

This forum post aims to function as an educational hub for the Arbitrum DAO, focused on highlighting the potential impacts of web3 gaming on the Arbitrum ecosystem and its stakeholders.

Contents here are expected to evolve and update as new information and data is available.

Core Contributors: Dan Peng (@Djinn), Karel Vuong (@karelvuong), Xai Games, the Helika Team, other gaming ecosystem builders.

Join the Gaming Working Group: <https://t.me/+spktzHCOL4MwZGU5>

## The Opportunity

The global gaming industry is massive. With over 3 billion global gamers (1 in every 2.36 people) and [\\$184b in revenue \(2023\)](#) being driven across the global games market, there is a massive opportunity ahead for the web3 gaming space.

While web3 gaming is still in its infancy, Arbitrum has a unique opportunity to immediately acquire promising builders through a combination of grant allocation and a support network led by experts.

There are several key points leading us to this hypothesis:

- Gaming is an easy win for Arbitrum; all the ingredients for success are present. There just needs to be a catalyst to ignite a snowball effect and draw the attention of talented game builders.
- Arbitrum currently ranks #7

in total games among network competitors, despite minimal incentives → highlighting that builders have chosen to build on Arbitrum primarily for its merits across technology, liquidity, and access to users

- Launch of Arbitrum Orbit and Stylus are additional pieces of critical infrastructure that should attract game builders which, in turn, will increase the number of quality games
- Arbitrum currently ranks #7

in total games among network competitors, despite minimal incentives → highlighting that builders have chosen to build on Arbitrum primarily for its merits across technology, liquidity, and access to users

- Launch of Arbitrum Orbit and Stylus are additional pieces of critical infrastructure that should attract game builders which, in turn, will increase the number of quality games
- The gaming audience is immense, and capturing a fraction of that traffic for web3 within the Arbitrum ecosystem could yield exponential ROI
- Industry is currently sized at [\\$272 billion in 2024](#), and is projected to hit \$426 billion by 2029
- User base [exceeds 3 billion](#) as of 2022
- Industry is currently sized at [\\$272 billion in 2024](#), and is projected to hit \$426 billion by 2029
- User base [exceeds 3 billion](#) as of 2022
- Gamers coming on-chain to Arbitrum will bring a net benefit for all protocols:
- The majority of gamers are [in the 18-34 year old range](#), prime for DeFi and typically early adopters of technology
- The majority of gamers are [in the 18-34 year old range](#), prime for DeFi and typically early adopters of technology
- Now is the time to act - gaming infrastructure is maturing, and growth is poised for networks that are ready to support web3 gaming:
- “2024 is a growth year in terms of bringing people on to Web3,” Yat Siu (Animoca Games)
- Dmitrii Morozov, CEO of [GG MetaGame](#), notes: “The groundwork laid in 2022 and 2023 with alpha and beta stages is coming to fruition, with many titles set for commercial release in 2024, potentially bringing Web3 gaming to new heights.”
- “2024 is a growth year in terms of bringing people on to Web3,” Yat Siu (Animoca Games)
- Dmitrii Morozov, CEO of [GG MetaGame](#), notes: “The groundwork laid in 2022 and 2023 with alpha and beta stages is coming to fruition, with many titles set for commercial release in 2024, potentially bringing Web3 gaming to new heights.”

## Background

The STIP process kicked off various discovery efforts to better support gaming and position the Arbitrum ecosystem for success. As part of these efforts, various builders and gaming experts shared content to help frame the opportunity and also educate the DAO on the standards, ecosystem, and processes that support game development.

One of the first DAO discussions on gaming was presented at an [open delegate call focused on gaming](#), with [@karelvuong](#) from Treasure sharing his experiences around building Arbitrum's gaming ecosystem from the ground up. [@Soby](#) from XAI also provided some perspective on why Arbitrum was their destination of choice despite having great working relationships with other chains.

