a single interface where users can browse and purchase NFTs regardless of the original listing site. This aggregation makes it easier for users to find and buy NFTs.

### Addressing the Challenges of Aggregation

While aggregation services have been attempted by players like 1inch<sup>5</sup> and Paraswap<sup>6</sup>. These platforms often struggle to gain major adoption due to limited marketing budgets and brand recognition. Glue does not face this problem since an entire ecosystem is being built. This allows for integration of marketing and brand-building efforts more effectively.

Instead of being a niche specific aggregation player, Glue will aggregate and leverage the comprehensive ecosystem to drive user adoption and engagement.

<sup>5</sup> <https://1inch.io/>

<sup>6</sup> <https://www.paraswap.io/>



## Section Summary

The Glue Hub is designed to transform the user experience by aggregating the best products and services on the Glue Network. By simplifying access to trading, lending, and NFT marketplaces, and providing the best execution prices through intelligent routing, the Hub ensures that users enjoy a seamless, efficient, and secure experience. This strategy not only benefits users but also supports protocol developers by allowing them to focus on innovation rather than marketing. Glue Hub aims to create a cohesive and powerful ecosystem that drives the widespread adoption of decentralised technologies.

## Glue dApp Development Strategy: A Proactive and Integrated Approach

The Glue dApp development strategy diverges significantly from the conventional approaches adopted by most Layer 1 blockchains. Typically, L1 blockchains focus on building the underlying technology and then wait for external developers to fork or build protocols from other blockchains onto their platform. This passive strategy often results in significant time lags before the L1 becomes truly useful, and the quality of projects can be highly variable. While this model has certain benefits, it also comes with substantial tradeoffs. Glue aims to capture the benefits while mitigating the negatives of this approach, adopting a more integrated and proactive model similar to Apple's<sup>7</sup> strategy with its App Store<sup>8</sup>.

### Proactive Ecosystem Development: The Apple Model

Apple's App Store offers a vast array of applications across various categories and quality levels, but Apple itself provides the crucial functionality pieces, such as the phone app and browser. Users then have the option to switch away from these core apps if they wish. Glue's approach is analogous: while cultivating a permissionless ecosystem, Glue ensures that essential functionalities are provided directly by the foundation or its sponsored entities, offering a seamless and cohesive user experience from the outset.

### Two Core Approaches to dApp Development

**1. Permissionless Ecosystem with Developer Support:** Glue is committed to maintaining a permissionless ecosystem where innovation can flourish. We recognise the importance of helping developers build high-quality products, and we will actively support them through various means, including auditing, raising liquidity, and promoting the best new protocols. Unlike other blockchains that may prioritise the sheer number of live protocols, Glue focuses on quality over quantity. Our goal is to assist a select number of high-calibre projects to deploy and succeed on the Glue Network. This approach ensures that users have access to reliable, secure, and innovative dApps that meet their needs.

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<sup>7</sup> <https://www.apple.com/>

## 2. Active Ecosystem Development by the Foundation:

Especially in the early stages, the Glue foundation will take a hands-on approach to ecosystem development. This involves directly developing and deploying key protocols and services to ensure the availability of essential functionalities. For example, an entity sponsored by the Glue foundation will develop the Glue Hub, the aggregation platform that provides users with access to the best products and services available on the Glue Network. Additionally, the foundation will deploy a variety of proven and best-in-class open-source protocols and integrate them into a cohesive ecosystem, Glue ensures that users have access to a comprehensive suite of financial services right from the start. This strategy guarantees a robust and user-friendly experience, reducing the reliance on external developers to fill critical gaps.

### Strategic Roadmap and Vision

Glue is committed to having a well-defined roadmap that guides the development and evolution of the ecosystem. While the execution and delivery of this roadmap will ultimately be fully decentralised, the foundation believes in the importance of having an overarching vision to ensure coordinated and strategic growth. For example, once adequate liquidity is achieved within the ecosystem, the focus and funding can shift from incentivizing liquidity protocols to exploring and developing new use cases. This proactive and strategic approach allows Glue to adapt to the changing needs of the ecosystem and its users, ensuring sustained growth and innovation. By providing foundational functionalities and fostering a supportive environment for developers, Glue sets the stage for a vibrant and dynamic ecosystem that can evolve and thrive over time.

### Section Summary

Glue's dApp development strategy is designed to balance the benefits of a permissionless, open ecosystem with the need for proactive and integrated development. By supporting high-quality projects and taking an active role in providing essential functionalities, Glue ensures a robust and user-friendly experience from the outset. This approach, coupled with a strategic roadmap and vision, positions Glue to lead the way in creating a cohesive and innovative blockchain ecosystem.

### Initial dApps in the Glue Ecosystem

To meet the core functionality required to compete with centralised exchanges, Glue will launch with a suite of decentralised applications designed to provide a seamless and comprehensive user experience. These initial protocols are carefully selected to address the fundamental needs of users and to create a vibrant and integrated ecosystem. The launch dApps include protocols that will not only fulfil the essential use cases to compete with a CEX but will also be natively integrated with each other, creating a cohesive and synergistic ecosystem. The launch dApps include:

<sup>8</sup> <https://www.apple.com/app-store/>



## Decentralised Exchange (DEX)

**Best Execution Price and Low Slippage:** The Glue DEX will prioritise offering the best execution prices and minimising slippage. This ensures users get the most value out of their trades and experience fewer discrepancies between the expected and actual trade prices.

**Wide Variety of Top Tokens:** To cater to diverse trading needs, the DEX will support a broad range of top tokens, providing users with extensive choices for trading.

## Router for Optimised Trades

**Neutral Frontend for Developer Incentives:** The trade router will make the frontend credibly neutral, encouraging developers to launch their own protocols on Glue and compete with the initial offerings. This neutrality encourages innovation and diversity within the entire ecosystem.

**Limit Orders:** To minimise slippage for larger trades, the router will support limit orders, allowing users to set specific price points for their trades and ensuring better control over transaction outcomes.

## Stablecoin USDg

**Optimised for Stability:** Unlike other stablecoins that might take undue risks, Glue's stable coin, USDg, will be optimised for stability. The goal is to make the entire ecosystem thrive, avoiding unnecessary risks that could destabilise the platform.

## Lending Protocol

**Support for Stable Coin:** A robust lending protocol is crucial to support the ecosystem's stablecoins. It will use deposits that generate yield, ensuring the stablecoins are well-collateralized.

**High Security Parameters:** The lending protocol will be optimised and parameterized for high levels of security rather than maximal yield. This focus on security ensures user funds are safeguarded, to build trust and reliability.

## Collateral and Liquidity Integration

**Stablecoin Collateral:** The stablecoin will use deposits from the lending platform as its collateral. This integration maximises the liquidity available on the lending protocol and enhances the stability and utility of the stablecoin. This approach differs from other protocols like DAI<sup>9</sup>, which do not prioritise ecosystem-wide optimisation. In the future, collateral from third party lending protocols can also be accepted as collateral pending a governance vote.

**Incentivized Pairs:** All incentivized trading pairs on the DEX will be USDg, the native stablecoin, paired with various tokens. This strategy maximises the usefulness and adoption of the stable coin, ensuring it becomes a central component of the Glue ecosystem alongside a more unified and united ecosystem and easier usability.

## Section Summary

By launching with these essential dApps, Glue addresses the core functionalities needed to compete with centralised exchanges. The integration and

optimisation of these protocols ensure a seamless user experience, high security, and robust liquidity, setting the stage for a thriving and innovative ecosystem. This foundational suite of dApps will not only meet immediate user needs but also provide a solid base for future growth and development within the Glue network.

## Deployment Order of Protocols

Given that the protocols were selected to maximise compatibility and usefulness to users, they rely on each other and need to be launched sequentially. Bridging is crucial and will be addressed in a separate paper. The strategic, phased deployment of Glue's protocols ensures a robust and interconnected ecosystem that meets the core requirements to compete with centralised exchanges. This methodical approach establishes a strong foundation for liquidity, stability, and seamless trading, ultimately driving widespread adoption and long-term success.

### Phase 1: Lending Protocol Deployment

**1. Enable Flash Loans for Market Makers:** Once the mainnet is live, the first protocol to be deployed will be the lending protocol. Pre-launch liquidity raised will be bridged onto Glue mainnet and deposited into this protocol. Market makers can then access flash loans, which are critical for effective arbitrage. This functionality ensures that the prices on Glue accurately track those on CEXs and other chains, contributing to a healthy and efficient market. The availability of flash loans allows market makers to exploit price discrepancies swiftly, maintaining price parity across different platforms.

**2. Support Stablecoin Minting:** A key objective is to have substantial bridged assets to facilitate the minting of the stablecoin against these deposits. Achieving a significant market capitalization for the stablecoin USDg early on is crucial for the ecosystem's stability and adoption. This stablecoin will serve as the backbone for many financial operations within Glue, providing a reliable and widely accepted medium of exchange. The minting process will be streamlined, allowing users to easily create and redeem stablecoins, ensuring liquidity and trust in USDg.

**3. Facilitate Borrowing for Leverage:** Additionally, the lending protocol will enable users to borrow assets for leverage and yield enhancement. This capability attracts users looking to maximise their returns through strategic borrowing and lending activities. By offering competitive borrowing rates and secure lending mechanisms, Glue ensures that both borrowers and lenders find value in participating in the protocol. The lending protocol will be designed with robust security measures to safeguard user assets, prioritising trust, and reliability.

### Phase 2: Stablecoin Protocol Deployment

**1. Unified Ecosystem Stablecoin:** Following the lending protocol, the stablecoin protocol will be deployed. A single, ecosystem-wide stablecoin, USDg, simplifies user experience by eliminating the

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<sup>9</sup> <https://makerdao.com/en/>



need to choose between multiple stablecoins like DAI, USDC<sup>10</sup>, USDT<sup>11</sup> or less liquid alternatives. USDg has no centralised issuer and will be fully collateralized with a mix of crypto assets and tokenized real-world assets (RWA). Users will interact with a decentralised protocol to mint and redeem USDg, ensuring trust and transparency. By leveraging decentralised collateral, Glue enhances the stability and reliability of USDg, making it a cornerstone of the ecosystem.

