Glitch Protocol // Ecosystem

The Technical Whitepaper
April 2021

Important notice

This Technical Whitepaper supersedes the Glitch Whitepaper dated October 2020, which was previously available for download on our website.

The documents Whitepaper 2.0 dated 4th April 2021 and the Glitch Business Pitch Deck (collectively the “Glitch Business Documents”)

Glitch Finance

Blockchain technology was first introduced as a single-use ledger for the Bitcoin digital currency in 2008. Since then, the technology has been generalized for multi-purpose use through innovations such as smart contracts, and increasingly complex financial systems have been constructed based on blockchains. However, decentralized currencies secured using blockchain have so far failed to replace traditional currencies on a large scale.

Critically, existing chains like Ethereum can only process several dozen transactions per second. Even operating systems built to scale, like EOS, are capable of just a few thousand transactions per second. By comparison, centralized financial markets process tens of thousands of transactions per second. Thus, there is a dire need for a highly scalable blockchain operating system that focuses specifically on facilitating the financial activity.

Such a system must handle millions of active users while still providing a high-quality user experience. Low latency both in transaction processing and in user interfacing applications is necessary to attract and retain users. Moreover, a successful blockchain operating system must be free for users in order to encourage widespread adoption.

To that end, GLITCH is a blockchain-based operating system purpose-built for money market decentralized applications (dApps) and decentralized financial activity. In contrast to existing blockchain ecosystems, GLITCH is not intended to be a jack-of-all-applications. Rather, its underlying structure and customizations are focused exclusively on decentralized finance (DeFi) applications.

Sean Ryan
CEO Glitch Finance

Summary

Glitch Finance is working to create the platform the DeFi industry is missing, providing low entry barriers for both everyday users and developers looking to extend products and services beyond their current user base. Phase one of the project will focus on building a suite of Sibling dApps built for purpose to offer unparalleled blockchain UX along with a unique consensus structure that incentivises the network with a potentially unlimited reward value structure.

• GLITCH approaches scaling from layer 1 through low-latency, high throughput transaction processing.

• GLITCH utilizes a decay DPOS voting system, where voting power lessens with time to ensure fair governance.

• GLITCH incentivizes community support through a revenue-sharing model that guarantees low network fees for users.

Upon launch, Glitch Finance will present the core GLITCH platform and two Sibling dApps GEX and xBRIDGE.

Glitch technology

Product overview

Our project has a long time horizon with a set of key milestones intended to get us to the ultimate objective: being a fully encompassing DeFi OS. The Glitch value proposition is based on the introduction of a functionally appropriate blockchain that addresses current DeFi speed issues. We plan to do this via proof of stake and a consensus modification to the protocol that ensures true network decentralisation and security. When combined with our revenue share system, powered by smart contracts, the resultant ecosystem provides a scalable platform that addresses the evasive blockchain trilemma.

Platform

The GLITCH blockchain is written in capitals to emphasise its importance to the platform. What follows is a summary of its core characteristics that cement it as the cornerstone of Glitch Finance’s vision.

The core libraries upon which our blockchain operating system is built come from Tendermint. The innovative modifications come in the form of the consensus mechanism and how it ties to the broader revenue rewards system.

The basics

Consensus protocol: GLITCH relies on a Delegated Proof of Stake (DPoS) protocol that's modified to ensure the pooling of control is avoided.

Validators: the witnesses (blockchain nodes) are voted in to validate the blocks on the chain, and with GLITCH, all witnesses are the same.

Virtual Machine: GLITCH's virtual machine is similar to the Ethereum Virtual Machine (EVM), thus providing some familiarity to developers.

Smart Contract (SC) core languages: we decided to use the most common SC languages — GoLang, javascript, or a developer can write in any language they prefer.

Ecosystem

The GLITCH Ecosystem relies on some critical functionality carried out by a group of core smart contracts. The thinking behind the system's architecture is to keep it simple so that it's easily understood and secure. In addition to the blockchain itself, the ecosystem includes the GEX decentralized exchange, a browser extension wallet, and an explorer with a governance interface.

