



GAME DEVELOPER REPORT

AN INITIATIVE BY THE
GAME7 COMMUNITY.

AUTHORS:

Steven Chen, Jun Kim,
Andreas Michailidis,
George Isichos, Steven Mahana

EDITORS:

Ronen Kirsh, Josh Rio, Jon Allen,
jacobc.eth, Dushka Zapata



GAME7

DISCLAIMER

The catalyst for this report was over 100 conversations with blockchain games, game platforms, and tools. Game7 intends to serve as a conduit to aggregate communication for the entire Web3 ecosystem in an agnostic way, and leverage that information to improve the space as a whole.

For this initial report we have done exactly that: synthesize the information that we received from over one hundred teams actively building in the space and present it without opinions or bias. In an effort to preserve neutrality, there may be information that is either inaccurate or incomplete.

Going forward, Game7 will conduct deep research in order to frame perspectives received directly from builders in the space within the context of collected data. We welcome input and assistance in this goal from anyone. If you wish to add further details or context to this report, or collaborate with ongoing research efforts, please let us know!

The information contained in this report is provided for education and informational purposes only. It shall not be understood or construed as legal or financial advice. Please do your own research.

TABLE OF CONTENTS

- Introduction
- Methodology
- Report Format
- Opening Remarks
- Call to Action
- Our Goals
- TL;DR Summary
- Findings & Takeaways
 - 1. Tech
 - 1.1 Chain Selection
 - 1.2 Smart Contract Development
 - 1.3 Wallets and SDKs
 - 1.4 Marketplaces
 - 1.5 On-chain/Off-chain
 - 1.6 Security
 - 1.7 Guilds
 - 2. Ecosystem Specific
 - 2.1 Avalanche
 - 2.2 Polkadot
 - 2.3 Polygon
 - 2.4 Solana
 - 2.5 BSC, Enjin, Gnosis Chain, ImmutableX, NEAR, StarkWare
 - 3. Economic Design
 - 4. Legal / Regulatory
 - 5. Community
 - 6. Distribution
 - 7. Education
 - 8. Talent



INTRODUCTION

GAME7
DEV REPORT
2022

**OUR MISSION AT GAME7
IS TO ACCELERATE THE
ADOPTION OF:**

**SUSTAINABLE, PERMISSIONLESS
GAME ECONOMIES.**

To unite and empower builders, players, and pioneers, we need to first determine the challenges collectively faced today.

Rather than relying on our own assumptions, we interviewed **over 100 leading game developers** building web3 games.


































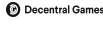
































































This report is a summary of our primary findings and takeaways organized into actionable items. In order to address these findings, we strive to create a Web3 Game Developer Ecosystem that provides a positive, supportive, and inclusive environment to collaborate and share what is learned.

**“WE INTERVIEWED
OVER 100 GAME
DEVELOPERS.”**



THANK YOU

Before we jump into the content, we would like to thank each and every one of those who contributed to this report. Your time is valuable and we will do our best to ensure each conversation is meaningful and put to good use.

	I Oxchristom		I Metabarn Damiano		I Jerry Huang		I Renz Chong
	I OxTender		I Dan Fantasia		I Jon Weinberg		I Rhys and Lukas
	I Adrien Duermael		I Daria Pakina		I Joseph Derflinger		I Ric and Gina
faraway	I Alex Paley		I Dave Young		I Julien Sevat		I Richard Davey
	I Andrew Green		I David Johansson		I Kedian Sun		I Rob Carroll
ROCKET MONSTERS UNIVERSE	I Andrew Woodward		I David Seegers		I Kenneth Lee		I Roman Frank
	I Aniket and Ahmed		I David Son		I Kenneth Liu		I Ronan Sandford
	I Anthony Apollo		I Diego Etcheto		I Khaled Alroumi		I Rudy Koch
	I Antonio RamiceIllo		I Don Norbury		I Leon Do		I Ryan De Taboada
	I Antonio Viggiano		I Doron Kagan		I Luke Barwikowski		I Ryan Foo
	I Aron Beierschmitt		I Elena Rudovskaya		I Manuel Olumori		I Sebastien Borget
	I Arshia Navabi		I Evan Ryer		I Mark Kennedy		I Sajjad
	I Audrey Raby		I Galen Lee		I Markus Schneider		I Sam Peurifoy
	I Avi Wolicki		I Geoff Wellman		I Matthew and Parker		I Simon Davis
	I Bertrand Lamarque		I Giovanni Petrantonio		I Matthew Morris		I Stefan Muto
	I Bored Elon		I Grant James		I Michael Hofweller		I Stephen Wang
	I Brandon McDuff		I Guiltygoze		I Michael Sanders		I Taewon Yun
	I Brendan Pelletier		I Howard Xu		I Mike Sorrenti		I Theo Priestley
	I Bruno Skvorc		I Jack Pan		I Neeraj Kashyap		I Thomas P
	I Cedric Decoster		I Jackson Poon		I North		I Umberto Canessa Cerchi
	I Chandler Thomlison		I James Au		I Omar Siddiqui		I Vincent
	I Chris Akhavan		I James Chua		I Paul Gadi		I White Glint
	I Chris Scott		I Jay Chang		I Ralph Laemmche		I Wiktor Starczewski
	I Chris Zhu		I Jennifer Tran		I Ray Lu		I Yijia Chen
	I Connor and Hunter		I Jerome de Tychey		I Rebecca Liao		
	I Daishizhen						

It was imperative that our research methods were as unbiased as possible.

Our questions were simple:



What are your biggest challenges and pain points?



What are your suggestions to solve them?



What existing tools or resources would you suggest to other game devs?

Our goal was to capture the unique outlook and topics that are most pressing to each developer

Open-ended questions gave each contributor the agency to discuss topics of their choosing

**YOUR CONTRIBUTION IS AN IMPORTANT
PIECE OF THAT PUZZLE.**



REPORT FORMAT

Our open-ended engagement method helped gather an abundance of data points and information.

Based on the volume and importance of takeaways from each topic, we organized our findings into a digestible format. Substantial topics such as Tech and Ecosystems were further consolidated into digestible sub-topics.



Findings

Key data points that reflect the present outlook of game developers.



Gaps

Major challenges encountered in web3 game development.



Ideas

Suggestions for tools, products, or resources that can be built to reduce these gaps.



Existing Resources/Tools

Highlight existing tools or resources that have helped.

We chose to publish this report as a “**living document**” to welcome further data input from the community. Instead of a traditional long-form research report, our content is conveyed in the form of concise bullets to facilitate further updates. Information in crypto becomes outdated very quickly, and this format provides a great way for the community to maintain an open dialogue. This report lays the foundation for future discussions, and with the help and feedback of our community, we are excited to collaborate on topics that are of interest.



Submit a Resource

You will see a “**Submit a Resource**” button in many places throughout this report. Feel free to click on it to suggest existing resources/tools we may have missed!

OPENING REMARKS

Our experience speaking with contributors through the developer outreach interviews has been invaluable. We truly appreciate each 1:1 conversation with game developers through this process. The amount of information and knowledge we collaboratively uncovered exceeded our expectations. We learned through a bird's eye view what it means to be a web3 game developer in the current landscape.

We recognized a recurring theme: **the lack of information and communication flow between game developers**. There were many instances where one group brought awareness to an upcoming or current challenge that the next group had already solved. In other cases, multiple groups duplicate their efforts by independently pioneering solutions to identical challenges.

The process of developing a game is tremendously demanding as it is. In our emerging industry where asymmetry of information is already rampant, we are still building in closed-source, siloed environments. Identifying this pattern is just the beginning, and with the help of our community, we can take meaningful steps to rectify this situation.

HOW CAN WE ESCAPE THIS UNPRODUCTIVE CYCLE?

Our answer is simple:
We need to **come together** and **build as one community**.

We need to **emphasize the importance of open-source** in propelling the web3 industry.

We need to create a web3 game developer ecosystem that provides a positive, supportive and inclusive environment to collaborate and share findings.

This is how we can create industry-accepted solutions and standards for our most pressing problems. With an open-source mindset, everything we build will benefit from having full context of the ecosystem. Imagine a platform where people are unafraid to raise questions because the community exists to help one another.