In the above discussions and numerous other DAO related conversations on how we can grow gaming, it is abundantly clear that gaming could provide numerous benefits to the Arbitrum ecosystem as detailed further in the Appendix.

Data across the competitive landscape pointed to several insights:

- Leaders and major L2/L1 competitors are aggressively pursuing games and other ecosystem builders with budgets of \$100-500 million in grants and other incentives - this was recently showcased with multiple networks pursuing Treasure DAO in their L3 search
- Arbitrum is the L2 leader in DeFi but ranks below major network competitors across gaming presence metrics and gaming migration.
- Development expenses for Web3 games are anticipated to match or surpass those of comparable Web2 games. This is attributed to the overarching requirement for parity in game quality, compounded by an absence of a defined playbook for marketing and user acquisition, along with a negative stigma among traditional gamers.
- The game publisher model, in which publishers provide funding and dedicated hands-on support to game builders, has the potential to catalyze and accelerate growth of web3 gaming on Arbitrum.
- Arbitrum DAO's early focus and current makeup that skews towards decentralized finance was great, but has meant DAO programs often did not account for specific needs of gaming projects.

These insights are further illustrated in the Appendix section below. They point to a need to aggressively grow the Arbitrum gaming ecosystem through support for current and new gaming projects and studios – with the guidance and dedicated resources of experts already working to grow Arbitrum's dominance in gaming (publishers, game developers, etc.).

Throughout the following months, builders continued to share about their experiences and present gaming topics to the DAO for the purpose of education:

#### [Gaming Open Office Hours: KPIs 101 Recording](#)

[2024-02-02 11:00 GMT-6]

A deep dive from Lucas Fulks (Helika CPO) from his experience at Zynga and Sciplay on how successful games work and how to build a sustainable gaming ecosystem.

#### [Gaming Open Office Hours: Introducing the Gaming Catalyst Proposal](#)

[2024-01-19 10:03 GMT-6]

An introductory call to the Gaming Catalyst Proposal and the dynamics that foster a healthy, builder-focused gaming ecosystem.

## Macro Landscape & Arbitrum's Peers

Despite Arbitrum's leadership as the de facto home for decentralized trading with its recent accolades and position leading bridged \$ETH and DEX volume, it is still lagging when it comes to gaming.

### Arbitrum's Gaming Presence Across Web3 Networks

Game7 Research published a report covering the [State of Web3 Gaming in 2023](#) on October 15, 2023, and the results are telling. Arbitrum falls in the middle of the pack across several indicators with a gap that will continue to widen unless bold and decisive action is taken.

At the time of the report, Arbitrum was the 7th largest ecosystem by number of games, trailing the likes of Polygon, Solana, Immutable and Avalanche. While the quantity of games in itself is not a meaningful indicator of success, it signals that Arbitrum is experiencing challenges with game acquisition. In addition to attracting new games, it's imperative to track player adoption and employ quality controls as other metrics of success.

Many of Arbitrum's peer ecosystems have dedicated gaming arms and incentives used to attract game studios to build on their network, often managed by the associated network's foundation entity with meaningful agency and capital to deploy towards gaming projects. Fortunately, the Arbitrum DAO is armed with the necessary funds, and is capable of deploying

them in a manner that meaningfully impacts the network's growth. [

1600×901 169 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/0/0d1fb9970ff72fa8025df71a0cf5c7914863f8f1.png)

## Gaming Within Ethereum Layer 2 Landscape

Within the Ethereum L2 landscape itself, Immutable has the pole position with 75% more games building on the network when compared to Arbitrum. While there is a relatively steep drop to third place that tapers off, there has been a concerted effort from other ecosystems to gain ground. The Optimism ecosystem in particular [recently hired](#) Ryan Wyatt and Urvit Goel to lead growth and gaming BD. These are the same leaders who are credited with much of Polygon's early gaming lead as well as the landmark Polygon and Immutable gaming partnership. In short, Arbitrum currently holds second place, but this could change rapidly given the concerted efforts of other chains in growing their gaming presence.