The GEX is a permissionless, peer-to-peer engine that enables users to trade assets quickly, cheaply, and securely — bringing unprecedented speed and low transaction costs. The GEX focuses on real-time settlement and is supercharged by running on a faster chain.

dApps

dApps are critical to Glitch, and we've put considerable thought into how we should approach them holistically. In the end, the way dApps are designed to work within the ecosystem (eg. dynamic, loose or firm rules around white-labeling addresses) came down to what role they play in DeFi and how they should be shaped by the key stakeholders. In this picture, we see there being three key stakeholders: users, developers, and enablers.

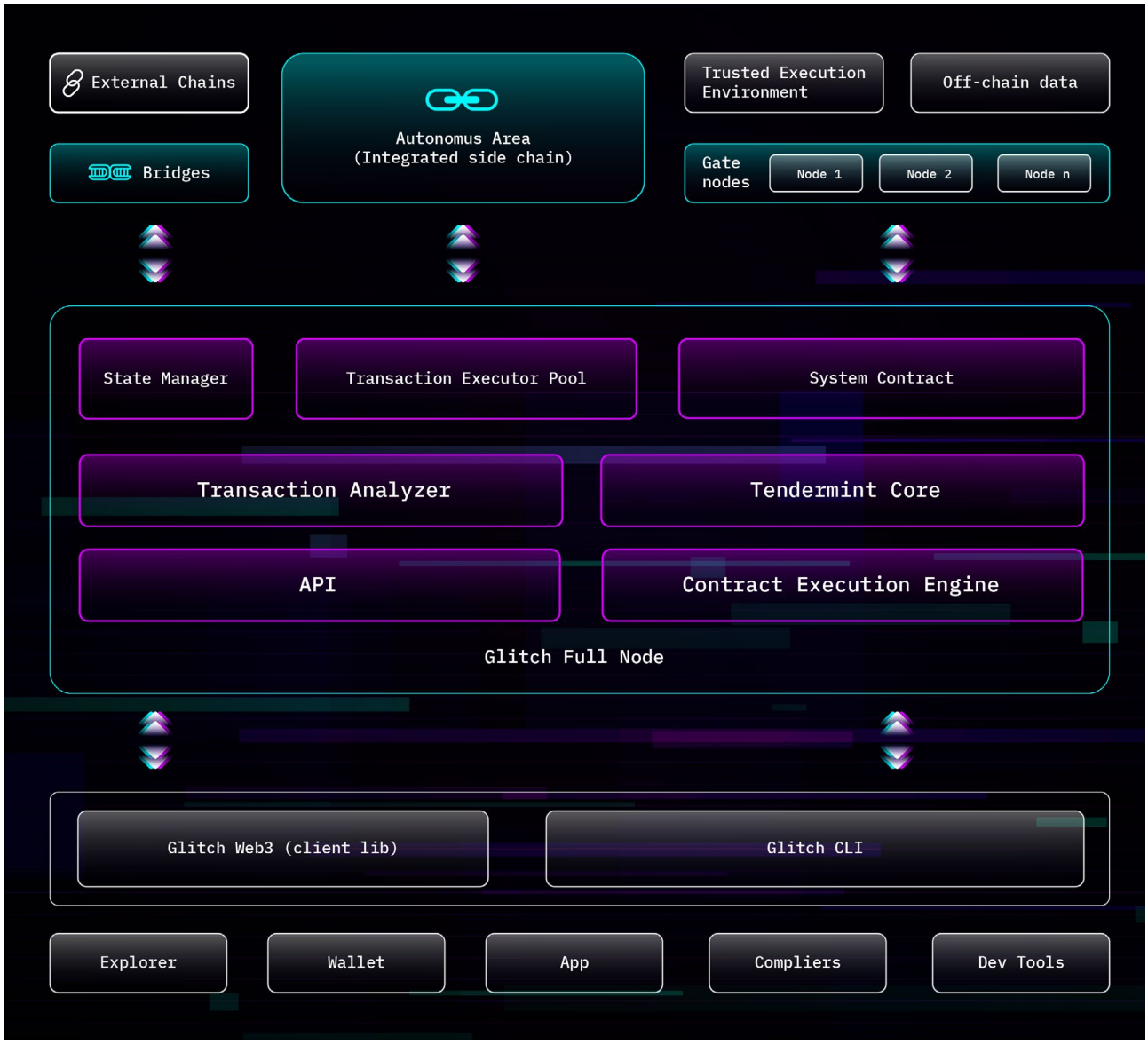
With these particular groups' requirements in mind, we aim to deliver high functionality, transparent and easy to use and understand touchpoints through AYFT (at your fingertips) information, a beautiful and intuitive UI/UX, and economically viable, safe interactions.

