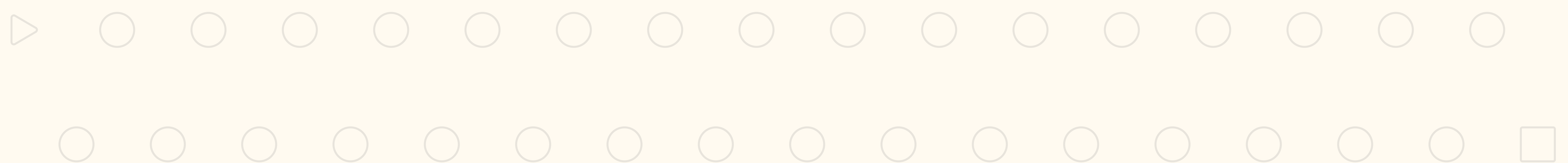


STAR ATLAS

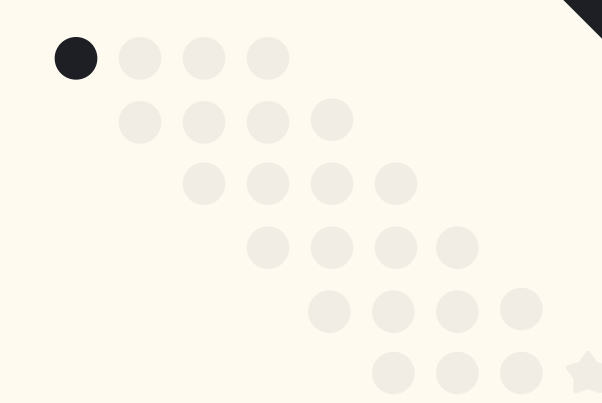
A SUSTAINABLE GOVERNANCE FRAMEWORK *FOR THE STAR ATLAS DAO*

ATMTA, INC., FOR THE STAR ATLAS DAO.
SEPTEMBER 2022



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01

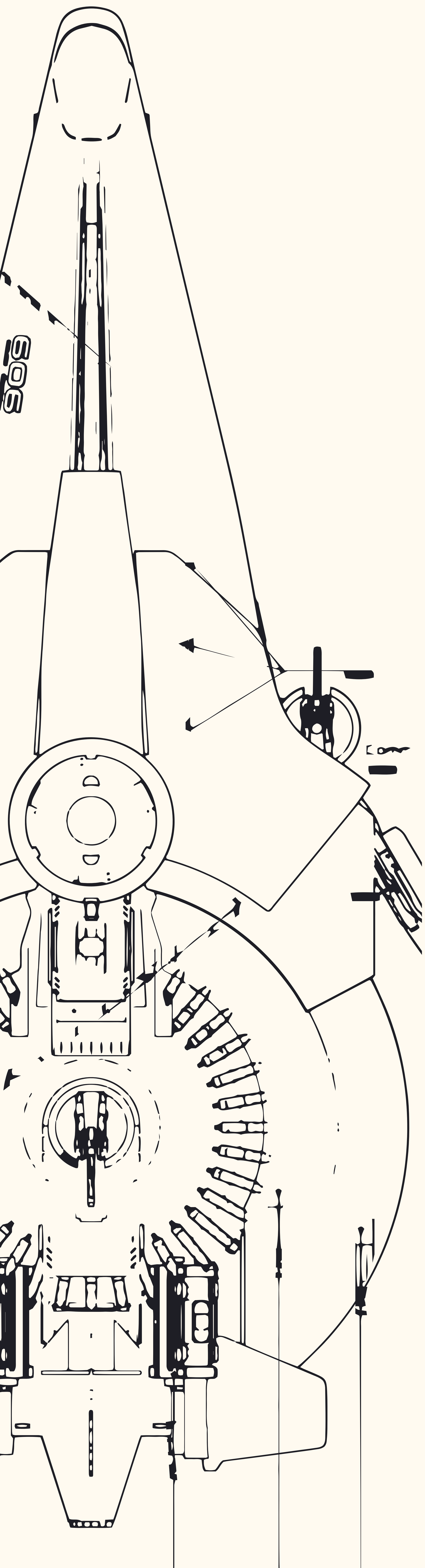
Introduction

STAR ATLAS IS BUILT ON A COMMUNITY-FIRST AND COMMUNITY-DRIVEN ETHOS. STAR ATLAS ASSETS ARE OWNED BY PLAYERS VIA NON-FUNGIBLE TOKENS. ALL CRITICAL GAME LOGIC LIVES IMMUTABLY AND TRANSPARENTLY ON THE BLOCKCHAIN. ECOSYSTEM DEVELOPMENT IS INCREASINGLY LED BY COMMUNITY DEVELOPERS. THE FATE OF THE STAR ATLAS METAVERSE IS IN THE HANDS OF A DECENTRALIZED AND DIVERSE COMMUNITY EXPRESSING ITS WILL VIA ON-CHAIN GOVERNANCE.

SUSTAINABLE DECENTRALIZATION, HOWEVER, IS NOT EASILY ATTAINED OR MAINTAINED, PARTICULARLY WHEN THE GOAL IS TO KEEP FORWARD MOMENTUM TOWARD DELIVERING HIGHLY COMPLEX AND IMMERSIVE METAVERSE EXPERIENCES. WE BELIEVE THAT THE LONG-TERM SUCCESS OF STAR ATLAS'S DECENTRALIZED GOVERNANCE SYSTEMS ONLY ARE ACHIEVABLE WITH A HIGH DEGREE OF TRANSPARENCY, CAREFUL ADVANCE PLANNING, AND THE COLLECTIVE EFFORTS OF THE MEMBERS OF OUR COMMUNITY.