[

1600×898 122 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/d/d331b0a855ece9495518bf2c006a2c23f4983b34.png)

[

1600×898 111 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/c/cd18fedbcc083330701ad298a41728ec89691040.png)

[

1226×696 184 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/3/3b653d6b454f0bb36756680754dd444f33d6d862.png)

## Games Building on Blockchain Frameworks

When it comes to blockchain frameworks (eg. Arbitrum Orbit, OP Stack, Polygon CDK, Avalanche Subnets, etc.), Arbitrum lags in live L3s building atop the stack but comes in fourth in terms of active games. OP Stack currently leads the pack with 25 live networks.

This is not to say Arbitrum is underperforming necessarily. Given the respective launch dates of competitive networks, Arbitrum has shown that even without significant gaming focused marketing or grants, developers are still building new games and migrating from other networks into Arbitrum. This speaks to Arbitrums potential for gaming, especially given its brand recognition, stability, and technology products.

Imagine how the data would look with a significant grant program and experienced publishers working collaboratively with the DAO to source, secure, and market talented teams building upon the Arbitrum network.

[

1600×898 173 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/f/fc2dc012482b7ee6623a4ecb3d448ad9ea5e37be.png)

Arbitrum has become the de facto king of decentralized finance, but falls far behind in the gaming space - which is both a risk to future network growth and an opportunity to aggressively grow the sector.

## About Building Web3 Games

Developing games has incredibly high upside when it comes to potential network effects, but it does come with the risk of being a resource and time intensive endeavor.

This also compounds with the addition of web3 elements. Not only do teams have to create a game that is fun and rewarding, but they must find ways to generate value and integrate complex web3 components that introduce additional risk and resourcing puzzles.

## Benefits of Web3

The benefits of web3 in gaming listed below has been pulled and paraphrased from an [essay authored by Colleen Sullivan](#), Co-Head of Ventures at Brevan Howard Digital:

- **Ownership:** Physical and digital experiences have started to blend and we have seen proof points emerge in web2 games that have a perfect use case in web3 as non-fungible assets. If a gamer pays \$15 for a skin in Fortnite or Counter-Strike and had the option to own it completely or not, it's likely they would choose the web3 version of the skin. The same applies in a non-spending context with games like EVE Online, Diablo, or World of Warcraft where items are earned – usually after hours of hard work and grinding. Ownership extends beyond assets though to encompass games themselves in areas of governance as well as creation. Some games also become platforms (ie. Fortnite, Roblox) which allow users to create and contribute user-generated content (UGC). Web3 can allow gamers to have greater ownership in games, contribute to building and extending the game through mods, new game modes, and more.
- **Composable and Interoperable:** In web3, assets (ERC-20s, ERC-721s, and ERC-1155s) as well as smart contracts form building blocks which exist anywhere the internet exists. The dream of “bringing your sword from one game to another game” is a concept that can be brought to life through the power of web3. For games that are built fully on-chain with their game logic built into smart contracts, it allows for the creation of a forever game that exists anywhere the internet exists and doesn't require centralized servers. For savvy game builders and the right foundation, this allows for new games or expressions to be built atop games. Wallet holdings – which are public – allow for generalized segmentation, allowing builders to port assets and status permissionlessly across games (and beyond as well!).
- **Onramping Non-Spenders into Game Economies:** In traditional games, especially in free-to-play (F2P) games, the lion's share of players are non-spenders. They might enjoy the game and spend hours in it but they did not spend any money. Per the Newzoo Global Games Market Report 2022, there were ~299 million gamers on console and ~458 million on PC who played but did not spend money. The data is murky on the percentage of gamers who make in-game purchases, but the number 5% is often cited. In web3, if game assets are tokenized and non-spenders are unknowingly introduced to blockchain game economies, wouldn't it be something if they suddenly became aware that the sword they spent hours grinding to obtain was worth \$4,000? Or the token airdrop they received had meaningful value behind it. Non-spender successfully converted.
- **User-Generated Content (UGC):** Blockchains give creators the ability to establish provenance and have digital property rights over the virtual goods they create. These virtual goods could be potentially sold to an eager buyer instantly, effectively enabling UGC on steroids. There has been a growing trend of games moving to Games-as-a-Service or live service models, with many embracing UGC. In these models, contributions of people from all over the world foster network effects and keep content fresh in games.