**THIS IS THE TRUE MEANING
OF OPEN-SOURCE:
A FUTURE WE CAN ACHIEVE
AS A COMMUNITY.**

CALL TO ACTION

We understand that such radical changes cannot happen overnight and powerful industry shifts take time. We also recognize that changes are naturally difficult for people, and we all need a push to get started. We believe in the open-source vision long-term and want to be the catalyst the industry needs in order to achieve it.

Throughout this report, we identified findings to key issues as well as “ideas” that can serve as potential solutions. The term “ideas” was purposefully referenced to link to a tool, standard, or resource from which our community can collaboratively build what they need most.

WHETHER YOU ARE:

Interested in suggesting
a new idea

Interested in contributing
to any of the ideas listed
in the report

Already working on an
idea that addresses any
of the key issues listed

WE WANT TO HELP

We are aware that building on your own, and often without certainty, can be tough. Our goal is to provide support for game devs to focus on what matters most - building.

What type of support are we pledging?

G7 IDEAS SUBMISSION PIPELINE:

Receive support to push the idea you are working on to the next level.
[Submit your idea here.](#)

G7 KNOWLEDGE HUB:

An open-source platform where we discuss challenges and solutions organized by topics.

G7 GRANTS PROGRAM:

Fund your ideas and projects so you can focus on building.

G7 WORKING GROUPS HUB:

Collaborative channels for every idea and project actively being built in our community.

On top of funding, we are actively allocating development resources to co-build these ideas together, as a community. Our goal is for the Game7 Discord to be a place where game devs can call home. Whether you are building, researching, looking for opportunities, or just learning, there is a place for you in our community.



[Join our Discord and say hello!](#)



OUR GOALS

We've committed immense effort and time towards outreach, collecting findings, and drafting this report. After it all, we have determined several goals and outcomes for this initiative.

WE MEASURE THE SUCCESS OF THIS PROJECT IN FOUR SIMPLE WAYS:

Awareness:

Highlight the key challenges game devs are collectively facing today

Solutions:

Identify open-source solutions or tools we can build as a community to address these industry-wide challenges

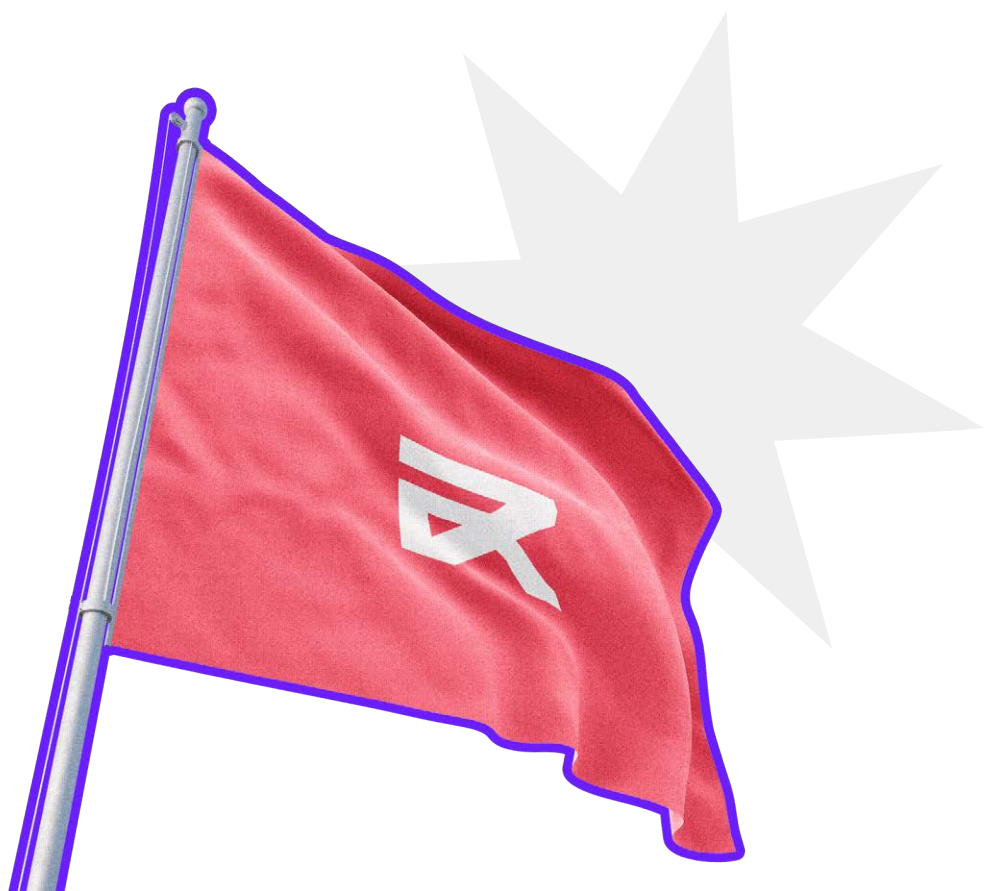
Funding:

Provide funding via grants where they are most needed to ensure these solutions are well-capitalized and maintained long-term

Community:

Foster a community of game and web3 devs who want to collaborate and build together

We don't expect these outcomes will manifest overnight, but to achieve these goals, we will need everyone to join in the mission of building a more sustainable gaming industry.



TL;DR SUMMARY

We understand everyone is busy and time in crypto seems to move at **10x speed**.

If the concise formatting is still too long for you, we have provided a **TL;DR summary** below.

? IMPORTANT:

Due to the sheer volume of important information, these highlights cannot replace the content in this report. It's here to help you navigate the different topics covered and decide which ones to delve more deeply into.

**"CAN'T.
BUSY RN"**
-YOU



IN A FEW WORDS:

- The **chain selection** process can be very political and multifaceted. While there isn't a perfect chain for everyone, we've outlined some pros and cons of certain chains in the Ecosystem Specific section.
- Existing **smart contract** and **NFT standards** across every ecosystem are not well optimized for game development.
- Game devs have a divergent and polarized opinion when it comes to the decision of holding **custody** over **users' wallets** and assets to offer a better **user experience**. The direction has a significant effect on the architecture and limitations of key infrastructure layers, such as wallets and marketplaces.
- Most of the mainstream **wallets** and **marketplaces** were not originally intended for game applications and put more focus towards PFPs (Profile Pictures) and Art NFTs.
- Native in-game web3 integration for popular **game engines**, such as Unity and Unreal Engine, is a dire need.
- **Education** is integral to the growth and adoption of not just web3 gaming, but the entire ecosystem. There is no credibly neutral knowledge base for the web3 gaming ecosystem to learn and discuss.
- **User experience** is a much higher priority than the level of **decentralization** for both game developers and gamers; most web3 game mechanics remain **off-chain**. Determining which portions of the game experience are **on-chain** and synchronizing this data is a challenge.
- Both game devs and guilds themselves are trying to move away from the play-to-earn (P2E) model due to **sustainability issues**.
- There isn't a proven working model for **Economic Design**, and naturally, there is no formula that applies to all. Many game developers are simply using a trial and error approach.
- **Legal and regulatory** is an ever-present gray area. The majority of teams, especially in the US, remain heavily concerned.
- Managing sustainable **gaming communities** is very challenging, as most users focus more on the price of in-game tokens and assets (NFTs) than the gameplay itself.
- Game discovery and **distribution** is a challenge across all platforms (browser, desktop, and mobile). There isn't a widely trusted publisher for web3 games.
- There is a systemic shortage of web3 developers. Many teams are instead **hiring** talented traditional developers and "teaching them web3" to close this gap.

FINDINGS AND TAKEAWAYS

GAME7
DEV REPORT
2022

1 TECH

Given the nature of our audience, we gathered an abundance of content focused on the web3 gaming tech stack. We divided the most important components into sub-topics below.