THIS PAPER DESCRIBES THE PATH TO THE COMPLETE AND SUSTAINABLE DECENTRALIZATION OF STAR ATLAS — WHY WE NEED IT, WHERE WE ARE TODAY, AND WHERE WE ARE HEADED TOMORROW. WE HOPE YOU, AS PART OF THE STAR ATLAS COMMUNITY, WILL HELP US ITERATE ON THE CONCEPTS IN THIS PAPER SO WE CAN SHAPE OUR GALACTIC GOVERNMENT.

TOGETHER, WE WILL BRING POWER TO THE PEOPLE.



Introduction

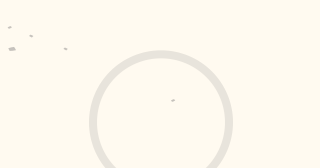


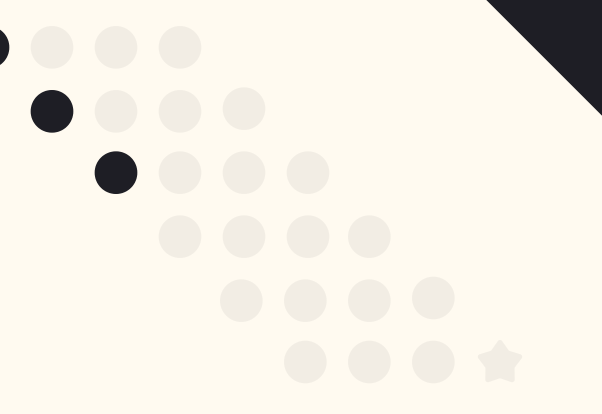
Disclaimer

This paper is an academic publication intended to inform and encourage public discussion by Star Atlas community members about governance issues and the decentralization of the Star Atlas metaverse. The Star Atlas DAO, which in some cases acts through the Star Atlas Foundation, has requested or commissioned this paper for publication. This paper includes work undertaken by researchers, employees, consultants, or service providers of ATMTA, Inc. for the benefit of the Star Atlas DAO.