## Cost and Considerations of Game Development

### Development Costs

To understand costs surrounding game development, the easiest baseline would be to look at simple digital games from a pure development cost.

Mobile games are often the cheapest, quickest to market games, but also compete in a crowded market. In 2024, the average mobile game costs [between \\$100k-250k](#), while larger premiere games exceed the \$1m mark. Larger, complex triple A titles like Call of Duty often incur costs well above \$100m just for development alone.

The cost examples above are without any web3 integrations or components, which can quickly increase costs depending on complexity. For any game with on-chain trading elements, it may be prudent to scope the integration and production of the on-chain building separately. Our estimate is at least a 25-50% increase in costs for web3 development and integration on top of traditional gaming costs.

When looking at the high end of web3 gaming, we can draw some conclusions based on recent launches. Triple A web3 title Shrapnel, launched on the Avalanche network, pulled in two funding rounds and a token sale [totaling \\$37.5m between Series A and Seed funding](#), and has been in development since at least 2021. However, the game is still in development as of early 2024 and [has not released milestones for open beta testing.

](<https://www.shrapnel.com/roadmap>) While the high capital requirements to build games does not mean that networks should incur 100% of the burden of funding the game development life cycle, in a landscape with aggressive incentives offered by competitive networks and a growing number of talented teams looking for the right ecosystem partner, incentives can make a significant difference for gaming studios.

### Development Time

Due to the fast-paced nature of crypto, game developers are encouraged to create value and go-to-market in a shortened timeline compared to the traditional gaming industry. While traditional games in web2 often see development cycles reach 3-5 year mark for larger titles or 1-3 mark for smaller, indie games, the timeline for web3 games is compressed with the

emergence of pre-vertical slice game prototypes required to maintain attention and support community engagement post-launch of web3 gaming projects. This means that larger budgets are necessary to maintain quality on accelerated time scales.

Aggressive building means a need for more resources dedicated to development, game design, tokenomics, and user acquisition while also upskilling to incorporate new development paradigms (eg. Solidity and smart contracts) in traditional game development.

#### Summary of Developer Needs from Chains/Ecosystems

- Development
- Distribution & Marketing
- Liquidity (Players and Capital)
- Funding

Incentives and grants are primarily used to support opex, rarely for player redistribution

Given the capital requirements for games and the primary driver for user retention/acquisition being fun - it makes sense to utilize funds for the creation of web3 games as well as onboarding incentives that are more common in DeFi.

Successful games will look different from successful DeFi protocols

Within gaming, there is less focus on yield, being +EV, or value-accrual from trading, and more of a focus on creating an experience that delivers fun and engaging experiences to players. Brand building, fostering a vibrant player community, and forging an emotional connection back to one's IP is often a priority for titles which adds to the complexity and cost of game building. Beyond the game development process, this necessitates concerted, bespoke efforts towards marketing and creativity that need to be tailored for each individual game.

## Current Gaming Landscape on Arbitrum

Despite the lack of targeted incentives for games, the Arbitrum landscape has grown organically and is flourishing across the available ecosystems.

With additional incentives and strong programs like the Gaming Catalyst Program, the current builders and experts can help fuel exponential growth.