TECH SUB-TOPICS:



Chain Selection



Smart Contract Development



Wallets & SDKs



Marketplaces



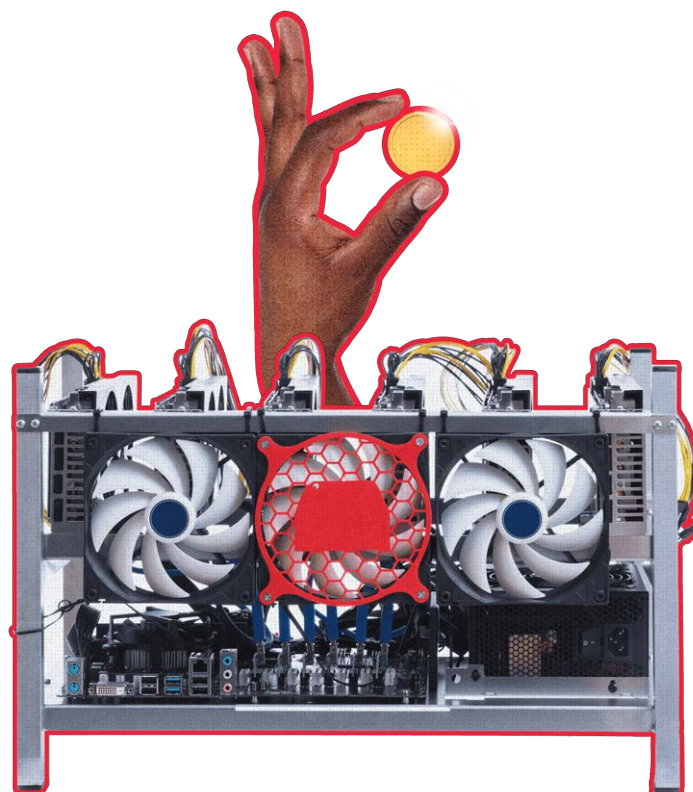
On-chain/Off-chain



Security



Guilds



1.1 CHAIN SELECTION



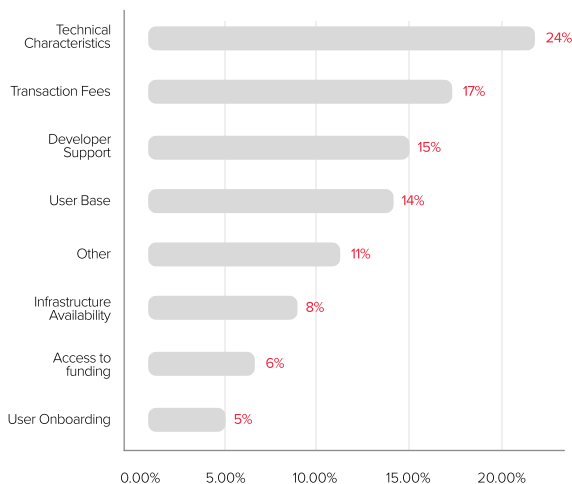
Chain Selection is one of the first major decisions a team must make before they can start building a web3 game.



Findings

- Chain selection is a contentious and political decision; there is no perfect chain.
- Due to high transaction fees and low throughput, Ethereum L1 is not a realistic option for most gaming use-cases.
- Most networks are incentivized to contain user adoption within their own ecosystem rather than allow easy interoperability. This creates segregation among both developers and users.
- As seen in the chart, many are selecting chains based on potential access to white-glove development support. Game developers with fewer connections in the industry are left out.

KEY DECISION DRIVERS FOR CHAIN SELECTION



Disclaimer: The data here is derived from the developers we interviewed. It's not a representation of the entire industry.

Gaps

- There is a lack of resources for game devs to make an informed decision for chain selection.
- Figuring out the pros and cons of each chain is time-consuming and burdensome.
- Existing chain comparison information is not catered to game development.



Ideas

Chain Comparison Dashboard

A chain comparison dashboard that provides meaningful data points on both qualitative and quantitative features of building. The content should be actively maintained by a community of game devs to offer unbiased and factual information.

IMPORTANT FACTORS TO INCLUDE:

- Clear steps and time it takes to onboard new users to chain (wallet UX especially)
- Marketplace liquidity and availability
- On/off-ramps
- Average transaction speed and confirmations needed
- Transaction fees
- Developer experience
- Applications and infrastructure
- Service providers
- Ecosystem maturity
- Chain type (i.e. Layer-1, Layer-2, dApp chain)
- Uptime and stability
- Level of decentralization, censorship resistance, and credible neutrality



Existing Resources/Tools



Submit a Resource

• [Blockchain Comparison for Web3 Games](#)

Credit to: Double Coconut

1.2 SMART CONTRACT DEVELOPMENT

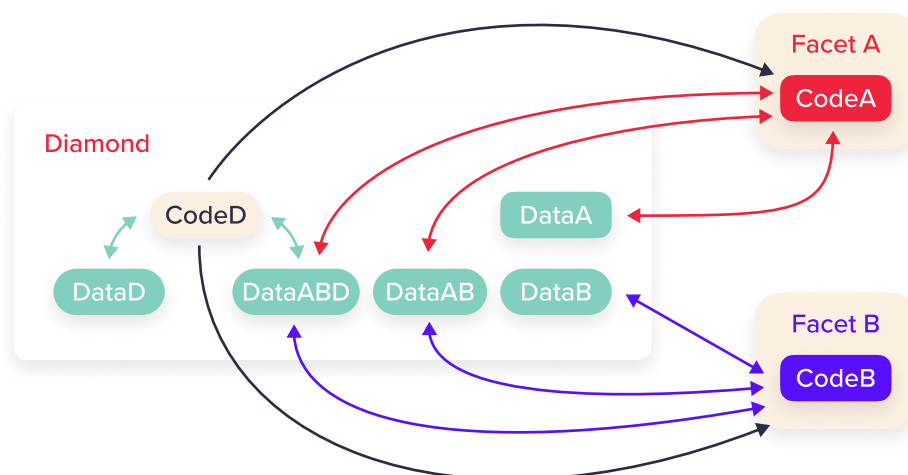
Smart contracts continue to be a critical component of blockchain development to power decentralized applications and use cases for web3 games.



Findings



- While there has been considerable progress with tools and documentation to facilitate smart contract development thanks to DeFi, we still have to make strides for web3 game development.
- Many experienced web3 developers recommend using the Diamond Standard (EIP-2535) to build EVM smart contracts.
 - Diamonds are a very powerful tool during the smart contract development and testing phase.
 - Once the building and testing phase is complete, it is recommended to convert back to a monolithic smart contract (SC) for security and gas optimization purposes.
- Difficulty integrating random number generator (RNG) functionality for smart contracts, an important use-case in gaming.



? WHAT IS A DIAMOND?

A diamond is a contract with external functions that are supplied by contracts called **facets**. Facets are separate, independent contracts that can share internal functions, libraries and state variables.

- ERC721 is still widely used for NFTs by most game devs across the board. ERC1155 is still lacking widespread adoption, especially with marketplaces.
 - Non-fungible aspects of ERC721 standards are great for PFPs and in-game characters that represent a person's identity.
 - ERC1155 standards are more optimized for in-game items as you can set supply cap, batch transactions, and other attributes.
 - Unlike ERC721s, people tend to associate the higher supply cap of ERC1155s with lower token prices.
 - A recent ERC1155 controversy required a user to delegate "SetApprovalForAll" to sell an NFT; this exposes the user to risk of losing all assets stored in the wallet.

ERC721 VS ERC1155	ERC721	ERC1155	SOURCE
Total Contracts Deployed	102,670.00	13,627.00	Etherscan (1) Etherscan (2)
Total Volume (ETH)	Ξ18,374,735.30	Ξ1,365,815.23	Dune Analytics
Total Sales	15,495,815	3,508,242	Dune Analytics

↔ Gaps

- Lack of credible repositories that provide pre-audited smart contracts tailored for game dev use cases across most chains.
- Developer environments, even in more mature languages like Solidity, need improvement.
- Current ERC721 NFT standards are not well suited for the application of web3 games.
 - ERC721's non-fungible characteristics make it nearly impossible for there to be a trustless third-party minting interface.
 - This makes it difficult for in-game use cases such as crafting (combining NFTs to generate a new NFT), burning (deleting NFTs), and other functionalities trustlessly on-chain.
 - ERC1155 is versatile in comparison; however, the lack of adoption is a concern for game devs.
- Current NFT minting standards are not optimal for gaming. They force game devs to set a predefined supply cap for collections; it is difficult to predict demand beforehand.