**2. USDg:** Initially, using a third-party stablecoin was considered but it was concluded that none offered the right balance of decentralisation, user yield, and adoption. An ecosystem native stablecoin is crucial for retaining users by providing a stable, reliable asset that can be used across the Glue ecosystem. Given that USDg will be fully collateralized and that Glue tokens will not be allowed as collateral initially, the protocol avoids risks similar to those seen with Terra<sup>12</sup>.

### Phase 3: Decentralised Exchange Deployment

**1. Incentives for USDg Paired Tokens:** The final phase involves deploying the DEX. Incentives will be exclusively for USDg paired tokens (except for USDg pairings with other stablecoins), promoting the stablecoin's adoption and integration within the ecosystem. This strategy ensures that USDg becomes a central element of trading activities, increasing liquidity and trust. By incentivizing liquidity providers to focus on USDg pairs, Glue enhances the depth and stability of the market, making it more attractive for traders and market participants.

**2. Concentrated Liquidity Functions:** The DEX will use concentrated liquidity functions to minimise slippage and maximise yield for liquidity providers. Although this approach is more complex, it abstracts away the intricacies from retail users, allowing market makers to manage it effectively. Retail users often lack the understanding required to provide liquidity efficiently, even in simpler forms. Concentrated liquidity ensures that capital is used optimally, providing better price stability and reduced slippage for traders. Market makers will play a crucial role in maintaining liquidity, ensuring that the DEX operates smoothly and efficiently.

**3. Limit Order Functionality:** The DEX will integrate with the routing protocol to offer limit order functionality, minimising slippage. Partial orders can be filled, with market makers arbitraging the remaining volume back to the real price. This feature enhances the trading experience by ensuring more optimal execution prices for users. By supporting limit orders, Glue provides traders with greater control over their transactions, reducing the risk of unfavorable price movements. The routing protocol will dynamically route orders to the most efficient execution paths, ensuring optimal outcomes for all trades.

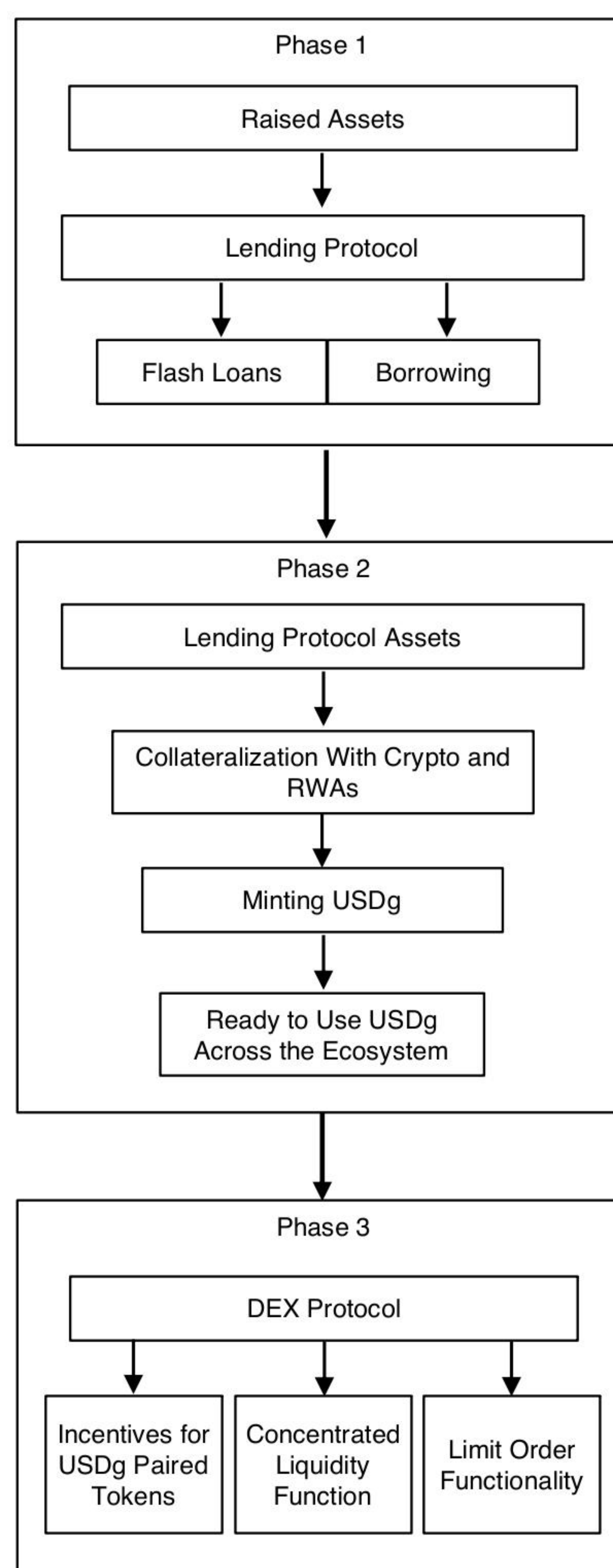


Figure 1: Deployment order of protocols to ensure the entire ecosystem rolls out efficiently and with liquidity that is stable and can be relied on.

### Integration and Interdependence

The integration of these protocols is designed to create a synergistic and robust ecosystem. The stablecoin will utilise deposits from the lending platform as its collateral, maximising liquidity and ensuring the stability of USDg. This interconnected approach enhances the functionality and reliability of both the lending protocol and the stablecoin, creating a seamless financial environment for users. The integration ensures that liquidity is always available to

<sup>10</sup> <https://www.circle.com/en/usdc>

<sup>11</sup> <https://tether.to/en/>

<sup>12</sup> Antonio Briola, David Vidal-Tomás, Yuanrong Wang, Tomaso Aste,

Anatomy of a Stablecoin's failure: The Terra-Luna case, Finance Research Letters, Volume 51, 2023. <https://doi.org/10.1016/j.frl.2022.103358>



support the stablecoin, reducing the risk of instability and enhancing user confidence.

All incentivized trading pairs on the DEX will be USDg paired tokens, promoting the stablecoin's utility and adoption. This strategy integrates USDg deeply into the trading activities within the Glue ecosystem, ensuring that it becomes the preferred medium of exchange. By focusing on USDg pairs, Glue ensures that the stablecoin is widely used and accepted, driving liquidity and volume in the DEX.

### Section Summary

The strategic deployment of Glue's protocols ensures a robust and interconnected ecosystem that meets the core requirements to compete with centralised exchanges. By launching the lending protocol first, followed by the stablecoin, and then the DEX, Glue establishes a strong foundation for liquidity, stability, and seamless trading interactions. Each protocol is designed to integrate natively with the others, maximising utility, and user experience.

This phased approach not only addresses immediate user needs but also sets the stage for sustainable growth and innovation within the Glue ecosystem. By focusing on quality, security, and user-centric design, Glue aims to create a decentralised financial system that is both powerful and accessible, driving widespread adoption and long-term success.

### Glue's Total Value Locked Philosophy: Prioritising Utility and Stability

Total Value Locked (TVL) is a core metric by which DeFi projects are often judged. While we acknowledge the logic behind this, as it provides a simple and quantifiable measure of a project's traction, TVL is too simplistic to be particularly useful on its own. Glue's approach focuses on two more meaningful and significant metrics: Useful TVL and Locked TVL.

#### Useful TVL: Ensuring Effective Support for Trades and Borrowing

Useful TVL refers to the value locked in the system that actively supports the size of trades and borrowing needed by the ecosystem. The initial goal is to ensure that trades up to \$50,000 can be executed while keeping slippage below 0.5%. This threshold covers the vast majority of retail trades, ensuring that everyday users can trade efficiently without facing significant price impacts. This focus on practical usability over sheer volume means that our liquidity pools will be designed to handle typical transaction sizes effectively. For larger trades over \$50,000, users can break them into smaller parts or use limit orders to achieve better prices. This approach not only makes the ecosystem more user-friendly but also ensures that liquidity is used more efficiently.

Rather than attracting vast amounts of liquidity that remain underutilised, Glue aims to ensure that the liquidity that is attracted is actively supporting the needs of users. This strategy optimises the use of resources and enhances the overall efficiency of the ecosystem.

### Understanding Slippage

Slippage is the difference between the expected price of a trade and the actual price at which the trade is executed. In automated market makers (AMMs) like Uniswap, slippage is influenced by the ratio of the trade size to the liquidity pool size. To support trades up to \$50,000 with slippage below 0.5%, several factors need to be considered, including the size of the liquidity pool and the price impact of a trade. Slippage occurs when a trade is large enough to move the market price due to the relative size of the trade compared to the liquidity available.

For an AMM, the price impact can be approximated by:

$$\text{Slippage} \approx \frac{\text{Trade Size}}{2 \times \text{Liquidity Pool Size}}$$

To achieve slippage of less than 0.5% for a \$50,000 trade, the following can be set up:

$$0.5\% \approx \frac{50,000}{2 \times \text{Liquidity Pool Size}}$$

Converting from percentage to decimal:

$$0.005 \approx \frac{50,000}{2 \times \text{Liquidity Pool Size}}$$

Solving for the liquidity pool size:

$$\begin{aligned} 0.005 \times 2 \times \text{Liquidity Pool Size} &= 50,000 \\ 0.01 \times \text{Liquidity Pool Size} &= 50,000 \end{aligned}$$

$$\text{Liquidity Pool Size} = \frac{50,000}{0.01}$$

Giving the final size of the liquidity pool to be

$$\text{Liquidity Pool Size} = 5,000,000$$

To support \$50,000 trades with slippage below 0.5%, the liquidity pool must have at least \$5,000,000 in liquidity. This ensures that large trades can be executed with minimal impact on the market price, providing a stable and efficient trading experience for users.