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Executive Summary



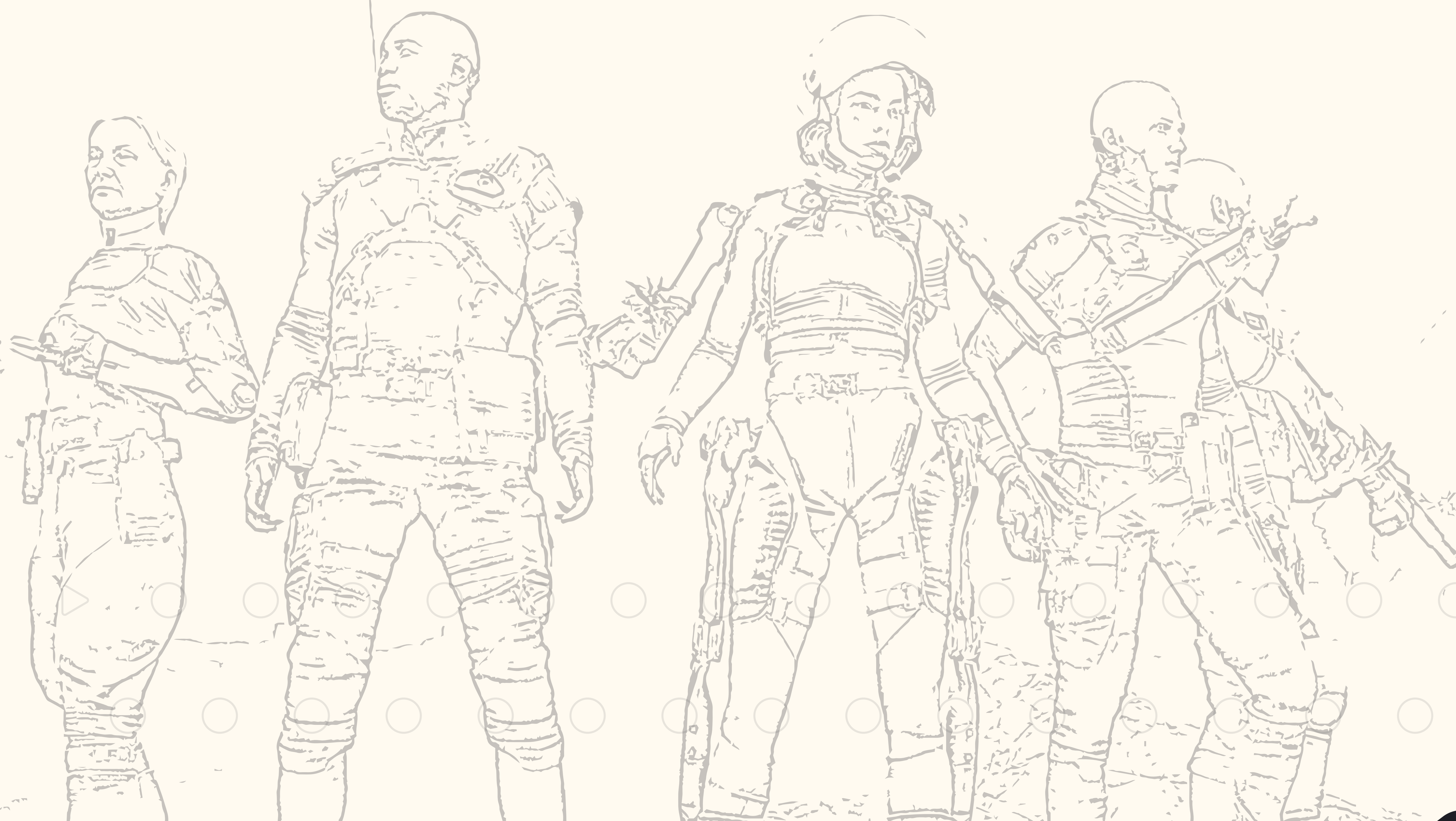
The growth of web3 in recent years has been a Cambrian explosion of creativity, deep community engagement, innovative economic activity, and mind-altering new technologies — all premised on cryptographic primitives that enable a variety of trustless transactions. Web3 has brought about new forms of decentralized finance, which eliminate the need for gatekeepers and intermediaries in financial transactions, as well as the concepts of true ownership and provenance of digital assets through non-fungible tokens ("NFTs"). These technologies, and more, are essential to the complex gaming and economic aspects of the Star Atlas metaverse.