We will achieve this by supporting some of the most popular code languages for smart contracts, low code solutions, grants, extremely low fees, translation programs with video content API-rich platforms, and an ever-growing set of libraries designed with utility in mind.

Technical overview

Protocol

Tendermint's modular open-source software has proven to be a reliable core for blockchain application platform development. Tendermint emerged from popular cryptocurrencies such as Bitcoin, Ethereum, etc. The goal of Tendermint is to provide an efficient and secure consensus algorithm. In general, Tendermint consists of two main technical components: a blockchain consensus engine and a generic application interface. The consensus engine, called 'Tendermint Core,' broadcasts the transactions between nodes to ensure that the same transactions are recorded on every machine in the same order. The application interface, called the 'Application BlockChain Interface (ABCI),' enables the transactions to be processed in any programming language.

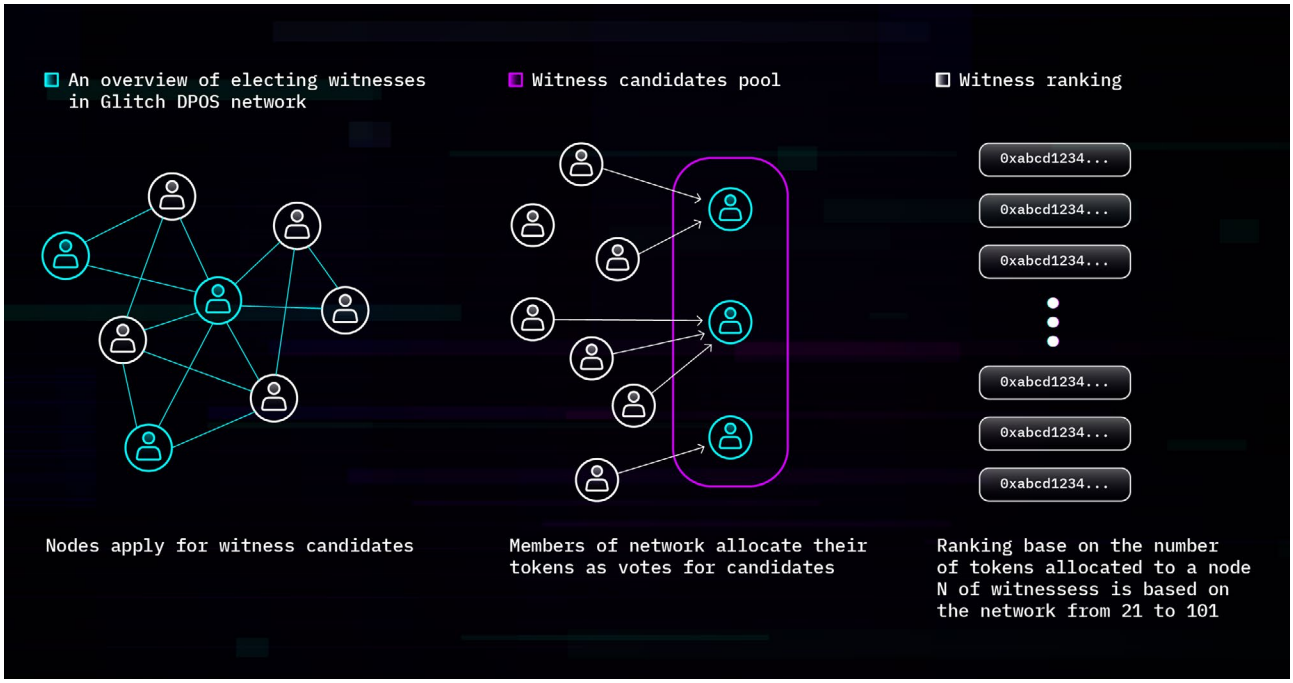


DPoS consensus

As mentioned above, we've chosen DPoS consensus for GLITCH. Our DPoS is simple and works in three layers. The delegates are GLCH token holders and vote on candidates to be network validators. Validators can also vote for themselves by staking their GLCH.