### Locked TVL: Promoting Long-Term Stability and Commitment

Locked TVL refers to the value locked in the system that cannot be immediately withdrawn. In the crypto industry, it is common to see new protocols launched with significant incentives to attract initial TVL, often with the primary aim of driving speculative trading towards their own token and its price. However, this mercenary liquidity usually leaves as soon as the incentives stop, leading to instability and short-termism. Glue's goal is to build a long-term sustainable ecosystem. Priority is given to liquidity that is committed for certain periods over mercenary liquidity that can exit at any moment. By doing so, Glue's locked TVL reflects a stable and reliable financial environment. Glue's incentives have been designed to reward long-term commitments rather than short-term participation. This could involve offering higher rewards for liquidity providers who lock their funds for longer periods, thereby creating a more stable base of liquidity. By focusing on locked TVL,



risk associated with sudden withdrawals which can lead to destabilisation of the ecosystem is minimised.

### **Implementing Useful and Locked TVL**

Glue will implement smart contracts that facilitate easy management of locked funds, including features like automatic renewal options for liquidity commitments, to streamline the process for users and providers. Additionally, engaging with the community to educate them about the benefits of long-term participation and the importance of useful TVL will be crucial. By having an educated community that understands and supports Glue's philosophy, a more resilient and cooperative ecosystem can be built.

### **Section Summary**

Glue's TVL philosophy goes beyond the simplistic measure of total value locked to emphasise the importance of useful and locked TVL. By focusing on TVL that actively supports user needs and promotes long-term commitment, Glue aims to create a sustainable and efficient ecosystem. This approach provides a better user experience whilst fostering stability and trust within the Glue Network. By prioritising these meaningful metrics, Glue positions itself as a leader in creating a robust and reliable decentralised financial system.

### **Governance Tokens and Incentives**

A crucial part of the dApp deployment strategy is maintaining the Glue foundation's credible neutrality. This ensures that the foundation helps launch dApps without creating conflicts of interest that could stifle competition and innovation within the ecosystem. Effective governance structures and incentive mechanisms are essential to achieving this balance.

### **Credible Neutrality for dApp Governance**

The Glue foundation aims to launch and support dApps while remaining neutral, avoiding any conflicts of interest that could hinder the competitive environment necessary for innovation and optimal user experience. Below the approach to governance for different components of the ecosystem has been described.

#### **1. Decentralised Exchange and Lending Protocol Governance**

Some major protocols, such as the DEX and lending protocol, will have their own governance token. This ensures that governance decisions are made in the best interest of the specific protocol, rather than being influenced by the foundation or other competing interests. By not owning the governance tokens of these protocols, the Glue Network avoids a negative incentive spiral where the Network might favor its own protocols over third-party solutions. This creates a healthy competitive environment that encourages innovation and improves user experiences. Additionally, individual governance tokens allow for the development of dedicated teams and communities around each protocol. This decentralised approach enhances the resilience and adaptability of the ecosystem.

### **2. Stablecoin Governance**

Unlike for the DEX and Lending protocols, the Stablecoin will use Glue tokens for its governance. Governance tokens for stablecoins that solely represent the yields of the stablecoin often incentivize high-risk strategies to maximise returns. In contrast, Glue token holders are incentivized to maintain the stability and utility of the stablecoin by selecting low-risk collateral. This approach maximises the stablecoin's reliability and utility across the ecosystem. Glue token holders benefit when the entire ecosystem grows and gains adoption. Thus, they are naturally inclined to make decisions that favor the long-term stability and usability of the stablecoin, avoiding risky strategies that could undermine trust and utility. That is why the stablecoin, USDg, will be governed by the Glue token. This ensures that the governance decisions for the stablecoin are aligned with the overall health and stability of the Glue ecosystem.

### **Incentive Mechanisms**

Incentives play a critical role in the adoption and success of the protocols within the Glue ecosystem. Glue's strategy ensures that incentives are aligned with the long-term goals of the ecosystem and the users' best interests.

#### **1. DEX and Lending Protocol Incentives**

Each protocol will have its own governance token, which will also be used for incentive purposes. This aligns the interests of token holders with the growth and success of the specific protocol. Incentives will be provided to liquidity providers and active users of the protocols, ensuring that there is sufficient liquidity and engagement. This helps maintain healthy and active markets within the Glue ecosystem.

#### **2. Stablecoin Incentives**

The Glue token will be used to incentivize the minting of the stablecoin USDg. This promotes the stablecoin's adoption by rewarding users who contribute to its liquidity and stability. Incentives will be structured to favor low-risk collateral, ensuring that the stablecoin remains stable and reliable. This approach helps build trust and encourages wider usage within the ecosystem.

### **Section Summary**

Glue's governance and incentive strategy is designed to foster a competitive, innovative, and user-centric ecosystem. By maintaining credible neutrality and implementing effective governance structures, we ensure that each protocol operates in the best interest of its users. The use of the Glue token for stablecoin governance aligns incentives with the overall health and stability of the ecosystem, while separate governance tokens for other protocols promote focused and effective governance. Through well-structured incentives and a fair token distribution mechanism, Glue aims to build a robust and resilient decentralised financial system that attracts and retains a vibrant community of users and developers.



## Distribution Mechanism for DEX and Lending Protocol Tokens

Given that the Glue foundation will play a pivotal role in launching the DEX and Lending Protocols, it will initially own the governance tokens for these protocols. Distributing these tokens in a manner that maximises the benefit to the entire ecosystem is crucial. While the exact breakdown is not yet finalised, the proposed distribution strategy aims to ensure effective governance, incentivize liquidity, and attract significant investment into the ecosystem.

### Proposed Token Distribution Strategy

**1. Team Allocation:** Each protocol will have its own team dedicated to its development and governance. The foundation will seek to onboard team members who are highly qualified and share a vision for the protocol's success and the broader ecosystem's growth. Allocating a percentage of governance tokens to the team ensures that their incentives are aligned with the success of the protocol and the ecosystem. This motivates the team to focus on both short-term performance and long-term sustainability.

**2. Liquidity:** A significant portion of the governance tokens will be allocated as liquidity incentives. This strategy helps attract the necessary liquidity to each protocol without causing excessive dilution of the Glue token. Liquidity providers will benefit from receiving both protocol governance tokens and L1 incentive tokens. This dual incentive structure increases the attractiveness of providing liquidity, ensuring that the protocols have sufficient liquidity to function effectively.

### 3. Investment DAO Tokens

The remaining governance tokens, after allocations for team and liquidity incentives, will be contributed to an Investment DAO. The DAO will be structured as a "Rage Quit DAO," a concept pioneered by Moloch DAO<sup>13</sup>. This structure allows members to exit the DAO with their proportional share of the assets, ensuring fairness and flexibility. The DAO will allow users to buy into it through a Liquidity Bootstrapping Pool (LBP) auction.

This auction will sell DAO governance tokens, which will represent ownership of the DAO's assets, including the DEX and Lending tokens. The proceeds from the auction will be reinvested into the DAO, increasing its capital base.

The DAO will hire a manager with significant venture investing experience, ideally someone well-known in the industry. This manager will be compensated from the DAO's profits, aligning their interests with the success of the investments. The DAO's mandate will be to invest in other projects within the Glue ecosystem. Over time, the DAO will sell off its DEX and Lending protocol tokens to fund new investments, promoting continuous growth and innovation within the ecosystem.