A non-exhaustive list of live gaming-related projects on Arbitrum includes:

- Game Ecosystems and/or Publishers:
- [Treasure](#) (first Arbitrum title launched Oct 2021; 10+ live games)
- [Xai](#) (no live games on Arbitrum; several titles in active development or migration)
- [Reboot](#) (first Arbitrum title launched Jan 2023)
- [Hytopia](#) (no live games on Arbitrum; first title in active development or migration)
- [Sanko GameCorp](#) (4+ live games and streaming platform live on Arbitrum, multiples games in active development or migration for Orbit Chain gaming ecosystem)
- [Treasure](#) (first Arbitrum title launched Oct 2021; 10+ live games)
- [Xai](#) (no live games on Arbitrum; several titles in active development or migration)
- [Reboot](#) (first Arbitrum title launched Jan 2023)
- [Hytopia](#) (no live games on Arbitrum; first title in active development or migration)
- [Sanko GameCorp](#) (4+ live games and streaming platform live on Arbitrum, multiples games in active development or migration for Orbit Chain gaming ecosystem)
- Live Games and Game Studios:
- [Pirate Nation](#) by Proof of Play
- [BattlePlan!](#) by Pixel Vault (part of Reboot)
- [Runiverse](#) by Forgotten Runes

- [The Beacon](#) by SkillCap Studios (part of Treasure)
- [Zeeverse](#) by Beetroot Lab (part of Treasure)
- [SMOL](#) (part of Treasure)
- [Mighty Action Heroes](#) by Mighty Bear Games (part of Treasure)
- [Kuroro Beasts](#) by Trudan Studios (part of Treasure)
- [Kaiju Cards](#) by Permadeath Studios (part of Treasure)
- [Knights of the Ether](#) by Merlyn Labs (part of Treasure)
- [Seekers of Tokane and Aurory Tactics](#) by Aurory
- [Bitmates](#) (part of Treasure)
- [Realm](#) (part of Treasure)
- [Tales of Elleria](#) (part of Treasure)
- [BattleFly](#) (part of Treasure)
- [Skyborne Legacy](#) by Revolving Games
- [Farcana](#) by Farcana Studio
- [Ruffion Reborn](#) by Forgotten Machine
- [Captain & Company](#) by KAP Games
- [Sakura Pinball](#) by Sanko GameCorp
- [Milady Tekken](#) by Sanko GameCorp
- [iSanko!](#) by Sanko GameCorp
- [Pirate Nation](#) by Proof of Play
- [BattlePlan!](#) by Pixel Vault (part of Reboot)
- [Runiverse](#) by Forgotten Runes
- [The Beacon](#) by SkillCap Studios (part of Treasure)
- [Zeeverse](#) by Beetroot Lab (part of Treasure)
- [SMOL](#) (part of Treasure)
- [Mighty Action Heroes](#) by Mighty Bear Games (part of Treasure)
- [Kuroro Beasts](#) by Trudan Studios (part of Treasure)
- [Kaiju Cards](#) by Permadeath Studios (part of Treasure)
- [Knights of the Ether](#) by Merlyn Labs (part of Treasure)
- [Seekers of Tokane and Aurory Tactics](#) by Aurory
- [Bitmates](#) (part of Treasure)
- [Realm](#) (part of Treasure)
- [Tales of Elleria](#) (part of Treasure)
- [BattleFly](#) (part of Treasure)
- [Skyborne Legacy](#) by Revolving Games
- [Farcana](#) by Farcana Studio
- [Ruffion Reborn](#) by Forgotten Machine

- [Captain & Company](#) by KAP Games
- [Sakura Pinball](#) by Sanko GameCorp
- [Milady Tekken](#) by Sanko GameCorp
- [Sanko!](#) by Sanko GameCorp
- Infrastructure:
- Core, Account Abstraction, Payments:
- [Thirdweb](#)
- [Alchemy](#)
- [Blockus](#)
- [Sequence](#)
- [Halliday](#)
- [Thirdweb](#)
- [Alchemy](#)
- [Blockus](#)
- [Sequence](#)
- [Halliday](#)
- Data & Analytics:
- [Helika](#)
- [Helika](#)
- Core, Account Abstraction, Payments:
- [Thirdweb](#)
- [Alchemy](#)
- [Blockus](#)
- [Sequence](#)
- [Halliday](#)
- [Thirdweb](#)
- [Alchemy](#)
- [Blockus](#)
- [Sequence](#)
- [Halliday](#)
- Data & Analytics:
- [Helika](#)
- [Helika](#)