Any members in the network can propose a minimum amount to be a candidate through the DAO protocol.

The top 21 candidates by ranking of voting power will become the 21 validators. Voting power is the total amount of staked GLCH of a validator. The election will occur during an epoch until the new committee of validators is updated at the end of an epoch by the Endblock message. All of the data is processed by Tendermint ABCI. Note that the amount of GLCH staked for voting elections will be locked for the duration of the epoch which has the duration of proposing 30 blocks.



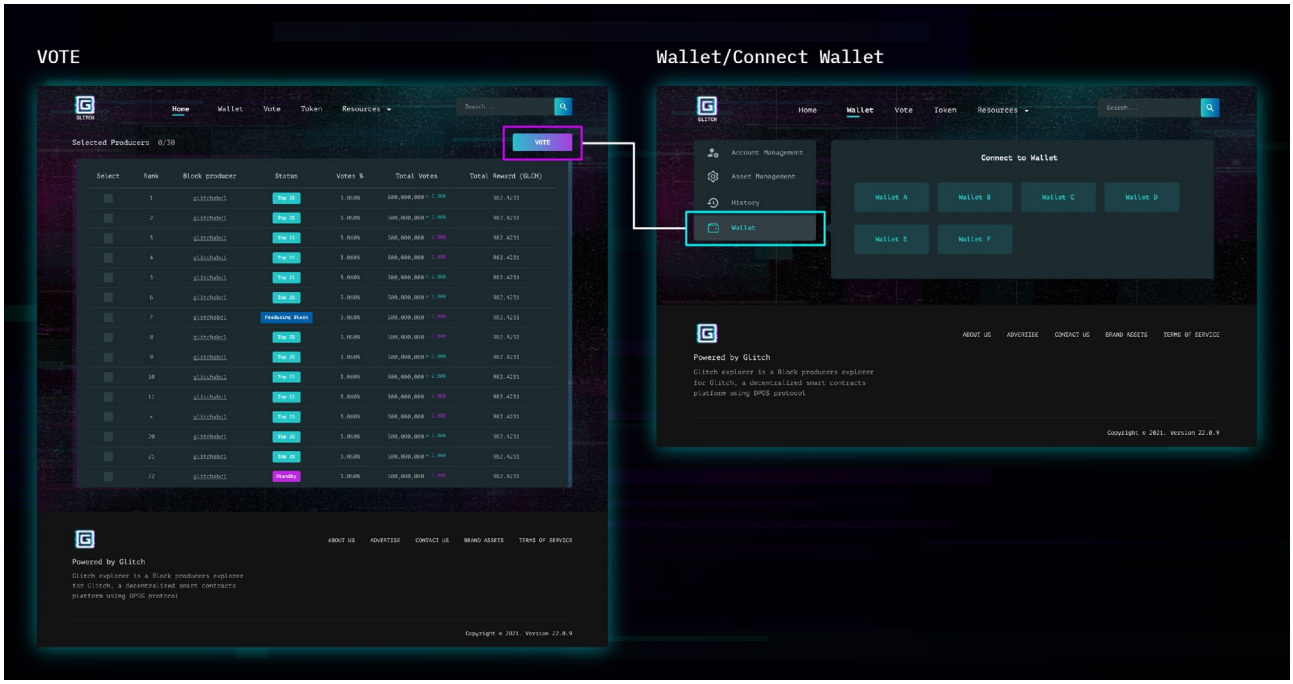
The committee of validators plays the role of verifying blocks. The committee of validators plays the role of verifying blocks. Tendermint has the mechanism of picking block generators randomly among 21 validators. Validators that have high voting power will have a higher chance to be picked in the session (since the frequency of them is higher than the lower ones). But it does not ensure the high voting power validators will be chosen since the mechanism is random. There could be a case a certain validator could be assigned to generate some blocks consecutively.