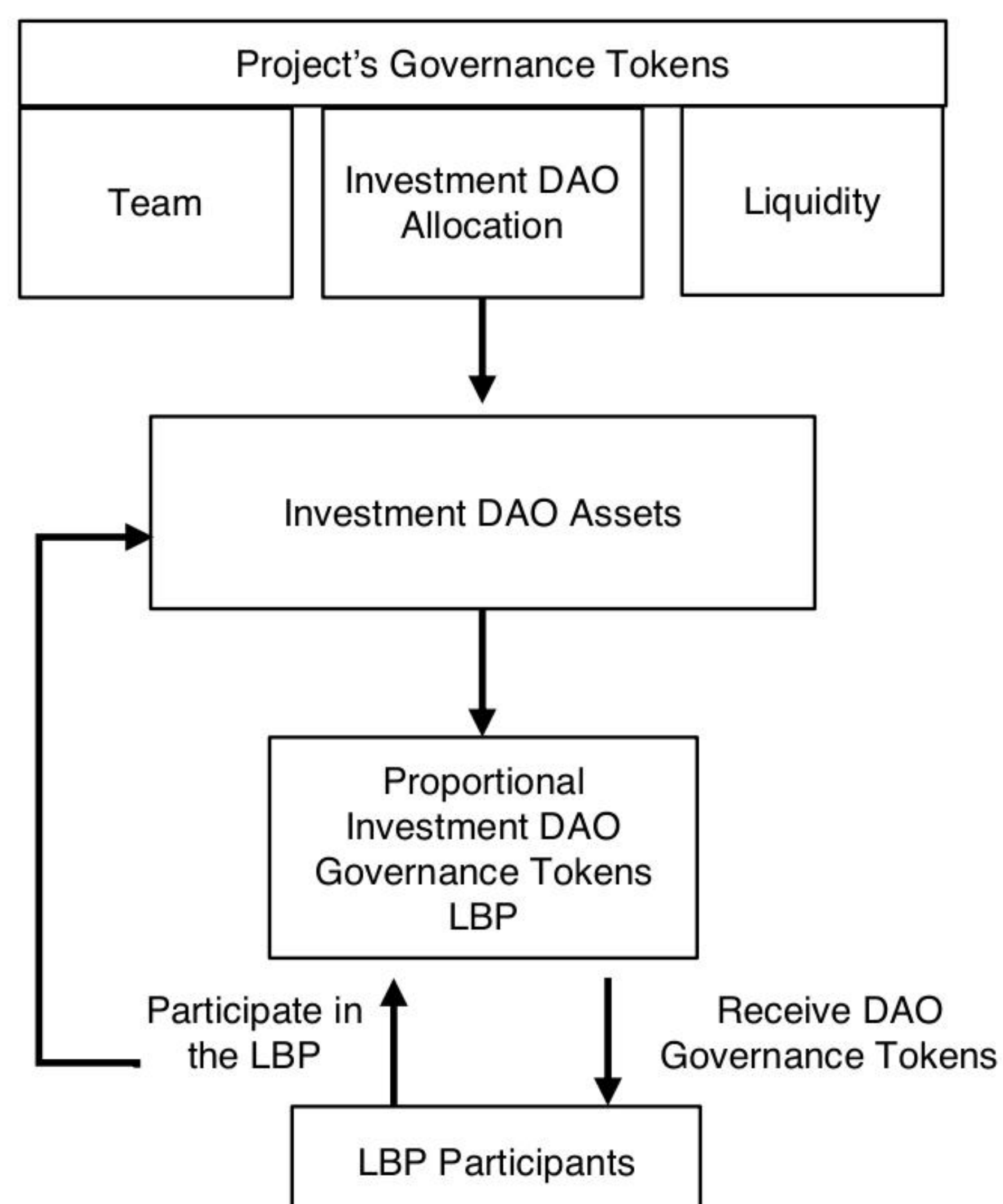


Figure 2: The project's governance tokens (such as Lending Protocol or DEX) are allocated to team, liquidity, and the Investment DAO. Funds are raised through a Liquidity Bootstrapping Pool (LBP) auction, where participants purchase DAO governance tokens. These tokens represent ownership in the DAO and entitle holders to a proportional share of the DAO's assets. The DAO itself holds the project's tokens. LBP participants indirectly own these assets through the DAO but do not receive the governance tokens of the project directly. The raised funds are managed by the DAO and are invested in projects within the Glue ecosystem. Governance token holders have voting rights and can exit the DAO with their proportional share of assets, ensuring fairness and flexibility.

### Advantages of the Investment DAO Model

**Alignment of Interests:** By contributing proceeds from the LBP auction back into the DAO, the interests of DAO members and the ecosystem are aligned. Token holders benefit from the growth and success of the investments made by the DAO.

**Capital Efficiency:** The structure allows the DAO to manage substantial assets, investing them strategically to support the ecosystem's growth. This efficient use of capital fosters innovation and helps new projects succeed.

**Experienced Management:** Hiring a well-known and experienced venture investor to manage the DAO ensures that investments are made wisely, leveraging industry expertise to maximise returns and ecosystem impact.

### Section Summary

Glue's approach to distributing DEX and Lending Protocol tokens is designed to create a healthy, competitive, and innovative ecosystem. By aligning the incentives of the protocol teams, liquidity providers, and market participants, Glue creates a robust foundation for growth. The strategic use of an Investment DAO to manage and deploy significant

<sup>13</sup> <https://molochdao.com/>



resources into the ecosystem further ensures that Glue remains dynamic and forward-looking, continually supporting new projects and driving the overall success of the network. This comprehensive strategy not only addresses immediate needs but also lays the groundwork for sustainable, long-term development.

## Final Summary and Conclusions

### The Power of Glue as a Comprehensive Ecosystem

The Glue Network is not just another technological Layer 1 blockchain; it is a comprehensive, fully integrated ecosystem designed to address the fundamental needs of the DeFi space while fostering innovation and providing a superior user experience. By launching as a whole ecosystem rather than a fragmented collection of protocols, Glue leverages powerful synergies that enhance both user experience and capital efficiency.

### Recap of Key Components

**User Experience First:** Glue prioritises a seamless and intuitive user experience. By integrating various functionalities into a single, user-friendly interface, users can trade, transfer, and stake tokens effortlessly without navigating multiple decentralised applications.

**Glue Hub Aggregation:** The Glue Hub acts as an aggregation platform, curating the best services and products within the ecosystem. It simplifies complex operations, offers optimised trade settlements, and ensures users always get the best execution prices.

**Proactive dApp Development:** Unlike traditional L1s that rely on external developers to populate their ecosystem, Glue adopts a proactive approach. The foundation supports and launches essential dApps while maintaining credible neutrality to foster a competitive environment.

**Strategic Deployment of Protocols:** The sequential deployment of the lending protocol, stablecoin, and DEX ensures that each component builds on the previous one, creating a robust and interconnected ecosystem. This phased approach ensures liquidity, stability, and seamless trading from the start.

**Governance and Incentives:** Glue employs a thoughtful governance strategy, using the Glue token for stablecoin governance to minimise risk and separate governance tokens for other protocols to maintain neutrality. Incentives are structured to attract long-term liquidity and committed participants.

**TVL Philosophy:** Glue focuses on Useful TVL and Locked TVL, prioritising liquidity that supports meaningful transactions and long-term stability over short-term gains. This approach ensures a resilient and reliable financial system.

**Token Distribution:** The distribution mechanism for governance tokens is designed to benefit the entire ecosystem. Through a combination of team allocations, liquidity incentives, and an Investment DAO, Glue ensures that resources are used efficiently to support growth and innovation.

### The Synergies of an Integrated Ecosystem

Launching Glue as a comprehensive ecosystem rather than just a tech L1 offers several powerful advantages:

**Enhanced User Experience:** By providing an integrated platform where all components work seamlessly together, Glue eliminates the complexity and friction that users often face when interacting with multiple dApps. This cohesive experience is critical for attracting and retaining users who seek simplicity and reliability in their financial interactions.

**Capital Efficiency:** The interconnectivity of protocols within Glue ensures that capital is used more efficiently. For instance, the stablecoin uses deposits from the lending platform as collateral, maximising liquidity, and utility. This level of integration ensures that resources are not wasted and that every asset within the ecosystem is leveraged to its fullest potential.

**Reduced Fragmentation:** Traditional L1s often suffer from fragmentation, with numerous dApps operating in isolation. Glue's approach ensures that all protocols are part of a unified ecosystem, reducing duplication of effort and creating a more cohesive and efficient environment.

**Synergistic Growth:** The combined efforts of various protocols within Glue create a synergistic effect where the growth of one component drives the growth of others. This interconnected growth nurtures a dynamic and resilient ecosystem that can adapt and thrive over time.

**Strategic Governance:** The use of separate governance tokens for different protocols and the overarching role of the Glue token in stablecoin governance ensure that decisions are made in the best interest of the ecosystem as a whole. This strategic governance structure prevents conflicts of interest and promotes a balanced and sustainable development path.

### Final Words

The Glue Network represents a new paradigm in blockchain technology, one where the focus is not just on the underlying tech but on creating a holistic, user-centric ecosystem. By integrating various protocols and ensuring that they work seamlessly together, Glue provides a superior user experience and unparalleled capital efficiency. This comprehensive approach not only meets the immediate needs of users but also lays the foundation for sustainable, long-term growth.

Launching Glue as a complete ecosystem from the outset is a strategic decision that maximises the synergies between its components. This integrated model ensures that Glue is not just another L1 competing for attention but a vibrant, self-sustaining ecosystem that drives innovation, attracts investment, and delivers exceptional value to its users. The power of Glue lies in its ability to bring together the best aspects of DeFi in a cohesive, efficient, and user-friendly manner, setting a new standard for what a blockchain ecosystem can achieve.





# Glue network:

Service Layer



# Glue Network: Service Layer

## Abstract

The Glue Network is addressing the challenges and opportunities within the financial services and crypto industries by bridging the gap between traditional banking and decentralised finance (DeFi). Traditional banks and neo-banks offer comprehensive customer service but are burdened by centralised custody and regulatory overhead. In contrast, the crypto industry, despite its decentralised nature and potential to replace traditional finance, lacks user-friendly services and robust customer support, hindering widespread adoption. Glue provides a solution that combines the security and transparency of decentralised custody with the comprehensive services expected from traditional financial institutions. By offering an innovative revenue model that incentivizes third-party service providers, Glue enables users to select and pay for services *a la carte*. By integrating essential services into the blockchain, Glue aims to drive mass adoption and establish itself as a pioneering force in the DeFi space, creating a financial ecosystem that is secure, efficient, and inclusive.

## Introduction

When users choose a bank, one of the most critical factors influencing their decision is the quality of service they will receive. Customers want to know if they can speak to a representative, when necessary, how long the wait time will be and whether they will receive help with technical issues. Neo-banks<sup>1,2,3</sup> have successfully combined modern, streamlined web-banking interfaces with accessible customer service, offering a model that balances efficiency and support. In stark contrast, the crypto industry has largely failed in providing such services. Decentralised protocols often lack customer support entirely, leaving users to fend for themselves or risk getting scammed by asking for help in social media channels. Even worse, the community frequently ridicules users who need support, turning them away from on chain crypto solutions and pushing them toward centralised exchanges. Basic questions are often met with derision, and users concerned about the risks of holding a single key with no recovery mechanism are mocked for not appreciating the ethos of "not your keys, not your crypto". Beyond customer support, the crypto space lacks essential services such as quality insurance and financial advisory services. Despite building the technology to potentially replace traditional finance (TradFi), crypto has not developed the services that users have come to expect. The belief that users will simply abandon their preference for service-oriented solutions is misguided. On chain crypto will never achieve meaningful adoption or realise its full potential without these services. Glue understands these limitations and is providing a solution that is both new and innovative, elevating user experience and trust in the Glue Network by introducing essential services such as accessible support, quality assurance, and robust financial advisory solutions.

## Custody

Neo-banks, despite their modern interfaces and improved customer service, still suffer from a fundamental downside: they hold custody over the funds they manage on behalf of users. This centralised custody necessitates extensive regulations to ensure that user funds are protected, and while many of these rules are reasonable, they stem from the inherent risks associated with centralised control of assets.

Traditional banks and neo-banks are required to follow a myriad of regulations designed to protect user funds. These regulations are essential because users have limited visibility into how their funds are managed. The risk of theft, misappropriation, or mismanagement by the bank necessitates strict oversight and controls. This regulatory burden contributes to the high costs of banking services, often making them inaccessible to low-income individuals around the world.

Crypto offers a revolutionary solution to the custody problem by decentralising it. In the crypto world, custody is handled by the blockchain itself. This means:

**1. Transparency and Trust:** The blockchain provides a transparent ledger where all transactions are recorded and can be verified by anyone. This eliminates the need for users to trust a centralised entity with their funds.