## The Role of Game Publishers

Game publishers and gaming ecosystems play a crucial role in the gaming industry by providing teams with a range of benefits that often help to accelerate and further the chances of success for game developers, including but not limited to:

1. Financial Support: Game development is a resource-intensive process, and publishers can provide the necessary funding for developers. This financial support often covers development costs, marketing expenses, and other



operational needs, typically in exchange for future economic incentives and alignment through revenue sharing

2. **Expertise and Guidance:** Publishers typically have experienced teams with expertise in various aspects of game development, including design, marketing, distribution, and monetization. They can offer valuable guidance to developers, helping them navigate challenges and make informed decisions throughout the development process. On the monetization front, publishers can bring valuable insights into effective strategies, including pricing models, in-app purchases, monet strategies, and other revenue streams both in web2 and web3 contexts.
3. **Marketing and Promotion:** Publishers excel in marketing and promoting games to a wide audience. They leverage their established networks, relationships, and marketing channels to create awareness for a game through events, media relations, and driving user acquisition through paid marketing.
4. **Distribution Channels:** Publishers have established distribution channels, both digital and physical, allowing games to reach a broader audience. This can include partnerships with major distribution platforms (such as Epic Games, Steam, or the mobile app stores), brick-and-mortar retailers, and other distribution networks that help games reach players globally.
5. **Access to Resources:** Publishers can provide developers with access to additional resources such as advanced technology, licensing deals, proprietary tools, or quality assurance and playtesting support. This access can accelerate the development process and give studios an edge that otherwise would be difficult or time consuming to build as an independent studio.

## Network Dynamics

Other networks have a huge head start on Arbitrum and have made substantial investments towards gaming through the establishment of dedicated gaming teams and a dedicated allocation of funding.

Per the aforementioned research, Arbitrum recently exceeded Ethereum transaction volume on a 24h basis but is currently ranked 7th in terms of games onboarded. Furthermore, the network does not have a formal gaming incentives program like many network peers.

Comparables of gaming-focused grants and incentive programs across select peer networks (excludes generalized incentive programs; ordered by size):

- Immutable: \$500m Ecosystem Fund from June 17, 2022 ([link](#))
- Ronin: 150M RON or ~\$280M at time of writing from January 27, 2022 ([link](#))
- Avalanche: \$220m fund from March 8, 2022 ([link](#))
- Polygon: \$190M altogether - \$100m fund from July 21, 2021 ([link](#)) and \$90m+ Polygon Village fund from November 9, 2023 ([link](#))
- Solana: \$150m grant program from November 26, 2022 ([link](#))
- Optimism: \$2M retroactive grant to on-chain games from January 11, 2024 ([link](#)); excludes generalized incentives allocated to the Ecosystem Fund (including the Partner Fund managed by the Optimism Foundation) and RetroPGF

With the majority of the Arbitrum ecosystem's funds resting in the hands of the DAO, it is imperative that the Arbitrum DAO community mobilizes to seize the opportunity that lies ahead of us to become the web3 ecosystem of choice for games.

Major opportunity for growth with gaming set to onboard the masses

Gaming as a segment is highly retentive and sticky, and represents an opportunity to onboard a new user profile that is not only underrepresented on Arbitrum but who may be new to crypto overall. As an untapped addressable market of users, there's an opportunity to bring them into web3 through the lens of gaming and sell them on the wonders of the space.