The block reward is the summary of 1 GLCH and the transaction fee of all verified transactions in that block. Note that the minimum block reward is 1 GLCH if there are not any transactions inside it. Validators must claim for the reward by initiating a smart contract and so do the delegators. A validator keeps 10% of the reward. The rest of the reward is shared with the delegators. A block is finalized when it is agreed by (2/3 + 1) of validators. Block added is irreversible.

Glitch also utilizes the slashing mechanism. For any misbehaving activities such as providing invalid data and missing block verification, the validator and its delegators are punished by slashing 5% of their staked GLCH (which is already locked). This order can affect a validator’s ranking and its reputation in the network critically. The 5% GLCH slashed amount is then distributed into a block reward. The rest of the validators in the committee can claim for that reward based on protocol rules set by the DAO.

DAO

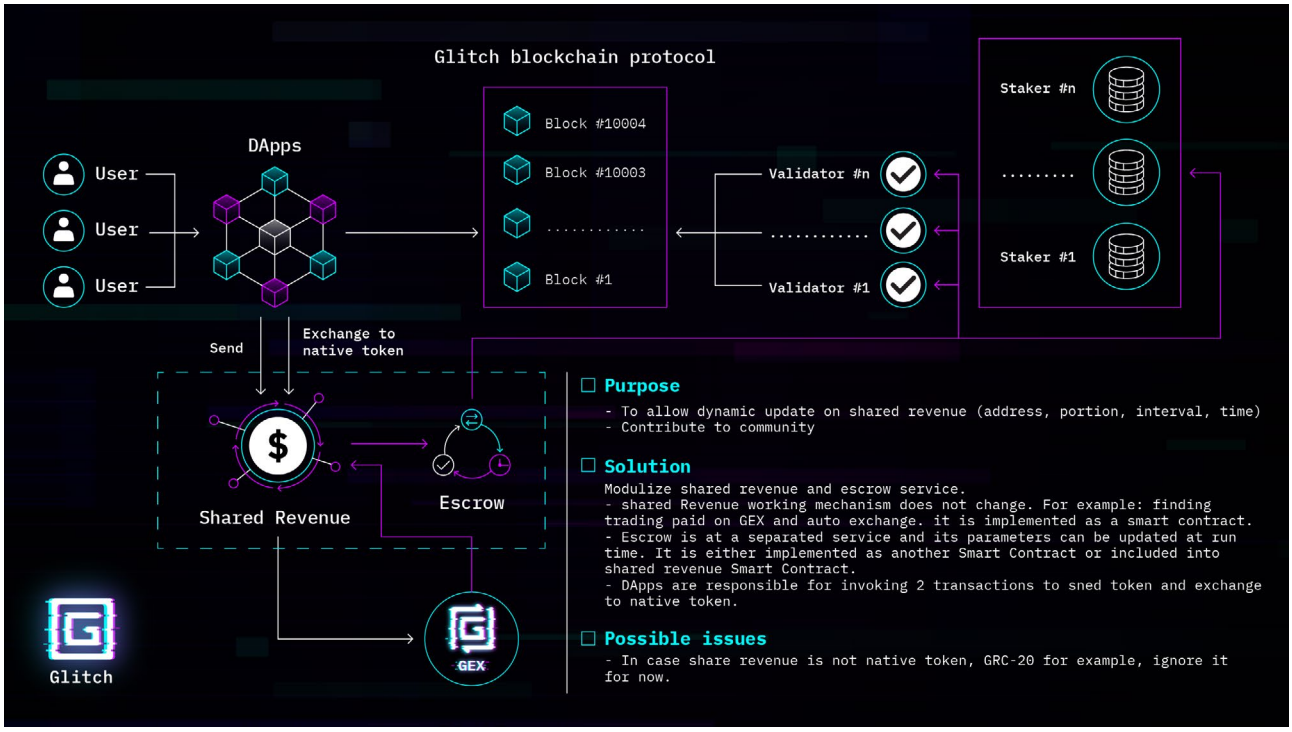
DAO - Decentralized Autonomous Organization is an important feature of Glitch. Decision-making power is placed into the hands of an automated system and a crowdsourced process. Fueled by GLCH, the DAO was designed to allow investors to send money from anywhere in the world anonymously. The DAO would then provide those owners GLCH, allowing them voting rights on changes in the network. Any members in the Glitch can raise changes to the network. They initialize a transaction with a fixed duration. A transaction will cost a fee in GLCH. Other members in the network start proposing GLCH for that change to be implemented. Note that GLITCH requires a minimum amount of GLCH for a network change to be implemented by DAO, of course, this parameter could be also changed by DAO. The amount of GLITCH blockchain validators could be slashed for punishment.