**2. Reduced Regulatory Overhead:** Because the blockchain handles custody in a decentralised manner, many of the regulations designed to protect users from centralised mismanagement are no longer necessary. This significantly reduces the overhead costs associated with traditional banking.

**3. Global Accessibility:** By reducing the need for heavy regulatory compliance and centralised control, decentralised custody makes financial services more accessible to people around the world, particularly those in low-income regions who are often excluded from the traditional banking system.

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<sup>1</sup> Dhanraj Jaglan, NEO BANKS - The Rise of Banking Industry, International Journal of Management and Commerce Innovations, Vol. 9, Issue 1, 2021

<sup>2</sup> Elroy Monis, Ramesh Pai, Neo Banks: A Paradigm Shift in Banking, International Journal of Case Studies in Business, IT, and Education, Vol 7, Issue 2, 2023

<sup>3</sup> Somnath Sardar, Kavita Anjaria, The Future Of Banking: How Neo Banks Are Changing The Industry, International Journal of Management, Public Policy and Research, Vol 2, Issue 2, 2023



However, decentralisation alone does not address all user needs. While crypto has achieved decentralised custody, the lack of user-friendly services has hindered widespread adoption. Users still require the ease of use, customer support, and additional services that traditional banks provide.

Glue aims to bridge this gap by combining the best of both worlds:

**Decentralised Custody:** Ensuring that the security and transparency of user funds are maintained by the blockchain and DeFi protocols.

**Comprehensive Services:** Offering the same level of customer support, financial advisory, and insurance services that users expect from traditional banks.

By leveraging the decentralised nature of blockchain for custody while providing a suite of user-friendly services, Glue seeks to create a financial ecosystem that is secure, efficient, and accessible to all. This approach not only solves the issues inherent in traditional banking but also addresses the shortcomings of existing crypto solutions, paving the way for broader adoption and a more inclusive financial system.

## Services

For clarity's sake, Glue foundation does not intend to directly provide any kind of services. Having a centralised service infrastructure is a bad idea for various reasons and would transform the foundation into an operating entity instead of a vehicle that helps develop Glue.

Glue is committed to investing resources in attracting service providers. The foundation believes that having a credible revenue model will be game-changing, finally combining the security and transparency of on chain custody with the convenience and support of traditional financial services.

### How Glue Will Provide Services

The technology required to implement these services is straightforward. Glue will operate similarly to the Apple<sup>4</sup> App Store<sup>5</sup> model, enabling service providers to list their services for users to subscribe to. Crucially, the payment for these services is seamlessly handled by Glue itself, ensuring a streamlined user experience and robust support infrastructure. If users like a particular service or find it useful to them, they can subscribe to it. The payment process for these services is integrated into Glue, allowing for automatic and effortless transactions.

### Building a Third-Party Service Infrastructure

The Glue Network can significantly contribute to building a third-party service infrastructure, primarily by providing a robust revenue model. In traditional finance, whenever a credit card is used, a percentage of the transaction value is distributed among various service providers, who offer customer support, custody, float money, and insurance against fraud. This demonstrates that consumers are already accustomed to paying for such services. In the crypto space, there currently exists no practical method for implementing a similar revenue model. Although fee

sharing through smart contracts is theoretically feasible, it is often inefficient, offers a poor user experience, and imposes significant limitations.

In the Glue ecosystem, service providers are treated as a first-class priority, with revenue models natively built into the platform to cater to their needs. The system is designed to be entirely opt-in, allowing users to engage with Glue without incurring any service fees aside from gas fees. Furthermore, users can easily opt out if they are dissatisfied with the service, in stark contrast to traditional financial systems where cancelling services can frequently be challenging.

### Subscription Models

Glue offers multiple subscription models to cater to different needs and preferences. Which also allows service providers to offer various support packages, ranging from basic technical support to comprehensive customer service that includes handling complex issues and providing personalised assistance. Subscription models include:

**Monthly Fee:** Users pay a fixed monthly fee for continuous coverage or service.



Figure 1: Monthly subscription fee from user to service provider.

**Fee Per Transaction:** Users are billed a small fee for each transaction, providing flexibility and pay-as-you-go convenience.

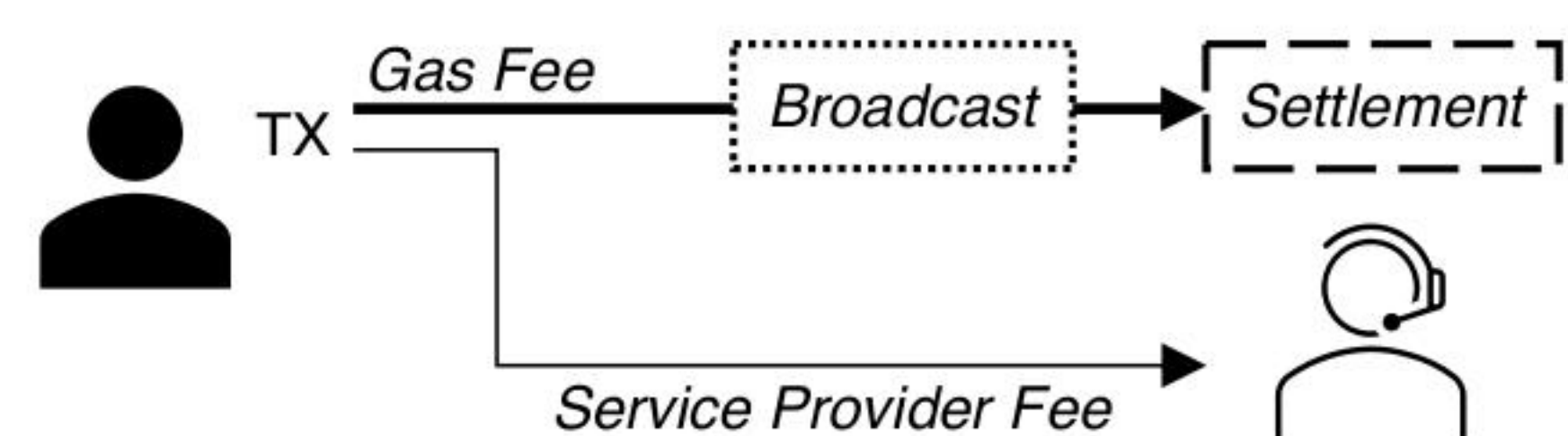


Figure 2: Each transaction has its own service provider fee that is charged independently to the gas fee of the transaction. This is a pay as you go service, hence there is no service provider fee if there are no transactions.

**Multiple of Gas Fees:** Service provider's fees can be tied to the gas costs of transactions, ensuring proportional costs relative to usage.

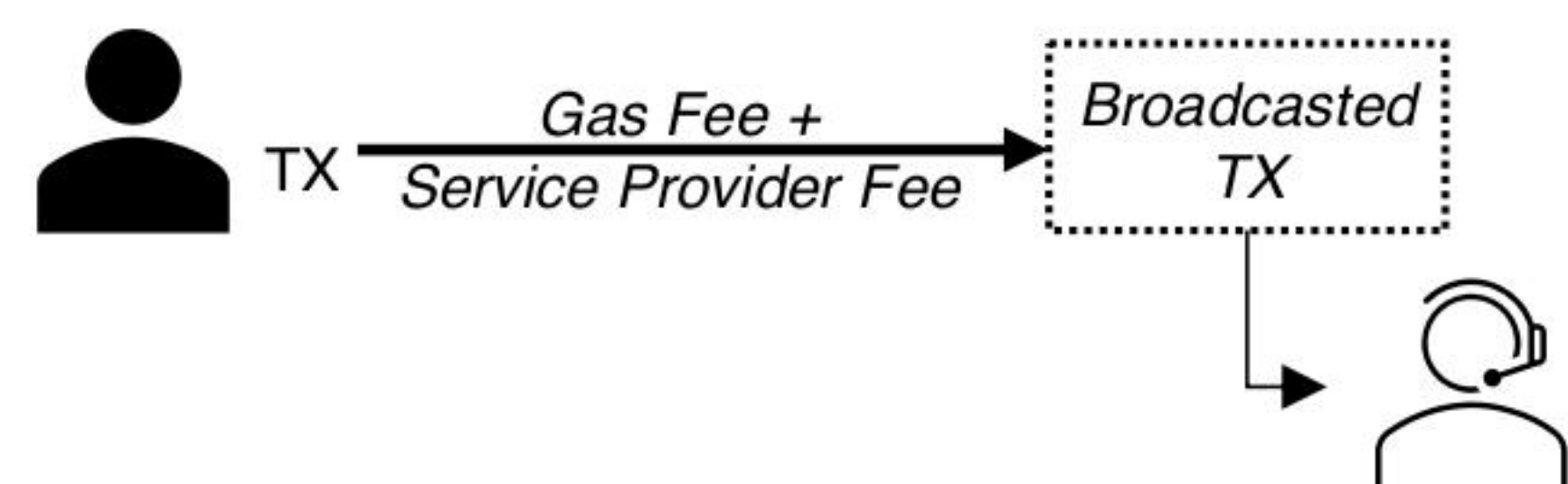


Figure 3: The gas fee will include the service provider's fee. Once the transaction is broadcasted and completed, the service provider will be paid their fee.

### Example: Customer Service

Consider a call center company looking to expand its revenue streams by offering customer support in the

<sup>4</sup> <https://www.apple.com/>

<sup>5</sup> <https://www.apple.com/app-store/>



crypto space. This company can list its service on Glue, charging a nominal fee, for example \$0.05 per transaction. Users who desire a certain level of customer service can opt into this service. Going forward, whenever these users conduct any transaction on Glue, the service fee is automatically added and sent to the service provider. There is no need for prefunded smart contracts or additional steps by the user. When a customer has a question or needs assistance, they can call the provider's customer service hotline. The service provider can verify if the user's address is opted into their service and then proceed to help the customer, for example, by assisting in retrieving "lost" coins.