- The landscape is beginning to heat up
- Still early days in general and is a ripe opportunity that Arbitrum should seize]

[

1024×576 36.4 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/e/eb7cf46e5fc6932d0c99450fb92ece84be1e79b7.png)

Although the average spend per user may be lower, gamers bring mass network activity and attention to ecosystems.

Gaming is a core use case for Arbitrum Stylus and Orbit



With the rollout of Orbit, teams now have a way to create their own L3 ecosystem built on top of powerful Arbitrum network technology. This advantage is perfect for games looking for performance, cheaper transactions, and curated networks customized for their use case.

Stylus opens the doors to thousands of developers coding in other languages to create their games within the Arbitrum ecosystem. The support for C++ brings on a very popular game development language right into EVM compatibility, lowering barriers to entry for game studios that are often staffed with technical teams focused on one developer stack.

Maintaining Arbitrum's technology lead and proliferating adoption of its products

Arbitrum boasts an impressive set of innovative technology and products through its Orbit stack which allows developers and protocols to inherit improvements such as AnyTrust and other forms of altDA, EVM+ compatibility via Stylus, BOLD's next generation fraud proofs, and Timeboost. This is all on top of significantly lower fees and faster blocktimes which is very conducive for the gaming use case.

In particular with Stylus, Stylus contracts are over an order of magnitude faster with significantly lower gas fees due to the superior efficiency of WASM programs. Memory is 100-500x cheaper when using Stylus, unlocking new use cases now that consuming RAM is viable on the blockchain. Compared to using Solidity, WASM programs are much more efficient. There are many reasons for this, including the decades of compiler development for Rust and C. WASM also has a faster runtime than the EVM, resulting in faster execution. Generally, a 10x improvement has been seen for contracts using WASM languages compared to contracts using Solidity. Use cases not practical in the EVM are now possible in Stylus. Computation is over 10x improved. Memory is over 100x improved. Cryptography libraries can now be deployed as custom precompiles, permissionlessly. Stylus applied to gaming will be a significant unlock for what will be possible through fully on-chain games and autonomous worlds. The greatest breeding ground for blockchain innovation has arrived.

## Overview: The Three Pillars of Building a Successful, Profitable Game

The three pillars are:

1. Positive unit economics: Per-capita revenue and cost optimization
2. Scale: Retention and user acquisition
3. A healthy dose of fun: Engagement

### Positive Unit Economics

Reaching positive unit economics means a game needs to make more money from users than they cost to acquire. The two components of positive unit economics:

User Acquisition

: Consistently optimizing user acquisition is critical to bring down the cost to acquire users. This means knowing what a user or cohort costs, where exactly they came from and how they engage with game through their full journey (ie. deep funnel).

Lifetime Value

(LTV): Diligently optimizing the game to increase LTV is a key to success. Games will never get it right the first time. Build systems (LiveOps, points programs, A/B testing) that allow optimizations to be implemented quickly. Use your system to measure results using statistically significant user cohorts, then implement the best configuration. Repeat ... repeat ... repeat ... and reach the break-even point where your user lifetime value exceeds the cost to acquire them.

[

1124x856 200 KB

](<https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/1/179c2d280cf89aa86828a0305d7f448266e6f9e6.jpeg>)

The path to positive unit economics

Scale

Scale is often thought of as user acquisition. This is incorrect: User acquisition is only one part of the equation, but is often a game's largest liability.

If this equation is not monitored closely and unit economics measured, a game will scale unsustainably, losing money and will not reach profitability.

Scale = Retention x User acquisition

With the proper systems in place, every user that churns is a data point that moves the game closer to profitability. Incremental optimization is how games go from zero to studio hero.

[

1234x926 185 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/a/a326e9e18b20d3c04ea2f4b4f54be38a59225fa6.jpeg)

Retention is a critical component of scaling sustainably

Healthy Dose of Fun

Fun is a requirement for success but on its own is not sustainable. Fun means user engagement; The actions taken or the frequency of play are example measures of fun. The issue with some Web3 games is they inflate these numbers with financial incentives. This makes their numbers look great short term but is unsustainable.