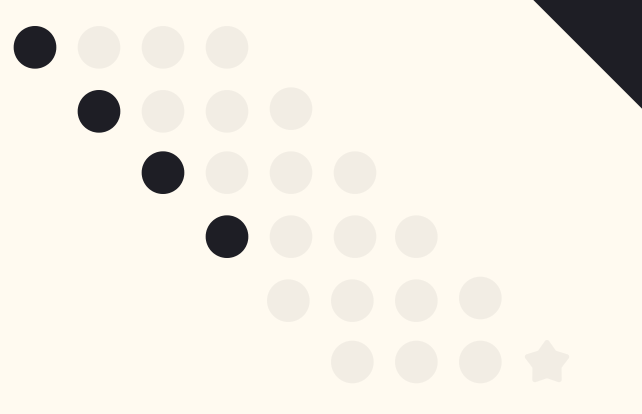
This paper focuses on web3's innovation in community-building and governance by tokenholders — decentralized autonomous organizations ("DAOs"). Although DAOs are nascent and fast evolving, we expect them to expand in scope, mature, and begin enabling digital democracies on an unprecedented scale.

An active DAO is essential to empowering the builders and gamers of Star Atlas. Decentralization on all layers of the Star Atlas experience — gaming, economic, and governance — is a core web3 ethos and has practical implications as well. It aligns creators' incentives with consumers, fostering innovation from all participants. It lowers access barriers and removes rent-extracting middlemen. It enables transparent, frictionless self-governance by a global community without needing to rely on untrustworthy intermediaries. And it underpins censorship resistance, meaning that Star Atlas, once its systems have been fully built and deployed to the blockchain, could live practically forever.

Without a sustainable structure, however, total decentralization would be ephemeral at best. The space is littered with abandoned projects that lost vision and momentum when attempting to decentralize too quickly; that failed to make any meaningful progress towards decentralization and lost sight of the community-first web3 ethos; that launched a DAO without sufficient safeguards or preparation and fell to exploits. The Star Atlas DAO must not only be fully decentralized, it also must be built to last.

In this paper we explore, in three parts, how Star Atlas can achieve a sustainable governance framework.





Executive Summary

○ Part I : The Importance of Decentralization

Part I discusses the overarching goal of achieving decentralization. We explain why decentralization is mission critical and how DAO structures are uniquely well-suited for an ambitious project like Star Atlas. We also observe what is and is not working for other DAOs.