#### **Other Service Examples**

This model is versatile and can apply to a variety of services within the ecosystem, such as:

**Insurance Providers:** An insurance provider could charge a percentage of the transaction fee to offer coverage against fraud or loss.

**Premium Wallets:** Premium wallet providers could charge a monthly subscription fee for enhanced security features or additional functionalities.

**Loan Management Services:** Borrowing and lending are fundamental activities in decentralised finance but managing loans can be complex and risky. Service providers specialising in DeFi loan management could offer tailored solutions to help users optimise their borrowing strategies, manage loan collateral, and automate loan repayments.

#### **User Flexibility**

Glue offers users the flexibility to select services *a la carte*, making it more efficient than traditional finance where services are often bundled with custody. If a user is dissatisfied with their current customer support, they can easily switch to a better provider. Should a user decide to opt out of a service entirely, they can do so on chain without the hassle of contacting the provider directly.

#### **A New Standard for DeFi**

One of the key decisions in not building Glue on a traditional Layer 1 blockchain and devoting considerable resources in building Glue as a new Layer 1 was to enable these types of small but strategically meaningful innovations. The ability to integrate such services seamlessly required a fully integrated stack, something that could not be achieved on a blockchain lacking these features. These small changes in both technology implementation and strategic vision result in a significant impact, making Glue a pioneering force in the DeFi space. DeFi as a major use case of blockchain technology has suffered a great deal due to the absence of basic services. Glue is not just another blockchain project; it is a holistic ecosystem designed to bridge the gap between traditional financial services and decentralised finance. By focusing on the needs of retail users and providing the services they expect, Glue is poised to drive mass adoption and set a new standard for what a blockchain ecosystem can achieve. Glue's commitment to user experience, coupled with the

integration of essential services, positions Glue as the leading choice for users seeking a reliable and efficient DeFi solution and sets up the entire ecosystem to compete and prove its advantages over the traditional banking system.

#### **Final Words**

Glue's approach to integrating comprehensive services into the blockchain is a game-changer. It addresses the fundamental shortcomings of existing DeFi solutions and provides a clear path toward mass adoption. By focusing on user needs and leveraging the inherent advantages of blockchain technology, Glue is set to revolutionise the DeFi landscape and attract a much broader audience than any other Layer 1 ecosystem.



# Glue network:

Governance



# Glue Network: Governance

## Abstract

This white paper outlines Glue's unique approach to fundraising, governance, and operational decentralisation. We delve into the rationale behind our capital efficiency, the structure of our token allocations, and the mechanisms by which our decentralised treasury management empowers the community. Unlike traditional Layer 1 networks that often rely on centralised foundations with opaque operations and misaligned incentives, Glue has devised a novel strategy that emphasises community-driven decision-making and effective resource allocation. Our focus on incremental capital raises and strategic use of unallocated treasury tokens ensures that funds are deployed judiciously, driving meaningful growth and innovation without the pitfalls of excessive centralisation. By adopting a multi-entity model, Glue ensures that control remains with the token holders, creating a collaborative and dynamic environment that supports the long-term success and stability of the network.

## Governance and Treasury Management

### The Glue Approach to Fundraising

Glue's primary goal is to achieve capital efficiency, raising only the amount of money necessary to reach each developmental milestone and ensuring that funds are spent judiciously. This approach contrasts sharply with the prevalent trend in the crypto industry, where projects often raise absurd amounts of money from venture capitalists (VCs) simply because they can. While such funding can provide immediate financial support as well as increases in short term token prices, it near inevitably leads to long-term problems, including misaligned incentives, concentrated control, and market instability as large token holders seek to sway elections for their own benefit and exit their positions.

At Glue, we are committed to avoiding these pitfalls by advancing a broadly distributed token ownership. Our fundraising strategy is designed to support this commitment. By focusing on incremental capital raises, we ensure that every dollar is used effectively and efficiently, avoiding the pressures and risks associated with overfunding.

In essence, Glue's approach to fundraising is about more than just securing capital; it's about building a sustainable, decentralised, and resilient ecosystem. By raising funds incrementally and ensuring a fair distribution of tokens, we are setting the stage for long-term success and stability. This careful and strategic approach to capital management underscores our commitment to creating a truly decentralised financial system that can achieve widespread adoption and deliver on the transformative promise of blockchain technology.

### Summary of Glue's Capital Raising Efforts

#### Initial Capital Raise

Glue's first capital raise concluded in early 2022, marking a significant milestone in the development of our decentralised financial ecosystem. This initial round was spearheaded by the two founders, each contributing \$500,000 at the same terms as all other contributors in the round. In addition to the founders, including SnapShot<sup>1</sup>, a member of the Young Presidents Organization<sup>2</sup> (YPO), approximately 20

high-net-worth individuals, mostly YPO members, participated. They collectively contributed an additional \$1.5 million, bringing the total capital raised to about \$2.5 million. The largest contribution besides the founders was \$250,000, hence, there are no seed stage whales. The terms of this initial fundraising round were straightforward: contributors received a 30% discount on the price of tokens in the subsequent fundraising round. The expectation at the time was that the next round would occur relatively soon and would follow a more traditional pricing structure. However, market conditions, particularly the onset of a bear market, influenced the timing and structure of the subsequent round, which ultimately took the form of a Liquidity Bootstrapping Pool (LBP).

While the founders contributed significantly to the initial capital raise, they also received founder tokens as recognition for their work in establishing the network. The specifics of these founder tokens will be detailed later in this document and are at different terms than the seed tokens.

An important aspect of our capital-raising strategy is the absence of lockups for the initial contributors. We believe in promoting free and fair trading of tokens without the constraints of massive lockup cliffs. Lockup periods often lead to market distortions and can easily be circumvented through mechanisms such as short positions, rendering them ineffective and frequently misleading. By avoiding lockups, we aim to create a more transparent and equitable environment, allowing market forces to operate naturally and efficiently. This is of course only possible because we didn't raise huge amounts of money early at discounts so large that it would imperil the entire project as many others did.

#### Second Capital Raise

The second round of capital raising was conducted in April 2024. As the crypto market began to heat up, the founders decided that an LBP would be an ideal mechanism for a bridge round to fund expenditures before the main token-generating event. Despite its name, Glue did not use the LBP to bootstrap liquidity. Instead, we utilised the Fjord<sup>3</sup> Platform to conduct the LBP to raise capital. This mechanism was chosen for its openness, fairness, and transparency, ensuring

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<sup>1</sup> Glue Founder and Young Presidents' Organization Member - [https://twitter.com/Ox\\_SnapShot](https://twitter.com/Ox_SnapShot)

<sup>2</sup> <https://www.ypo.org/>

<sup>3</sup> <https://www.fjordfoundry.com/>



that everyone had equal access and terms, with no preferences or special deals. Over 300 individuals participated in this round, contributing a total of \$2.5 million worth of ETH. The pool was closed early once our fundraising goal was met. The highest price paid during this LBP was \$1.447 per token. This approach ensured a broad distribution of tokens and avoided the pitfalls of large, concentrated holdings by a few entities, aligning with our goal of promoting a decentralised and community driven ecosystem.

## Valuation and Token Distribution

### Fjord LBP and Market Valuation

The Fjord LBP set a market-based price for Glue tokens, resulting in a final fully diluted valuation (FDV) of \$1,447,000,000 for the Glue Network. This LBP was the first round that established a market price for the tokens and consequently a conversion rate for the seed stage contributions.

### Conversion and Fair Treatment of Seed Stage Contributors

To calculate the discount for seed stage contributors, we took the bottom decile of prices paid during the LBP and applied the agreed 30% discount. This approach ensured that early contributors were adequately and fairly compensated for their patience, having waited over two years for their returns. The calculated conversion price for seed contributors was \$0.253 per token.

### Token Owner Table and Distribution

The outcomes of these fundraising efforts and conversions have resulted in the following distribution for Glue's token ownership:

#### 1. Seed Contributors:

- Total Contribution: \$2.5 million
- Conversion Price: \$0.253 per token
- Total tokens sold: 9,881,422
- Percentage of total supply: 0.99%

#### 2. LBP Contributors:

- Total Contribution: \$2.5 million
- Average Price: \$0.668 per token
- Total tokens sold: 3,738,525
- Percentage of total supply: 0.37%

Additionally, some expenses were paid in tokens, amounting to approximately \$500,000 at the seed pricing of \$0.253 per token, ensuring fair compensation for services rendered during the early stages of the network's development.

#### 3. Other Expenses Paid in Tokens:

- Expected Total Contribution: \$500,000
- Conversion Price: \$0.253 per token
- Total Tokens sold: 1,976,284
- Percentage of total supply: 0.20%

Total tokens sold to date: 15,596,231 which is approximately 1.57% of total supply.

The above maths will not be exact as there are final expenses to be accounted for, but it will be within a 10% margin of error.

## Founders Tokens

To align the interests of the co-founders with the long-term success of Glue and to reward them for their foundational work, 15% of the network's total tokens have been set aside as founder tokens. These tokens are subject to a vesting schedule designed to ensure commitment and sustained contribution over time. The founders have committed to the spirit of this vesting arrangement. Additionally, they have agreed not to engage in any over the counter (OTC) sales, hedge the price of the token, or use any other mechanisms to circumvent the lockup period. By structuring the founders' token allocation in this manner, Glue ensures that the leadership remains aligned with the interests of the broader community. The founders' vested interest in the success of the network, combined with their active participation in governance, provides a solid foundation for sustainable growth and development.

### Vesting Schedule

The founder tokens will vest over a period of five years, with a one-year cliff. This means that during the first year, no founder tokens will be available for sale. After the initial year, the remaining tokens will be unlocked linearly over the subsequent four years. This vesting schedule is structured to incentivize the founders to continue their active involvement in the development and growth of the network.

### Founder Voting Rights

While their tokens are vested, they retain full voting rights. This allows the founders to participate in governance decisions, contributing their expertise and vision to the strategic direction of the Glue Network. The ability to vote ensures that the founders remain engaged and invested in the success of the project, even as their tokens are locked.