Example: A game reduced the ROI on farmers, did the engagement of regular users decrease? If the answer is yes, that is critical to know. "I should build a feature that offsets the loss in engagement we'll see when farming gets nerfed."

Striking a healthy balance between fun and sustainability is critical to have both engagement and profitability.

[

1078x846 238 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/7/76908e091d6d21daa9eb7cce47fc339871c4c932.png)

## How to Measure Success in Web3 Gaming

There are several phases to game development that each have their own measurements of success. As a game progresses through the phases of the game lifecycle it's critical these measurements for success are achieved at each stage.

### Phase 1 - Game Development

- Functioning core loop
- Game systems are configurable
- High quality taxonomy implemented
- Core understanding of LiveOps and how it will work in the game
- Planning user identities and attribution
- Plans for monetization

### Phase 2 - Alpha/Closed Beta

- What systems did not function as expected, including core loop, liveops and monetization systems
- Have all dysfunctional systems been restored?
- Game stability beyond 99.5%
- What is the NPS (net promoter score) from initial users? Is it above 50?

### Phase 3 - Open Beta

- What are the initial metrics on retention, engagement, and monetization?
- Where did drop-off in the user funnels occur?
- What exact marketing channel and marketing creative are generating our best users?
- A/B testing implemented and successfully deployed
- Are the game optimization mechanisms functioning as expected?

## Phase 4 - Game Launch

- Incremental and measurable improvements with each user acquisition push to both CAC and LTV
- Is our break-even point less than 1-year away?
- Which user acquisition channels are working and sustainable and which are not
- Is the Cost of Acquiring a User coming down over time? Is User Lifetime Value increasing over time?
- What percentage of users are payers?
- What response are the users demonstrating to features and liveops?
- Have we tested our marketing channels to ensure the economics hold true when scale is increased?

## Phase 5 - Growth

- Are we trending to positive unit economics?
- Have we been reliably exceeding our goals for both the cost to acquire users and lifetime value?
- Are unit economics holding true as we scale?
- Which marketing channels are performing best
- What segmented offers and experiences are being implemented
- STATS:
- ARPDau
- dX retention
- Engagement %
- Payer Percent
- Session length
- DOW frequency
- ARPDau
- dX retention
- Engagement %
- Payer Percent
- Session length
- DOW frequency

## Allocated Grants: Performance Based Milestones

It's important to keep in mind the complexity and scale of games varies game-by-game. Below are ranges based on averages:

### Phase 1 - Game Development

This phase is critical where all foundations of the game are set in place and initial benchmarks for performance are established. If the game design and tooling are not setup properly during this phase the game will struggle to reach break-even.

A grant of \$100,000 to \$1.5M is recommended depending on the scope and state of the project.

### Phase 2 + 3 - Alpha/Closed Beta and Open Beta

Phases two and three are intertwined with their shared focuses on refinement and optimization. It's during these phases that positive unit economics must be achieved before launching and scaling the game.

A grant of \$250,000 to \$500,000 is recommended which is lower than phase one because this phase is focused on refinement.

## Phase 4 + 5 - Game Launch and Growth

These phases are both intertwined as they're focused on launch and sustainable growth. It's critical that as the game scales it's continuously optimized to reduce the cost to acquire users while increasing their lifetime value.

A grant of +\$1.5M is recommended which is the highest given the majority is allocated to launch and user acquisition.

[

1600×898 258 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/2/2dc1148d97c6c3084b301936e532acff30293650.jpeg)

## Opportunities and Next Steps

The Gaming Catalyst Program (GCP) is a model to rapidly accelerate Arbitrum's support for game builders and also strategically allocate funding and resources towards vetted experts to help accelerate the onboarding and go-to-market of the best builders in the gaming industry.

Learn more:

- [Open Draft](#)
- Forum Post [TBD]
- [Working Group on Telegram](#)