Revenue Share

Revenue sharing is one of the most critical aspects of the platform because it ensures that users are charged proportionately for the transactions they make. Revisiting how most current blockchain systems work, the user pays fees to reward and incentivise the network to run their transactions. The more gas that you pay, the higher the likelihood of your transaction getting validated in the instance of full blocks and a backlog of transactions. In the case of GLITCH, the speed and capacity were touched on earlier, but the revenue share means that from a users' perspective if you are simply sending a transaction, your gas has less of an impact than before. This is because the bulk of the rewards over time will come from the dApps on the platform.

The dApps will be indirectly paying for the use of the network by sharing a percentage of the fees they charge to users with the network. Below are two scenarios to illustrate the differences and the benefits of this approach.



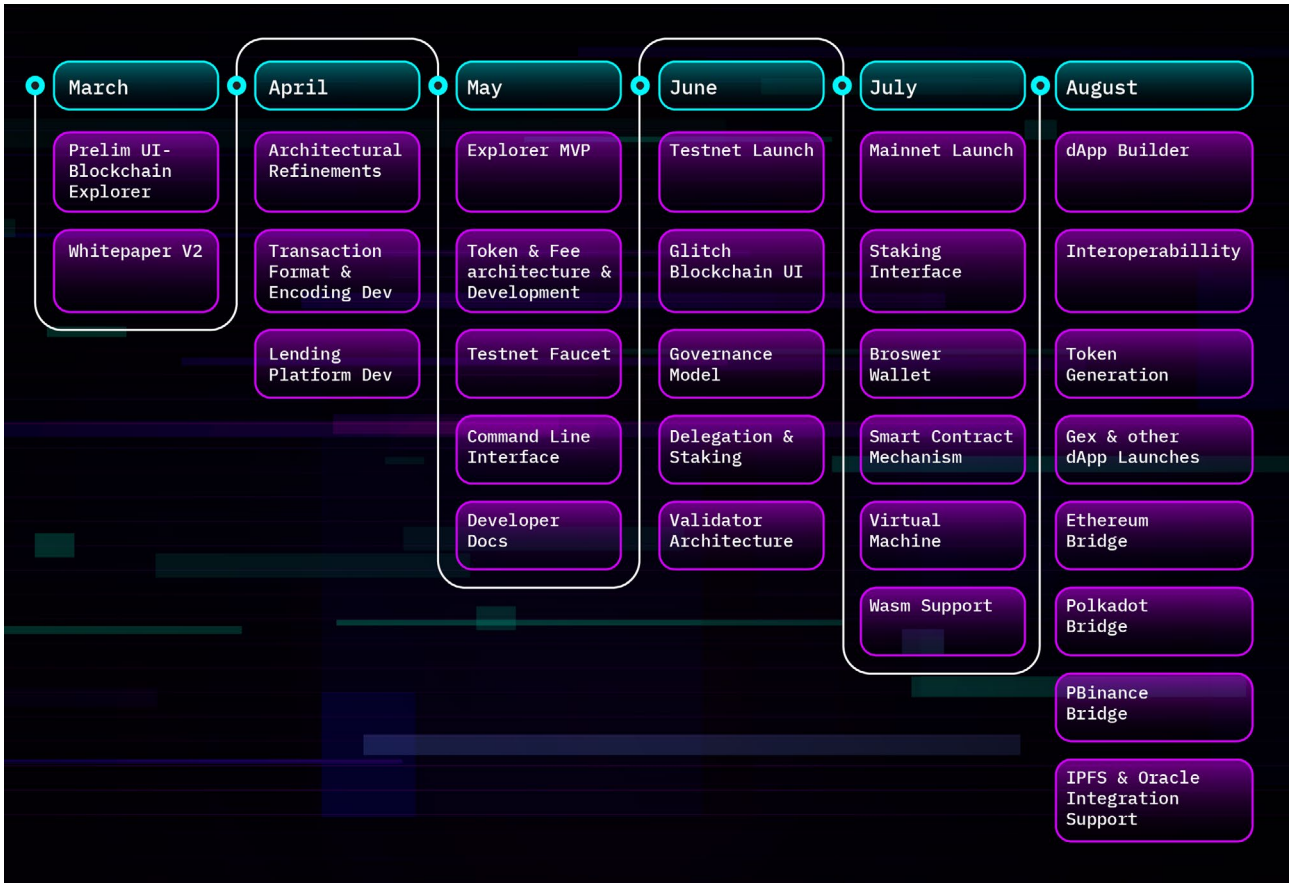
dApps are not forced to share revenue with the Glitch network. However, dApps that share the revenue regularly could be authorized as official Glitch dApps. This could be helpful for the application to attract more users and investments. Owners or any users can share the revenue on behalf of dApps. They initiate a smart contract with a voluntary amount of GLC. There could be a minimum share revenue amount for a dApp to become an official one that is managed by DAO. At the beginning of the product, the minimum amount is set at 1,000 GLCH for dApps to be the official ones. Furthermore, becoming an official dApp could help the dApp to receive priority support from the Glitch foundation in terms of Marketing.