- Create **open-source educational** guidelines for Diamond Standard tailored for game devs.
- **EIP-2535 Multi-Facet Proxy builder** with a simple UI/UX that is use case driven and utilizes on-chain assets to build the contracts.
- Smart contract delegation framework that allows game devs to set access control for users to modify the smart contract with different levels of restrictions. Proxy contracts, such as Diamonds, are used to enable this use case.
 - **Terminus:** Decentralized authorization framework that uses ERC1155s as a token badge to represent access control through proxy contracts.
Credit to: Moonstream
 - This functionality paves the road for the future of User Generated Content (UGC), a modification framework with layering permissions.
In-development: Curio
- **Open-source repository** of game dev smart contracts that is actively maintained.
 - NFT functionalities like Staking (locking NFT to generate yield), Crafting (combining NFTs to generate a new NFT), Lootboxes (claiming tokens by opening a randomized box).
 - Tournament Escrow and Payout.
- **Static Analyzer:** plugged into IDE for Solidity and other languages.
- **Smart Contract Manager:** manage all smart contracts in one place.
- **Tree-sitter:** or any parser generator tool, for Solidity and other languages.
In-development by Joran Honig



Existing Resources/Tools



[Submit a Resource](#)

- **ThirdWeb:**

Provides different interfaces to deploy Solidity contracts point and click; deploy NFT smart contracts within minutes.

- **Open Zeppelin:**

Most popular library of general use-case battle-tested Solidity smart contracts.

- **Hardhat, Truffle, Brownie, and Foundry:**

All development environments and toolkits that help with smart contract development: compile, deploy, test, and debug your Solidity code.

- **Web3.js and Ethers.js:**

Popular Ethereum JavaScript libraries that allow developers to communicate and interact with the Ethereum network.

- **Moralis:**

Full-stack workflow for building dApps on multiple chains, and provides easy web3 authentication with one line of code.

- One of the most widely used tools to build dApps in EVM.
- It would be great if it can offer the function to build or test locally.

- **Moonstream:**

Web3 games use Moonstream to integrate with the blockchain. Moonstream provides them with managed, on-chain lootboxes, leaderboards, crafting recipes, and leveling systems.

- **Tenderly:**

Ethereum monitoring, debugging, and analytics platform.

- **Chainlink VRF:**

A provably fair and verifiable random number generator (RNG) on Ethereum.

1.3 WALLETS & SDKs

Wallets play a major role in the onboarding and user experience of web3 games. They act as a keyring for users to access and carry their game assets across the decentralized web through web3 APIs while consensually interacting with smart contracts.



Findings

- Custodial vs non-custodial remains a tough decision across the board:

CUSTODIAL

Games hold assets on a user's behalf to optimize user experience (UX).

- Users won't have to learn how to secure their own wallets; this minimizes onboarding.
- Game devs don't want the liability of holding user assets (see [Ronin hack](#)). KYC is widely becoming a requirement for users on a custodial platform.
- Most custodial solutions reduces portability of assets due to their incompatible nature with other web3 apps.

VS

NON-CUSTODIAL

Users have full control of their assets.

- Creates additional steps in onboarding which can increase the barrier to entry for new users.
- New users may be susceptible to phishing scams.
- It can provide web3 exposure to users and facilitate learning.
- Gives users true ownership over their property.

- To educate or not to educate? We saw conflicting perspectives here:
 - Some believe web3 infrastructure should be invisible and offer seamless UX like web2 games.
 - Others strongly think that educating users on custody is the long-term solution because it's a major value proposition of web3.

It's unclear what the future looks like.
What do you think is the right path?

- Some examples of game devs creatively aligning incentives to educate users on custody:

- Integrated a community-driven mentorship culture for veteran users to teach new users and help them with onboarding.

[Credit to: StepN](#)

- While there is no wallet requirement to play the game, users are required to secure their own wallet to claim certain loot in-game.

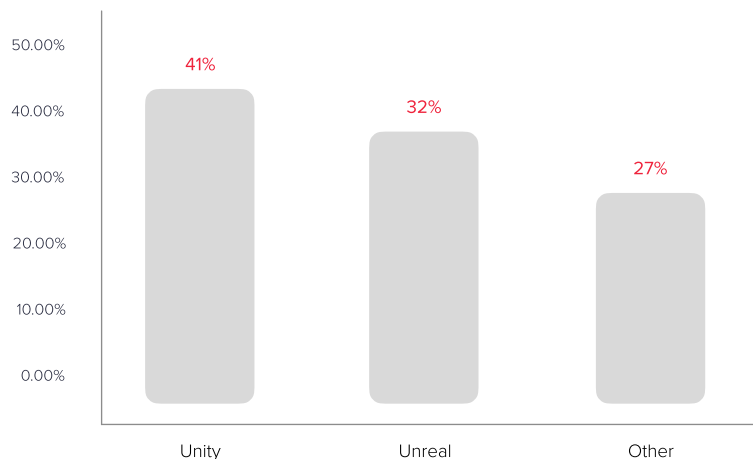
[Credit to: ev.io](#)

- Semi-custodial wallets are hybrid solutions being battle-tested for both UX and security.
 - A good example of this is social login wallets like Web3Auth which utilizes Shamir Backup requiring 2-of-3 shards for users to access their key. Shards are stored in the user's device, backup device, and any social passwordless account. Day-to-day, users are mainly interacting with their social login to access their wallet.
 - UX of these wallets on other EVM chains (non-ETH L1) are clunky, especially with applications like OpenSea. Game devs are recommending MetaMask if users run into issues.
- Some game devs are working on a solution that allows users to grant pre-approval rights for transactions capped by a specified amount.

I↔I Gaps

- Native in-game web3 integration for popular game engines, such as Unity and Unreal Engine, is in dire need.
 - A game engine that directly integrates with web3 infrastructure via easy-to-use SDKs is urgently needed; wallets are a crucial component.
 - Game devs and players alike want to sign transactions natively in-game without using a browser. Existing UX for desktop and mobile games needs improvement.
- Seamless user wallet creation in-game is challenging.
 - Can private keys be auto-stored for users upon wallet creation?
 - Game server or client - easily accessible but not secure.
 - Local device - secure but the account is tied to the device.
 - People don't want to import their existing private keys due to security concerns.

WEB 3 GAME ENGINE ADOPTION



Disclaimer: The data here is derived from the developers we interviewed. It's not a representation of the entire industry.

- Most wallets in web3 were not built with gaming applications in mind.
 - Unable to showcase game-specific NFT metadata and graphics.
 - Unknown when popular wallets such as MetaMask or Phantom will integrate more gaming functionality.
- There are security concerns around displaying NFTs in wallets as it allows attackers to host unverified images and send them to user wallets to steal their IP addresses.
- Use-case specific gaming wallets lack web3 APIs and limit asset portability. The assets begin to resemble those that are traditionally stored in a centralized database.



Ideas

- **Mobile Wallet Authenticator**
 - Similar to WalletConnect functionality but built for Games.
 - Encrypted key is stored in the secure enclave of a mobile phone, storing keys for a new or existing wallet. Scan a QR code to start an in-game session. Web2 gamers are already experienced with Steam Authentication.
 - Pre-approve in-game transaction signing based on a capped amount to improve UX.





Existing Resources/Tools



[Submit a Resource](#)

• **ChainSafe Gaming SDK:**

Open-source Unity integration with any EVM chain.

• **Forte:**

Building economic technology for games. An end-to-end (E2E) platform for embeddable token wallets, NFT minting and selling, payment rails, and compliance services.

• **MetaMask:**

Remains the most popular and widely adopted wallet for any EVM chain.

• **Sequence:**

All-in-one developer platform and smart wallet for web3 games, including an indexer that auto-indexes all NFTs and tokens on EVM networks.

• **Stardust:**

An end-to-end SaaS solution to create and implement blockchain assets into your game easily.