### Foundation Allocation

In the genesis block, 10% of the total token supply will be allocated to the Glue foundation. The foundation is tasked with executing the main sale as well as the token generating event. While the specific details are still to be finalised, it is anticipated that up to 5% of the total token supply may be sold in the next sale. However, this percentage is subject to change based on market dynamics and the strategic needs of the Glue Network.

### Utilisation of Foundation Tokens

The remaining tokens allocated to the foundation will be used for several key purposes:

**1. Market Maker Incentives:** To ensure liquidity and stability in the market, the foundation will allocate a portion of its tokens to incentivize market makers. This will help maintain a healthy trading environment, reduce volatility, and ensure that users can buy and sell tokens with minimal slippage.

**2. Operational Funding:** The foundation will use its token allocation to fund its operations, including ongoing development, marketing, community engagement, and other essential activities. This funding is crucial to support the continuous growth and evolution of the Glue ecosystem.



By strategically allocating tokens to the foundation, Glue ensures that it has the necessary resources to execute its vision and maintain a robust and dynamic ecosystem. The foundation's role in managing token sales and funding operations is vital to the long-term success and sustainability of the network. This structured approach to token allocation reflects our commitment to transparency, efficiency, and strategic growth.

### Genesis Token Allocations

The maximum supply of Glue tokens is capped at 1,000,000,000. This token is non-inflationary, meaning that there will never be more than 1 billion Glue tokens in existence. Summarising the various allocations described above, the initial distribution of Glue tokens in the genesis block will be as follows:

#### - Seed Contributors: 0.99%

These tokens are allocated to the early contributors who provided the initial funding at a discounted rate.

#### - LBP Contributors: 0.37%

Tokens allocated to participants in the Liquidity Bootstrapping Pool, reflecting their investments at market rates.

#### - Other Expenses Paid in Tokens: 0.20%

These tokens were used to compensate for various services and expenses incurred during the early stages of development.

#### - Founders Allocation: 15%

Tokens allocated to the founders, vested over five years with a one-year cliff, ensuring their continued commitment and alignment with the network's success.

#### - Foundation Allocation: 10%

Tokens allocated to the Glue foundation, intended for managing token sales, market maker incentives, and operational funding.

This brings the total allocated portion to 26.56%. The remaining tokens will be held in the on chain treasury, representing 73.44% of the total supply. This unallocated portion will be crucial for future growth, development, and strategic initiatives, ensuring that Glue has the flexibility and resources needed to achieve its long-term vision.

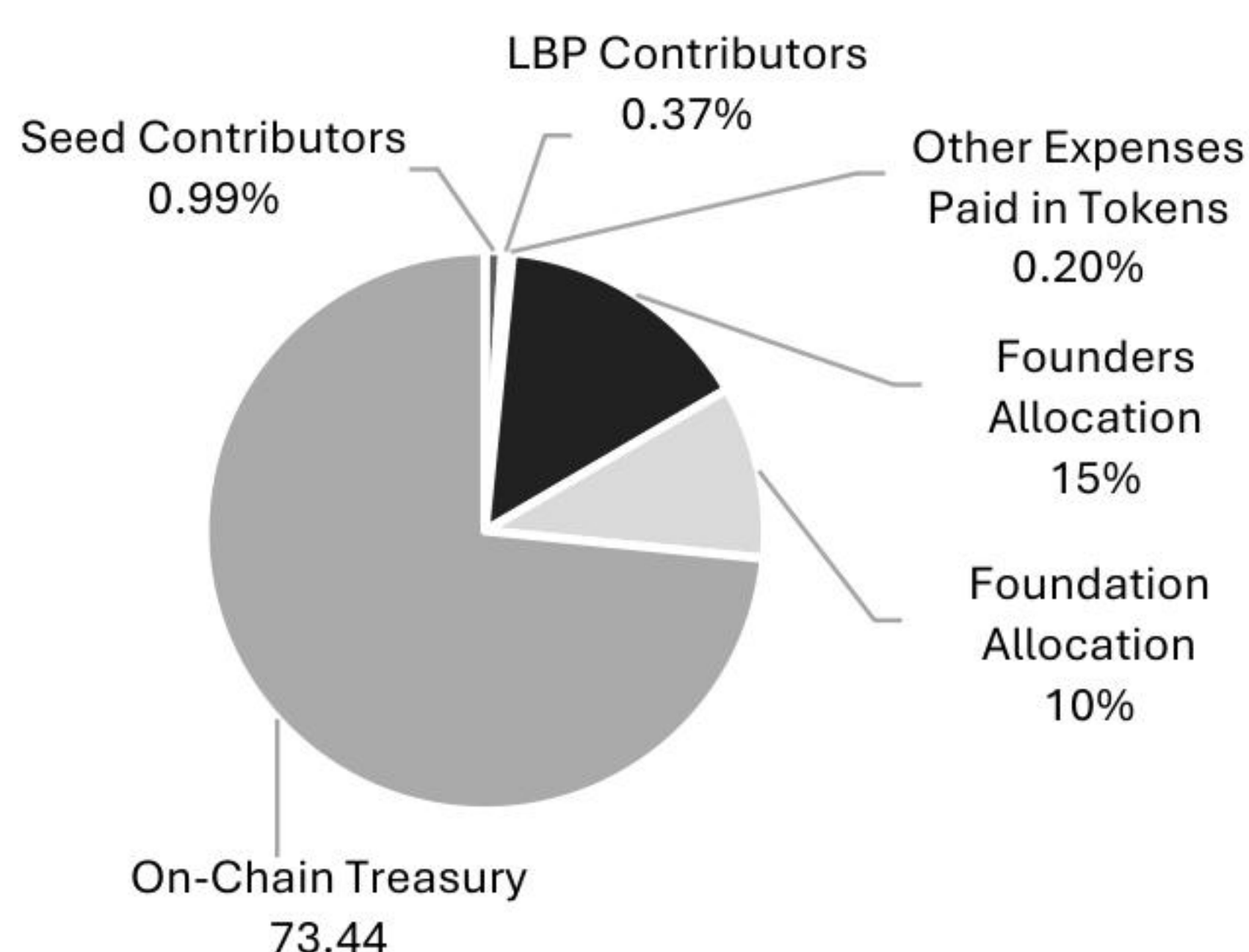


Figure 1: Genesis token allocation.

## Strategic Capital Allocation and Future Growth Plans

This approach to our capitalization table is indeed unusual for a Layer 1 blockchain (with Layer 2 solutions) that is on the cusp of launching its mainnet. We have received numerous inquiries about our decision not to raise large amounts of venture capital, and the answer is straightforward: we simply didn't need to. By being capital efficient and leveraging open-source technology effectively, we have managed to maintain one of the cleanest token tables in the industry.

### Capital Efficiency and Strategic Reserve

One of the key benefits of our capital efficiency is the substantial reserve of tokens we have retained. This reserve is crucial for our ambitious future plans. To truly scale and drive mass adoption, Glue requires significant budgets and financial resources. Our growth strategy is heavily focused on mergers and acquisitions, a plan we have been formulating for several years. With adequate capital, we aim to acquire companies that can accelerate Glue's growth and facilitate real user adoption at an unprecedented rate.

### Growth Strategy and User Acquisition

In addition to our acquisition strategy, we have comprehensive plans for extensive user acquisition campaigns. These campaigns are designed to incentivize users to migrate from centralised exchanges to Glue, highlighting the benefits of decentralisation, security, and superior user experience. Executing these campaigns effectively will require a substantial budget. Our capital-efficient approach ensures that we have the necessary funds reserved for these critical initiatives.

### The Bigger Picture

While our capital efficiency might seem unconventional in the current crypto landscape, it serves a strategic purpose. Launching our technology is just the beginning for Glue, not the end state. The real work lies in executing our broader vision, which includes aggressive growth strategies and large-scale user acquisition efforts. We are committed to building a robust, user-centric ecosystem that drives widespread adoption and sets new standards in the blockchain industry. By maintaining a clean and efficient capital structure, we are well-positioned to allocate resources effectively and drive the long-term success of Glue. This approach not only ensures financial stability but also aligns with our mission to create a truly decentralised and community-driven network. The decisions we have made so far are just the first steps in a comprehensive strategy designed to achieve sustained growth and industry leadership.

## Governance and Allocation of the On Chain Treasury

Given the above distribution, the most crucial allocation is, of course, the unallocated / on chain treasury portion and how this allocation is governed.



## Avoiding Traditional Pitfalls

One of the core issues in the cryptocurrency sector is the excessive power and centralisation associated with the foundations of Layer 1 protocols. Typically, these foundations receive disproportionately large Genesis allocations. While such allocations facilitate significant investments, historical evidence demonstrates that this approach is ineffective. In contrast, our allocation strategy ensures that the Glue foundation will exhaust its funds within 12-24 months.

### The traditional widely adopted foundation model, presents several inherent problems:

**1. Centralised Control:** Foundations often end up with excessive power and control. The decision-making process is usually opaque, with founders appointing board members who are loyal to them, ensuring perpetual control. This centralisation stifles innovation and accountability, as the founders can never be fired, no matter how incompetent or poorly they perform.

**2. Opaque Operations:** The operational and decision-making processes within such foundations are often not transparent. This lack of transparency prevents the community from understanding how decisions are made and whether they align with the best interests of the network.

**3. Perpetual Control:** When all funds raised in the main sale and the entire token treasury are controlled by the foundation, it essentially holds perpetual control over the network. This setup is problematic because it allows founders to remain in power indefinitely, with no mechanism for accountability or removal.

**4. Incentive Misalignment:** Foundation boards are often incentivized to hoard assets rather than deploying them for network growth. They prefer to sit on the funds to ensure their salaries and positions are secure, rather than using the resources to drive development and adoption.

Overall, we believe that the traditional foundation setup is unsustainable, lacks transparency, and fails to provide accountability. Therefore, we have chosen a different path for Glue.