dApps can use escrow services to share revenue directly with validators. Escrow could be a smart contract or included in the shared revenue contract. This scenario uses GLCH as a native coin. In the case of owning GRC-20 standard tokens, dApps should exchange tokens for GLCH on GEX. This mechanism is called swapping trading pair, which also implements a smart contract to swap tokens into GLCH. Then dApps share GLCH to validators via escrow. Of course, exchange tokens to GLCH transactions should be charged a fee.

Growth and expansion

Glitch Finance has an expansive vision to provide best-in-class blockchain financial solutions and democratize access to consumer-facing products and services. We believe this is best done through well-placed educational resources and unparalleled user experiences. Some of our long-term goals include offline transaction scheduling, low code dApp tools, holistic personal finance, robo-crypto advisory, a GLITCH console, and much more.

Roadmap



Technology and product

As we work to check the boxes on our roadmap, the technology we use is mainly going to be blockchain-driven, and we're keeping a close eye on the DeFi landscape in order to maintain competitiveness. The scope of this effort will eventually have to be consolidated and at the center of our process is our ability to project manage multiple competing demands to deliver value to the community and beyond.

The smart contracts we have already mentioned are mainly compatible with Javascript and WASM. We did, however, construct our architecture so we could consider adding Solidity as well. The reason for this is straightforward — the portability of the large number of DeFi dApps that exist and are being created daily.

Partnerships and business development

While we're still in the conception stage, if all works as planned, we intend launch the blockchain with a couple of dApps already running on top of it.

1. A lending platform — Built and developed in conjunction with UNION.
2. A stablecoin — pegged to the top five fiat currencies.
3. Crypto domains — we will replace cryptocurrency addresses with a human-readable name for easier and more secure token transfers.
4. A Digital Marketplace — an NFT (non-fungible token) platform for creating, securing, and trading digital collectibles secured with blockchain technology.

Until the mainnet launch, our primary focus is securing partnerships with projects to build dApps on top of the GLITCH blockchain. We're also looking to initiate talks with other blockchain projects to enable interoperability as soon as we go live.

Team expansion

Internally, Glitch Finance has three core pillars: marketing, technology, and operations.