• **Web3Auth and Magic.Link:**

Social login wallets for user authentication.

• **Yaku Corp Unreal Engine Solana Wallet (In-development):**

Creatively uses Chrome extensions in the background to relay transactions.

• **GameStop Wallet (beta):**

Browser and Mobile Wallet to store crypto & NFTs.

• **Solana Mobile Stack SDK:**

Hardware-encoded seed Vault — to publish mobile dApps and distribute them through a specialized storefront.

14 MARKETPLACES

Marketplaces are another major component of web3 game development to allow users to trade game assets.



Findings

• Most game devs want to build their own in-game marketplace:

- 3rd party marketplaces are not designed for games.
- Allow F2P players to access liquidity and trade in-game assets.
- Improved UX for users to trade in-game.
- Ability to tax transactions and trading of game assets.



- Some common marketplace setups by game devs:
 - No in-game marketplace. All NFT trading happens in 3rd party on-chain marketplaces (OpenSea, Magic Eden, Fractal, etc.).
 - In-game marketplace where users deposit assets to the game wallet and all trading takes place off-chain. Option for users to withdraw into on-chain custody. Similar structure to a CEX, a custodial option that optimizes for UX. Least secure and creates liability issues for game devs.

Gaps

- OpenSea and other popular 3rd party marketplaces aren't built for games.
 - Unlike PFPs and Art, gaming NFTs update their metadata frequently. OpenSea does not offer metadata updating through APIs.
 - There is game data that cannot be represented by normal on-chain metadata.
 - Gaming NFTs are not a priority for marketplaces as their average price is much lower than PFP NFTs.
- Game devs find it challenging to build their own in-game marketplaces (on-chain or off-chain).
 - Game devs with experience building MMORPG have an easier time building their own marketplaces.
 - There are currently no industry standards when it comes to building a marketplace for games.
- If everyone tries to build their own marketplace, it may segregate the industry away from interoperability.
- In contrast to traditional web2 games, it is difficult for users to access instant liquidity of game assets or NFTs.

Ideas

- **Boilerplate marketplaces** that can serve as a customizable template with on-chain and off-chain optionality.
 - Potential to become an industry standard for marketplaces; it is critical that this is built open-source.
- **Hybrid in-game marketplace** that bridges to 3rd party on-chain marketplaces in real-time. This setup is very complex and requires experienced web3 developers.

Credit to: Crypto Unicorns



Existing Resources/Tools



Submit a Resource

- **OpenSea:** OpenSea is by far the most widely adopted marketplace. There are concerns about obtaining access to their APIs. Some have reported months-long waiting times to receive API keys.
- **Gem.xyz:** NFT marketplace aggregator on Ethereum.
- **Magic Eden:** Largest NFT marketplace on Solana; provides reliable support for developers.
- **Fractal:** Marketplace with a focus on web3 games currently supporting Solana. Generally, very positive feedback as they are providing a white-glove service for game developers.
- **Niftyswap:** Decentralized swap protocol for ERC-1155 tokens.

1.5 ON-CHAIN / OFF-CHAIN



As seen in our findings with wallets and marketplaces, there is a major dilemma on decentralization.

The question is simple:
Which parts of a game should be on-chain vs off-chain?



Findings

- Users prioritize user experience and gameplay, and the preference for an on-chain or decentralized game is secondary.
- There are a select few building fully on-chain games: Dark Forest, Conquest, Topology, DeFi Kingdoms, and Cometh.
 - While pushing developmental boundaries is essential, they do not currently recommend other game devs build a fully on-chain game.

- The majority of game devs have opted to keep most game mechanics and game activity off-chain while web3 asset (tokens, NFTs) transaction data is pushed on-chain. The exact setup largely fluctuates based on marketplace and chain.
- The Graph protocol is widely used to query and index on-chain data with their subgraphs from specific smart contracts.



↔ Gaps

- Synchronizing on-chain/off-chain data can be a troublesome task. Because there is no standard, game devs are creating standalone solutions.

- Example setup:



- On-chain data availability tailored for game devs is completely missing. This is especially apparent when it comes to the storage of metadata.
 - The Graph was built to query data, so it doesn't offer event-driven notification capabilities.
 - The nature of web3 drives game devs to store metadata on IPFS; however, this isn't suitable for games due to the critical need for speed and frequency of updates.
 - This adds more reason for game devs to host their own metadata in game servers or off-chain, further decreasing portability of assets.
- There is no dashboard or tool track to analyze on-chain data and in-game activity.
- There is no tool to see NFTs across multiple chains from one indexer.

💡 Ideas

- **Build an indexing protocol** that provides fast and notification-based data availability tailored for game devs.
 - Some game devs, like **Conquest**, are already working on a solution.
- **Open-source state-management tool.**
 - This can also be a guideline that game devs can collectively help maintain.
 - Significantly saves time for new game devs entering the space.

- **On-chain watchers** similar to Ethereum Push Notification Service or XMTP built for games
- **Dune Analytics** but for Web3 Games.
- **Multi-chain Indexer** specific for gaming functionalities. In-Development by Leon Do
 - Index on-chain data (NFTs, Tokens) from multiple chains.
 - Showcase game-oriented NFT metadata in a wallet.



Existing Resources/Tools



[Submit a Resource](#)

- **The Graph:** Subgraphs are useful for querying on-chain data for specific smart contracts.
- **Alchemy:** Blockchain API provider, node infrastructure, suite of developer tools, and dashboard. Some claim their APIs and Nodes aren't reliable at times.
- **Infura:** Ethereum and IPFS API provider, generally reliable.
- **Blocknative:** Gas estimator and mempool API provider for Ethereum and Polygon.

1.6 SECURITY

Security is an ever-present concern for anyone building in Web3. Exploits, hacks and scams present a significant impediment to Web3 adoption. No one wants to end up on the front page of CoinDesk for the wrong reasons.

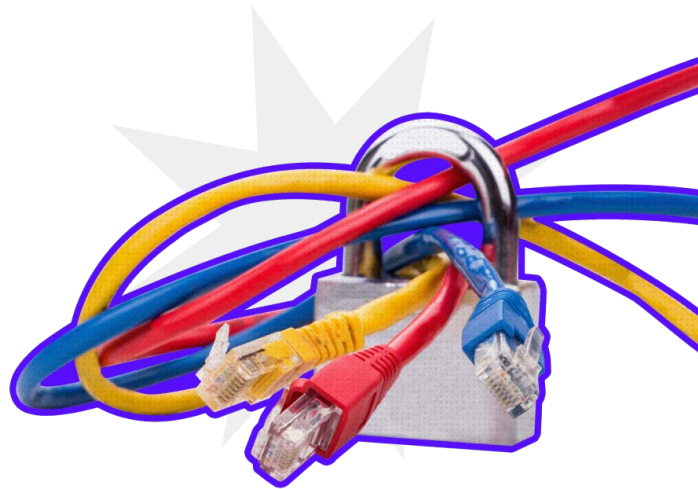


Findings



Gaps

- The need for security best practices and standards.
- A lack of education and communication related to exploits, scams and rug pulls.
- The need for a solid resource of pre-audited smart contracts for standard use cases.
- Industry-wide shortage for smart contract auditing due to extremely high demand.
 - Average wait time for audits ranges from three to four months.
 - Game devs claim most audits are very generic and don't protect against sophisticated exploits.
 - Frequent updates to game economies and assets create a need for ongoing smart contract auditing.



- Key management best practices is an ongoing concern. Substandard key management increases attack surface and introduces vulnerabilities that could destroy a game.
- Some use the AWS key management system to encrypt user keys for an additional layer of protection. This is a short-term solution to optimize for user experience; liability remains a concern.
- Game devs are worried about the focus towards on-chain exploits and the lack of emphasis on traditional OpSec, InfoSec, Phishing, Spoofing and Social attack vectors.
- Many game devs building in low-fee chain environments are experiencing DDOS attacks.