## Decentralised Treasury Management

### A Truly Decentralised Treasury

Glue's approach to treasury management leverages its ability to change code through runtime upgrades, allowing for a genuinely decentralised treasury. Unlike most projects that use a multi-signature approach where votes are merely advisory, Glue ensures that the unallocated tokens are held in an on chain address that no individual or entity controls or even owns. Funds can only be moved out of this address through governance votes by all Glue token holders.

### Governance and Budget Proposals

Moving forward, the foundation will propose budgetary governance votes, typically major packages every six months, with some smaller urgent items addressed more frequently. This structured

approach ensures that the most crucial function of governance is to decide which projects to fund. For example, a governance vote might include proposals such as:

- Issuing 2,000,000 tokens to SnapShot Co, for developing a ZK Layer 2 solution.
- Allocating 1,000,000 tokens to Ogle<sup>4</sup> Co. as a security budget for tracking and mitigating potential exploits.

This semi-annual budgeting process ensures that if the foundation or any founder is not performing adequately, the network can effectively "fire" them by halting further operational funds. Since the entire treasury isn't pre-allocated and permanently tied to the foundation or the founders, there is a continuous incentive for the foundation and board members to both communicate and perform well for token holders to secure renewed budget allocations.

### Governance Through Budgeting

Governance through budgeting will be a core tool for Glue's future growth. For example, a governance proposal could allocate 3,000,000 tokens to an entity to purchase a company with a significant number of credit card terminals. This acquisition could enable the Glue Network to implement a Point-of-Sale credit card solution, driving further adoption. However, such initiatives will only proceed if Glue token holders vote in favor. This model ensures that the foundation's initial allocation is designed to deplete relatively quickly, making the foundation and founders accountable to token holders for their performance. By tying the renewal of operational funds to governance votes, Glue ensures that the foundation remains focused on delivering value to the network and its stakeholders.

### Section Summary

By adopting a decentralised treasury management approach, Glue empowers its community with real control over the network's financial resources. This system not only fosters transparency and accountability but also ensures that funds are used efficiently and strategically to drive long-term growth and innovation. The combination of runtime upgrade capabilities and community-driven governance positions Glue as a pioneer in creating a truly decentralised and resilient financial ecosystem.

## A Multi-Entity Approach

### Decentralising Operations and Control

One critical advantage of Glue's governance and treasury management approach is that it facilitates a more decentralised, multi-entity structure. Most Layer 1 networks are operated by a single, centralised entity, often leading to issues of control and lack of accountability. Our goal is to avoid this centralisation and instead promote a diverse and decentralised operational framework.

### Proposed Structure

The Glue foundation will initially serve as the primary entity, but as the network and its staff grow, multiple

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<sup>4</sup> Glue Founder - <https://twitter.com/cryptogle>



entities should emerge. These entities will be funded directly by the network through governance votes, ensuring that control remains with the token holders rather than being concentrated within the foundation. Future budget allocations to the Glue foundation should therefore be relatively minor.

## **Future Role of the Glue Foundation**

### **1. Setting the Roadmap**

One of the most crucial functions of the foundation will be to set the overall roadmap for the network. Every six months, the foundation should release key focus areas for the network. This roadmap will help align efforts across the network, although entities are of course free to pursue their own initiatives if they choose. For example, in an initial six-month cycle, the foundation could propose three main focuses: acquiring 250,000 users, developing a ZK Layer, and launching a major initiative to fund Service Layer companies.

### **2. Public Comment and Consensus**

The proposed roadmap will be open for public comment and amended as necessary to achieve consensus. This iterative process ensures that the roadmap reflects the collective vision of the community and stakeholders. Competing roadmaps could easily emerge as well.

### **3. Soliciting Bids**

Once consensus on the roadmap is achieved, the foundation will solicit bids for work that is relevant to hitting its goals. For example, an advertising agency might propose a \$5,000,000 budget to acquire 250,000 users. The foundation's role will be to solicit, compare, and analyse these bids, then publish their findings. However, the actual funding will be determined by a token holder vote.

### **4. Global Voting**

The global votes will focus on major line items to keep the process manageable. Initially, this should be relatively straightforward. The foundation will advocate for the proposed investments, attempting to convince token holders of their merits. Successful votes will result in the funds being dispersed via runtime upgrades, allowing entities to execute the plans. Traditional contracts will likely be managed by the foundation to ensure legal accountability for the service providers.

### **5. Ongoing Evaluation and Adjustment**

This process will be cyclical. If an advertising agency excels, perhaps acquiring 400,000 users instead of the targeted 250,000, the foundation will likely propose extending their budget in the next vote. Conversely, if a service provider developing the ZK Layer 2 underperforms, they will be unlikely to receive future grants.

### **Achieving True Decentralisation**

This multi-entity approach will drive genuine decentralisation. Unlike traditional networks where centralised foundations dominate operations regardless of how decentralised the technology is, Glue will progressively involve more entities in the

network's growth and development. By decentralising both the technology and the operations, Glue ensures that its ecosystem remains robust, dynamic, and truly community driven.

## **Near-Term Plans**

While we cannot predict the exact content of the first governance votes nor of course if they will pass, we anticipate that they will include several key proposals critical for the initial growth and stability of the Glue ecosystem.

### **Allocation for Liquidity Incentives**

Ensuring meaningful liquidity within the Glue ecosystem is essential for a seamless user experience. We will propose an allocation of Glue tokens to provide liquidity incentives across various protocols on the network. These incentives are designed to attract liquidity providers, ensuring that users can transact with minimal slippage and enjoy a robust, dynamic marketplace.

### **Allocation for User Acquisition and Branding**

Building the Glue brand and attracting users is paramount to our long-term success. We expect to propose allocating funds to an advertising agency to spearhead a comprehensive branding campaign and a direct response user acquisition effort. This initiative aims to raise awareness of Glue, highlight its unique advantages, and drive substantial user growth from the outset.

### **Investment in Technology**

To maintain our position as a leader in blockchain technology development, we will advocate for a significant budget dedicated to advancing Glue's technological capabilities. This includes ongoing research and development, improving existing protocols, and exploring innovative solutions to enhance the network's functionality and scalability.

### **Commitment to Security**

A cornerstone of Glue's value proposition is providing a superior user experience through enhanced security. The initial budget proposal will include a substantial allocation to one or more security providers. This investment will ensure that the network remains secure, resilient, and capable of protecting users' assets and data.

### **Ongoing Adaptation**

The above list represents our current priorities but is neither exhaustive nor definitive. As Glue continues to evolve, the specifics of our budget proposals will adapt to the network's needs and the community's feedback. Our governance model is designed to be flexible and responsive, ensuring that resources are allocated where they can have the most significant impact.

The initial governance votes will set the tone for our decentralised approach, demonstrating our commitment to transparency, efficiency, and community-driven development.



## **Addressing Potential Concerns and Educating Token Holders**

### **The Challenge of Flexible Allocation**

One inherent risk in Glue's approach to governance and treasury management is the uncertainty surrounding how token holders will perceive and react to this flexible and decentralised model. Historically, token holders often demand a clear, predefined allocation of tokens for the foreseeable future. This has become the norm, even though it significantly restricts a network's ability to adapt and respond to changing circumstances.

### **The Need for Education**

To successfully implement Glue's innovative approach, we must educate token holders on the benefits of a flexible, decentralised treasury. Token holders need to understand that they effectively "own" a share in the unallocated tokens and that these tokens are not a threat to the token price. Instead, they represent a pool of resources that can be strategically deployed to enhance the network's value and drive long-term growth.

### **Addressing Concerns**

Some token holders may initially be concerned about the potential impact of unallocated tokens on the market. It's crucial to communicate that these tokens are subject to governance votes, ensuring that any future distributions are made with careful consideration of their impact on token supply and market dynamics. Token holders have the power to vote on how these tokens are used, including the theoretical option to burn them. While burning the treasury tokens might provide a short-term boost to the token price, it would be a short-sighted move that undermines Glue's long-term potential. The focus should be on using the treasury to fund initiatives that drive adoption, innovation, and network value.

### **Guiding Future Allocations**

To maintain a healthy and productive governance process, it is essential to avoid allocating large tranches of tokens for non-productive or vague purposes such as "community development" without clear, actionable plans. Instead, each proposal should be evaluated on its potential to increase token float, enhance utility, and drive meaningful growth.

By fostering a well-informed and engaged community, Glue can leverage its decentralised treasury to support strategic initiatives that align with the network's long-term vision. This approach not only preserves flexibility but also empowers token holders to actively participate in shaping the future of Glue.

### **Section Summary**

Educating token holders about the benefits and responsibilities of Glue's governance model is critical to its success. By understanding the value of a flexible, decentralised treasury, token holders can make informed decisions that support the network's growth and sustainability. This collaborative approach ensures that Glue remains dynamic, resilient, and capable of adapting to the evolving landscape of blockchain technology.

## **Final Words**

Glue's innovative approach to governance, treasury management, and decentralised operations marks a significant departure from traditional blockchain models. By prioritising capital efficiency, transparency, and community-driven decision-making, we are building a resilient and sustainable ecosystem designed for long-term success. Our strategy of incremental capital raises ensures that funds are utilised effectively, avoiding the common pitfalls of overfunding and centralised control. The structured token allocations, including a substantial unallocated treasury, empower the community to direct the network's growth through governance votes. This model fosters accountability and performance-based leadership, aligning the interests of all stakeholders. The multi-entity approach, with a diminishing reliance on a single foundation, promotes genuine decentralisation. By involving multiple entities funded directly by the network, Glue ensures diverse participation in its development and operations. This structure not only enhances transparency but also drives innovation by allowing various entities to contribute to the network's roadmap and execute strategic initiatives.

Glue is more than just a technological advancement; it is a paradigm shift in how blockchain networks can be managed and grown. By combining the strengths of decentralised governance with strategic resource allocation, Glue is well-positioned to lead the next wave of blockchain innovation. Our commitment to building a truly decentralised and community-driven network sets the stage for widespread adoption, transforming the financial landscape and fulfilling the revolutionary potential of blockchain technology.