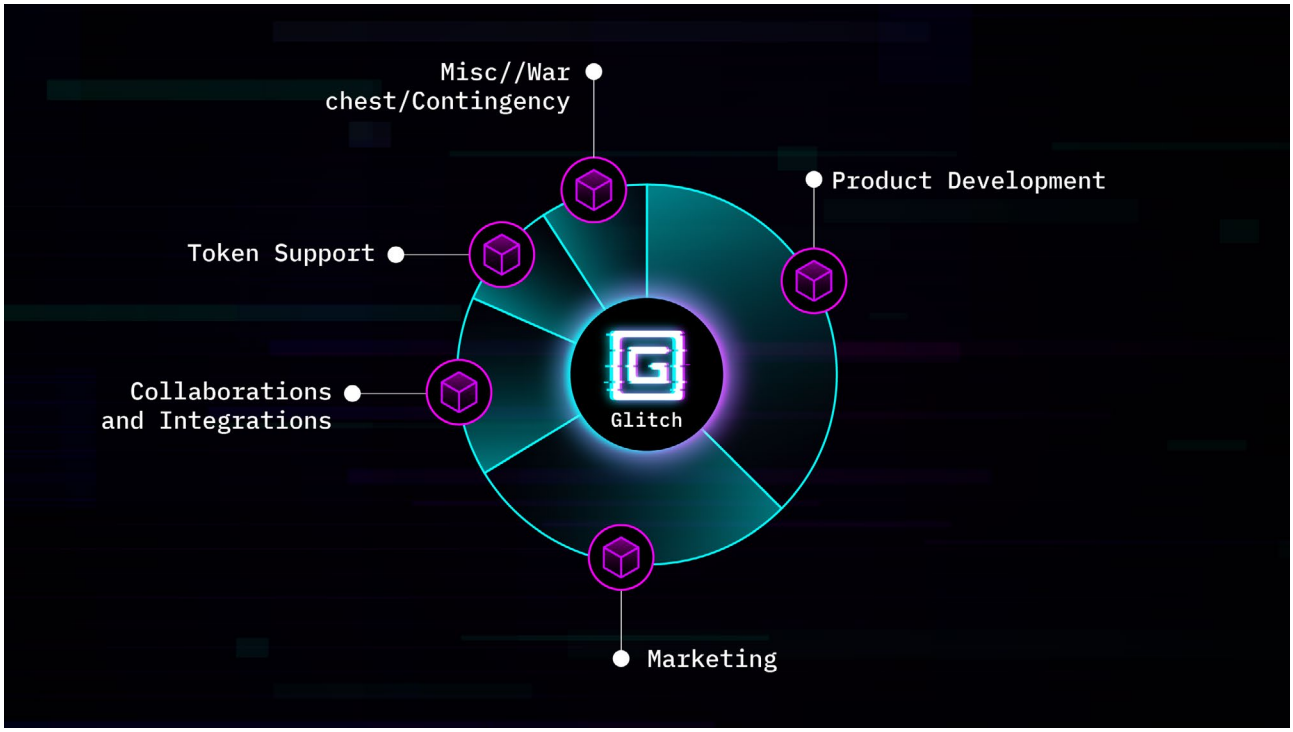
- **Operations**
  The glue of the system, led by the project lead, this team ensures the best possible execution and that resources are available where needed. We have a project lead, operations lead, data, special projects officer, and an administrator.

- **Technology**
  The largest body count, and for good reason. Arguably the most action can be found in the tech team working to deliver an array of products with values aligned to our mission. We have a technology lead, solutions architect, lead devs, core devs, a scrum master, and a UX designer.

- **Marketing**
  The friendliest funniest bunch of troopers in the squad, the marketing team is actively working to grow the ecosystem and spread the word about Glitch. We've got a design lead, digital marketing coordinator, a business development manager, an awesome copywriter, the head of Research & Development, Jeff Kirdeikis as an advisor, and the CEO Sean Ryan, in charge of the communications, listings, and partnership activities.

Budget

In terms of budget allocation, our current priority is product development, collaborations and integrations, token support and marketing.



Further information

Community

 Twitter  Telegram  Telegram ANN

Additional resources

Articles

What is Glitch - https://medium.com/glitchfinance/part-1-what-is-glitch-83240039e84d

GEX - https://medium.com/glitchfinance/part-2-introducing-gex-the-glitch-decentralized-exchange-2f4aa1b4b7f3

Supercharge and mega month - https://medium.com/glitchfinance/glitch-supercharge-mega-month-a36468efa496