Ideas

- **Monitoring:**
Systems for ongoing monitoring and vulnerability testing for Web3 assets.
- **Testing:**
Integrated testing systems of Web3 assets.
 - IDE integrated static contract analysis.
 - CI/CD integrated static contract analysis.
- **Web3 System Control (W3SC):**
An open-source and collaborative security controls checklist that is available as a security guide.
- **DDOS Prevention solutions or guidelines:** Magic Eden is building a solution for Solana. Crabada is building one for Avalanche.



Existing Resources/Tools



Submit a Resource

- **Securify:** Fully automated online static analyzer for smart contracts, providing a security report based on vulnerability patterns.
- **Cloudflare's Web3 gateway:** Provides secure HTTP-accessible interfaces for Web3 networks.
- **Web3 System Control (W3SC):** A community driven security standard and best practices.
- **Mythril:** The Swiss army knife for smart contract security.
- **Slither:** Static analysis framework with detectors for many common Solidity issues. It has taint and value tracking capabilities and is written in Python.
- **Contract-Library:** Decompiler and security analysis tool for all deployed contracts.
- **MadMax:** Static analysis tool for gas DoS vulnerabilities.
- **Gigahorse:** Fast binary lifter and program analysis framework written in Datalog.
- **Echidna:** The only available fuzzer for Ethereum software. Uses property testing to generate malicious inputs that break smart contracts.

1.7 GUILDS



Findings

- Many guilds believe the current P2E scholarship model will slowly transition into more generic communities in the web3 gaming space.
- Most guilds are building game-specific tooling to optimize and automate parts of their operations.
- Game devs are having a difficult time balancing guilds and the game economy. Guilds create significant and guaranteed sell pressure of the token.
- Guilds have naturally become game funds because they hold so many game assets for farming reasons. Similar to VCs, they want to get in early to buy at a low price point.
- There are games, like Pegaxy, that built easy-to-use guild dashboards to manage scholars more easily.



Gaps

- There is a lack of communication between game devs and guilds to determine the need for high-priority tools.
- Not only is it difficult to create a solution that is applicable for all games, most guild tools are being built closed-source.
- Scripts and tools in the guild space become quickly outdated as games make adjustments.
- Trustless NFT lending: Allows player A to utilize player B's assets without the risk of theft.
- Recruiting and onboarding process for guild members and scholars is manual and time-consuming.



Ideas



[Submit a Resource](#)

- Standardized **open-source scripts** for guild management.
 - Clearly defined interfaces and toolsets to easily implement during the development phase.
 - Actively maintained by both guilds and game devs to form a standard.
 - Some popular needs: ability to control multiple accounts with single access points, bulk transfer NFTs, and automate scholar payouts.
- **Trustless NFT lending solution.**

2 ECOSYSTEM SPECIFIC

While there is a wide range of ecosystems from which game devs can choose to build, there is no “perfect” chain that solves everything.

Our intentions are to report objective and constructive feedback shared by game developers. The goal is to drive productive and relevant conversations with the community and the appointed personnel in each ecosystem for collaboration.

? NOTE:

The following ecosystems are organized into alphabetical order. They were chosen based on the volume of information we were able to gather from each.

OUR CONTRIBUTORS BUILD ON THESE CHAINS:



Avalanche



BSC



Enjin



Gnosis Chain



Immutable X



NEAR



Polkadot



Polygon



Solana



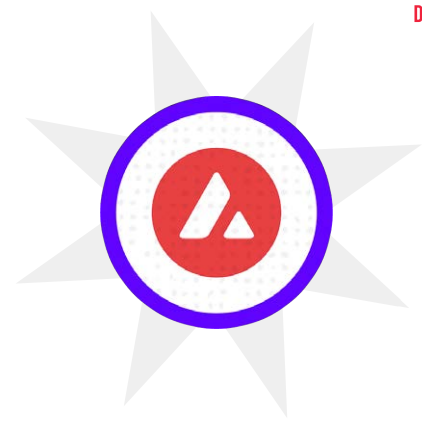
StarkWare

2.1 AVALANCHE



Positives

- EVM compatible Layer 1 solution.
- Migration from Ethereum to AVAX is smooth.
- Higher throughput and much lower fees than ETH.
- AVAX subnet is an option for game devs that want their own modular “chain.”
 - Allows you to modify and customize VMs, provides architecture malleability, and easily define your own rules.
- AVAX blocks have 1s finality which is great for UX.
- The team provides excellent hands-on support.



Criticisms and Suggested Improvements

- Better documentation in regard to building subnets are needed.
- Some Avalanche subnets have low validator diversity, posing potential security risks.
- NFT marketplaces lack liquidity on AVAX compared to other ecosystems.
- A relatively small, but growing game dev community.

2.2 POLKADOT



Positives

- Polkadot has a similar roadmap as ETH 2.0; offers scalability through sharding which increases throughput with horizontal scaling. Shards on Polkadot are known as Parachains.
- Parachains are suitable for game devs that want their own modular chain and define their own rules (throughput, block time, fee structure, etc.).



- Substrate is a maturing framework on which parachains are built. There are even some game devs that are forking substrate to build their game.



Criticisms and Suggested Improvements

- Game devs are concerned about funds needed to renew their parachain lease after 2 years; selling tokens through crowdloan isn't sustainable.
- Difficulty hiring Rust developers.
- Documentation for Substrate needs improvement.
- Lack of NFT growth in the Polkadot ecosystem; low volume in NFT marketplaces.
- Difficult for popular applications like MetaMask or OpenSea to support Polkadot. Substrate parachain metadata changes too often and each parachain is very different.

2.3 POLYGON



Positives



- Ethereum sidechain scaling solution with plasma as added security.
- EVM compatibility offers access to a large selection of applications and infrastructure on Ethereum.
- Polygon PoS has demonstrated notable improvements for transaction throughput and lowered fees while staying in the EVM family.
- Gaming community and ecosystem is growing rapidly.
- Achieved carbon neutrality with a goal to become carbon negative.
- Talent supply of Solidity developers already building on Ethereum.
- Polygon Supernets coming soon; allows projects to create their own sovereign blockchain with independent validators.
- Migration from Ethereum to Polygon is fast and easy.
- Anticipated release of ZK-Rollups and zkEVM in the Polygon ecosystem.
- Polygon Avail has been great for data availability and erases redundant data.
- Plenty of node service options such as Infura, POKT, Alchemy, etc.



Criticisms and Suggested Improvements

- RPC nodes can be unstable and needs improvement.
 - Game devs are connected to multiple nodes for redundancy.
 - This does not solve player connectivity issues to RPC end-points.
 - Some are hosting their own dedicated testnet nodes.
- Polygon reorganizations can run really deep, requiring high block confirmations (up to 128) in some games. This can affect user experience as games need faster finality.
 - Polygon is working with bloXroute to improve network latency.
 - PoS v3 will feature instant finality; expected release later this year.
- The average block time is too fast and can be difficult to manage.

2.4 SOLANA



Positives



- L1 scalability offers very fast transaction speeds, lower transaction fees, and a great user experience.
- Strong growing ecosystem with a variety of on-chain tooling with easy composability: Orca Dex, Cardinal, Ludex, Mango Markets, Serum, etc.
- Versatile on-ramp options globally and has a diverse set of marketplaces: Fractal, OpenSea, and Magic Eden.
- Solana Labs provides great development support to game devs.
- SPL Token Standard has generally been easy to build on.
- Metaplex/Candy Machine makes it simple to mint NFTs and build marketplace storefronts. The token standard has been used to mint more than 15M assets to date.



Criticisms and Suggested Improvements

- Difficult to identify and hire Rust developers on Solana.
- Developers are wary of the recent network outages, some of which were caused by DDOS attacks targeting mints.
 - [Network upgrades](#) in progress have been recently announced to address this.
- The transition from Solidity (EVM) to Solana is difficult and time-consuming; better onboarding path is required.
- Metaplex/Candy Machine becomes difficult to customize once more complex functionalities are needed.
- **Node up-time dashboard** to show which nodes are online vs offline and includes test-net nodes.
- Smart contracts that work on devnet won't necessarily work well on mainnet.
 - **Solana contract operation optimizer** can help solve this.
- **AWS Key Management Service** for Solana. Credit to: Trailblazer Games
- **Standardized solution or tool for whitelist minting.**
 - Currently difficult to perform airdrops due to transaction failures.
 - Solport, Magic Eden, and Fractal are providing some in-house solutions to whitelist mint.

2.5 BSC, ENJIN, GNOSIS CHAIN, IMMUTABLE X, NEAR, STARKWARE

These ecosystems are notable mentions that have a growing rate of adoption from web3 games. Unfortunately, we weren't able to speak with enough game developers from each chain to provide an adequate overview for this release.

Thankfully, this report was published as a living document taking these scenarios into account. We would love to use this opportunity to extend the invite to those building on these platforms and collaboratively revamp this section. Please reach out to us!



3 ECONOMIC DESIGN

Economic design proves to be one of the most difficult puzzles of web3 game development. Because there isn't yet a long-term success story of a sustainable game economy in web3, even the most talented game devs struggle to identify an adequate solution.

This issue is amplified even more with the macro downtrend of the market; game assets have to fight an uphill battle in price sustainability.



I↔I Gaps

Today, most gamers in the space are **more focused on investments and earning money** from game assets **than the actual gameplay itself**, which presents a unique challenge for web3 game devs.

- Many game devs want tools to easily simulate game economies. Potential challenges they expressed:
 - It's very difficult to simulate and predict human behavior – there are always unknown variables.
 - There isn't a tool that can replace the experience of a game economy designer. Put simply:
“Giving someone a fishing pole is meaningless if they don't know how to fish”
 - It's difficult to create a generic tool that can be viable for all the different game genres and economies.
- Bot prevention is a top concern when it comes to economic design. Bots can cause uncontrollable inflation, so game devs are actively trying to incorporate randomness into their game to mitigate potential damage.



Findings

- Many game devs are moving away from the play-to-earn (P2E) model being the core driver for their game economy. Those that stuck with the P2E model are having a difficult time sustaining their token price because inflation can't keep up with user growth. Many are trying to reposition from play-to-earn into “play-and-earn” to put more emphasis on the play aspect.
- Some believe bootstrapping a game with P2E and guilds is good for initial player metrics; however, it can be unhealthy for the player base culture in the long-run. It sets a precedent for new players to be more focused on earning money than enjoying the game itself.

LIST OF FACTORS AND COMPONENTS WE'VE GATHERED TO CONSIDER FOR ANY GAME ECONOMY

- Motivation of player base to hold X and Y tokens
- Key reasons why people are spending money and trading game assets
- A way to control inflation of X token
- A very good “flexing” or “clout” mechanism for whales that allows for uncapped spending
- Creating a balance between whales and F2P, who are generally a low-spending population

• Some interesting concepts and takeaways:

- Game token and asset price is often reflected by the proxy of trust between the game dev and the player base community. A good way to develop this trust is by engaging the community in gameplay update decisions.
 - StepN's alpha roll-out is a good case study. Not only did they give away genesis sneakers instead of doing a mint, they were also able to engage the community in fixing bugs early on.
- Some feel strongly that not every game needs its own token. There are other ways to monetize web3 games like taxing game transactions and trading. There are also people building in-game advertising models directly tied to NFTs that can generate income.
- Suggestion: In order to control inflation of a certain token, restrict this token from being farmed directly in-game. Users can farm other in-game assets that can be redeemed to earn this token based on a bonding curve so inflation can be controlled.

Credit to: Ascenders





Ideas

• Here is a list of needed tools and ideas game devs would like:

◦ Game economy analyzer:

- A tool and dashboard that allows game devs to input game data to understand their economy better. A web3 version of steam analytics.
- Key factors:
 - How are players spending money?
 - Inflow vs outflow of funds and tokens.
 - Ability to input off-chain game data.

◦ Token Emission Schedule Tool:

- A basic tool that can replace spreadsheets to show token emissions over time based on vesting and inflation.
- Inputs: Vesting of investors, founders, inflationary mechanics, etc.
- Fork and tweak existing token emission schedules.



Existing Resources/Tools



[Submit a Resource](#)

• **Machinations:** Game economy design and analytics tool. Recently shifted focus to supporting web3 games. Widely used among game devs. Some feedback:

- Initially, the learning curve may be high and feels intimidating. A few have stated, “it feels like you need a PhD to use it correctly.”
- It would be helpful if there were some blueprints or templates to help game devs get started.



We have talked to the Machinations team and want to help address this by hosting AMAs and educational content in our community.

- **Metanomic:** An E2E platform that covers creating game and metaverse economies, and understanding players and users through on and off-chain data intelligence.
 - **Thunderstruck (Beta):** User analytics platform that receives your event data and classifies players based on their in-game behaviour.
 - **Economy Engine (Beta):** Easy-to-use platform that helps game designers build & balance their economy loops.
- **EconomicsDesign:** Economic design consulting and analytics service provider.

4 LEGAL/REGULATORY

Legal and regulatory concerns have been mentioned across the board in almost every conversation.



Findings

- Game devs based in the US are especially wary of legal risks compared to other regions. Some have already dropped out of accelerators due to potential risks.
- Legal advice from law firms varies heavily; much of it is based on the risk tolerance of the client.



Gaps

- No resources online that can lead people in the right direction.
- Initial legal costs of talking with lawyers are extremely high. Basic legal guidance would be a lifesaver for game devs.
- Game devs are worried about collecting KYC from users. This becomes a larger issue for game devs handling user custody or funds due to the risk of facilitating money laundering.
 - Crazy Defense Heroes adding KYC requirements lost 70% of their players in one day ([source](#)).



COMMON LEGAL QUESTIONS PEOPLE ARE ASKING:

GAME7
DEV REPORT
2022

“How do we launch our tokens within the regulatory framework? Is there a blueprint to follow?”

“How to structure entity formation as a crypto company?”

“When do I need to collect KYC on my players? Can I airdrop tokens without collecting KYC?”

“Are there security concerns with assets that can lead to passive income?”



Ideas



[Submit a Resource](#)

- A **legal blueprint** that can act as a guide for game devs.
 - Showcases legal structures of existing setups.
 - How to launch a token, a DAO, and NFT mint from a legal perspective.
 - Provide region-specific examples.

5 COMMUNITY

Community and userbase are the backbones of any video game. The emphasis on community in web3 makes this an even more critical component of building a successful game.



Findings



Gaps

- Communities are predominantly managed in Discord and Telegram.
 - Telegram remains more investor heavy and Discord is a mixture.
- Existing web3 community management tools lack programmability.
 - Collab.Land and Matrica are both closed-source.



“Dealing with community sentiment is difficult. Most people are more focused on token and NFT prices than discussing the game.”

- There is currently no way to track player identity which makes it difficult to reward credible players and prevent multi-account bots.
- Pro-tip: Create a backup of the Discord server in case the original is compromised.



Ideas

- Build an **open-source programmable** version of community management tools such as Collab.Land or Matrica to adjust for web3 game applications.
- **User Identity System:**
 - Able to connect web3 addresses with player account names.
 - Player performance tracking across multiple games.
 - Discord connectivity with accounts tied to Discord ID.
- **Discord blueprint** for game devs:
 - Easy-to-spin-up Discord with fundamental channels and access control setup.
 - General onboarding with basic bots already added.
 - Best practices for Discord security to mitigate hacks and exploits of admin accounts.
- Better **Discord verification bots**.
 - Feedback: Captcha.bot breaks frequently.
 - Some game devs wrote their own customized verification bots. We are working with some to open-source those solutions.
- **On-chain state/event-driven** updates API built into Discord.
- **Badge and XP system** on Discord to incentivize community engagement and gamification.



Existing Resources/Tools



Submit a Resource

- **Communi3 Lab:** Software that helps Web3 clients manage and grow communities. Service represented through a B2B NFT.
- **Discord bots:** Vulcan Bot, Wick Bot, Arcane Bot, Collab.Land, MEE6.

6 DISTRIBUTION

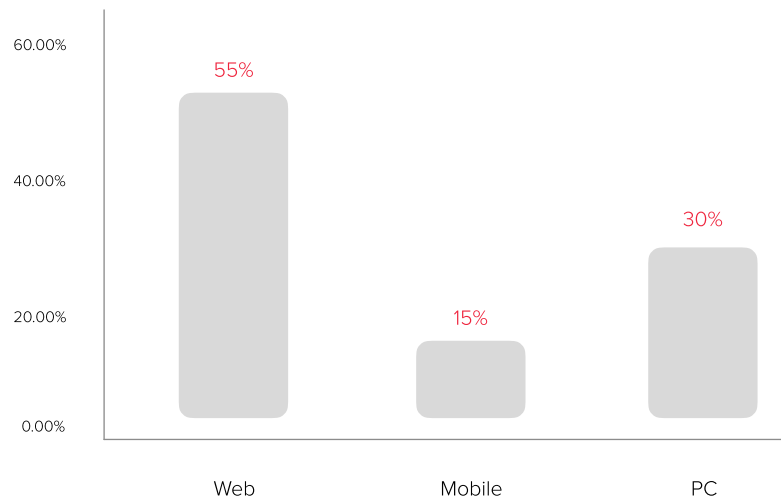
Game distribution will always be a cornerstone of the gaming industry. It plays a multi-purpose role in hosting downloadable content (DLC), marketing, game curation, and user authentication. These components are all essential for both the developer and user.



Findings

- Between browser, desktop, and mobile platforms, the majority of games in web3 are browser games

WEB 3 GAME PLATFORM



Disclaimer: The data here is derived from the developers we interviewed. It's not a representation of the entire industry.

- Epic Games store seems to be more accepting of web3 desktop games than other platforms like Steam.

I↔I Gaps

- Due to the lack of a trusted web3 distribution platform, game devs are having a difficult time getting their games out to users.
- There is no method for users to discover or find reliable information on new games. Existing websites don't have the right incentives for players and focus more on the investment perspective.
- Token launchpads often won't list a game unless they receive discounts.
- Distribution challenges for **desktop games**:
 - Desktop games are exposed to censorship risk; Steam bans games with crypto exposure while Epic Games remains open to web3.
 - Downloading .exe files from websites is not scalable and exposes users to potential security risks.
- Distribution challenges for **mobile games**:
 - Mobile games are at the mercy of web2 giants like Apple and Google; game devs are concerned about being shut down without notice.
 - Notable games like Axie are using TestFlight (IOS) and .APK files (Android). Due to user capacity on TestFlight, new users are not able to join.
- Primary providers of distribution platforms often care primarily about securing revenue from game listings.
 - Because web3 games assets are meant to offer self-custody and can trade via 3rd party marketplaces, it creates friction with how web2 distribution platforms generate revenue.
 - Web2 distribution platforms prefer closed economic systems which make it easier to monetize transactions. Naturally, if a game redirects users to an external marketplace, it is seen as a red flag.
 - Despite a successful launch in App Stores, games are still exposed to potential shutdowns due to a lack of clear policy guidelines.
- Fiat on-ramp for games is a key issue across the board on all platforms (web, desktop, and mobile).
 - Wyre, Ramp, and MoonPay are the main fiat on-ramp providers, but game devs have experienced about 50% of transactions being rejected.
 - Interesting workaround: Users buy "in-game" assets during the fiat purchase phase. The mint doesn't happen until the user wants to withdraw this asset from the game. This is currently working to bypass the fiat on-ramp issue as users aren't necessarily purchasing crypto assets directly.





Ideas



[Submit a Resource](#)

- **Web3 Games Discovery Dashboard.**

- Must put emphasis on being credibility neutral/unbiased.
- Focused on gameplay and game data rather than investments and earning.

- **Steam for Web3 Games.**

- At a minimum provides hosting services for web3 games.
- Faciliate game updates to users.
- Potentially integrate other components, such as wallet and marketplace.

- **Knowledge share** of how to navigate mobile store guidelines and policy based on previous learnings.

7 EDUCATION

Education is a fundamental component integral to the growth and adoption of not just web3 gaming, but our entire ecosystem. If web3 gaming can bridge more users to the broader ecosystem, then broadly accepted educational resources will be necessary for them to call it home.



Findings

- Users gravitate to financial gain over learning the fundamentals of blockchain, custodying of assets, and digital ownership.
- Everyone goes through a unique “rabbit hole” experience to learn.
- Social media is a primary source of educational content.
- The incentives of private platforms often aren’t aligned with the community as they tend to exhibit biases to gain financial benefit.
- Chains offer a “white glove” service to favored groups which further inhibits game devs that likely need the most help.
- Game devs have varying levels of information access depending on their connections.

Developers agree that AAA quality web3 games are the first step to attracting web2 gamers, followed by educating them on the merits of blockchain and web3.

I↔I Gaps

- There is no go-to public web3 knowledge base that is trusted and shared by the community; this applies to both standard users and game developers.
- The objectivity of informational content can be difficult to verify. Content often shows bias towards a given ecosystem or select group of creators.
- Honest, unbiased content often goes unrecognized. “Shilled” influencer content attracts more attention, but ultimately creates setbacks for the industry.
- Access to necessary educational content directly influences the tempo of development cycles and output.



Ideas



[Submit a Resource](#)

- **Web3 version of Stack Overflow:** a reliable source of information that is openly vetted by a wider community.
 - A scalable approach for subject matter experts to asynchronously help less experienced developers.
 - Facilitates collaboration, problem-solving, and knowledge sharing for the industry.
- **Living knowledge graph** of web3 gaming ecosystem
 - A community-curated, neutral and credible source of truth for the web3 ecosystem that allows users to learn about projects and discover associated topics and resources.

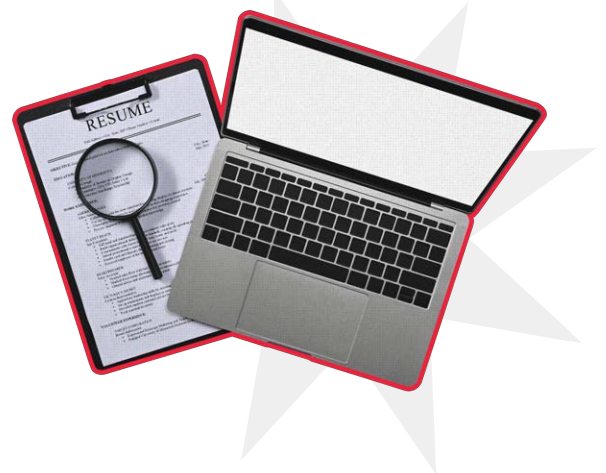
8 TALENT

Developers create the backbone of the blockchain industry, and for web3 gaming, there is literally no game without them. Though talent acquisition and retention is a crucial component for shipping and scaling a project on time, the majority are experiencing a developer bottleneck.



Findings

- Difficulties in identifying, evaluating, and retaining web3 talent.
- Low supply of candidates that are well-rounded in both web3 and gaming, such as mobile or game engine development; most only cover one side.



- Some prefer to train capable web2 developers instead of hiring inexperienced web3 developers.
- Web2 developers have a negative sentiment towards crypto due to market volatility, rug pulls, and NFT scams.
- Large web3 game companies are training junior developers for web3 internally, and they want to expand this to the community level.

Gaps

- Lack of infrastructure for education and negative industry sentiment reinforces the barrier to entry for web2 developers to transition.
- Inability to evaluate talent not only wastes time and capital, but can also be detrimental to the momentum of the team.
- Acquiring senior, management, and executive talent is primarily done through a referral network; this can leave inexperienced teams vulnerable.
- There is no hiring platform dedicated to web3 game developers; finding Rust developers, smart contract engineers, and game design developers is especially challenging.

Ideas

- **Academy for web3 game developers:**
 - Mentor program to help students develop applicable experience on a real project.
 - **Zed Run** has in-house developer training curriculum they'd like to scale and open-source!
- **Hiring platform** for web3 games applicable to all areas of discipline.



Existing Resources/Tools



Submit a Resource

• Existing hiring platforms:

AngelList	jobprotocol.xyz
cryptocurrencyjobs.co	Upwork
CryptoJobsDaily	Web3.career
cryptojobslist.com	

THANK YOU