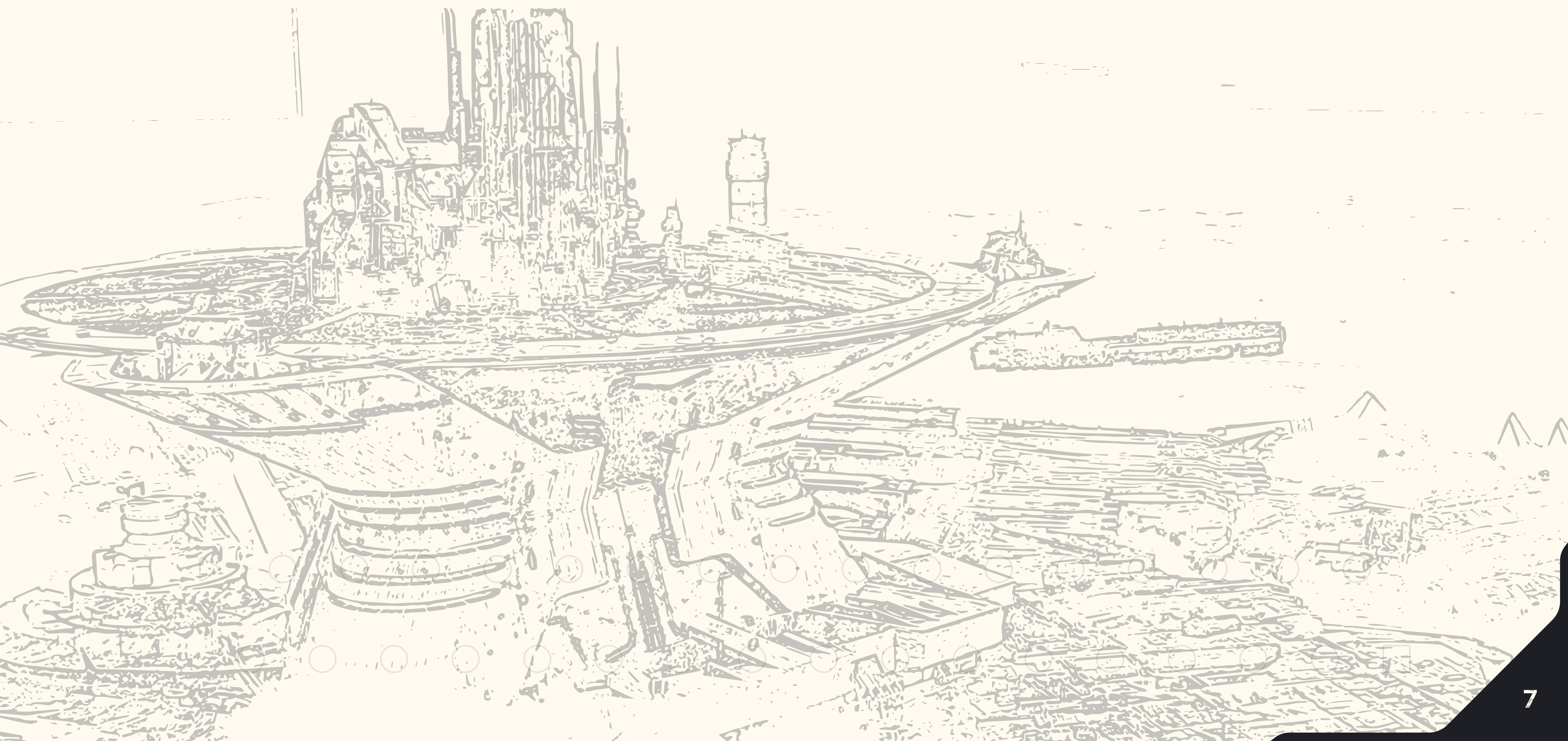
○ Part II : Star Atlas Today and Tomorrow

Part II describes the vision for the structure of the Star Atlas DAO — what it is today and what it will be tomorrow. While Star Atlas is by many measures already well on the path to full decentralization, we will explore the aspects of Star Atlas that could, with the community's collective effort, become more censorship-resistant, decentralized, autonomous, and sustainable.

○ Part III : A Sustainable Governance Framework

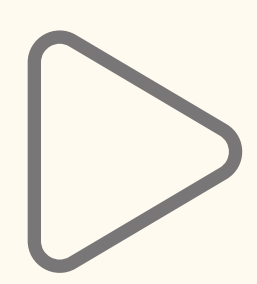
Part III sets forth our vision for a sustainable governance framework. This is a work in progress because it needs your input — as the community ultimately will decide how it will govern itself.

We hope this paper demonstrates our commitment to transparency and decentralization, as we want to create a community that could last for eons. We think of the growth of Star Atlas as mirroring the birth and expansion of the universe itself, which began from a central point — a singularity — and rapidly grew from the Big Bang to the accelerating expansion of the present day. That is and will be our journey together.



Part I :

The Importance of Decentralization



In Part I, we cover the importance of decentralization as an overarching goal, particularly for gaming projects that represent some of the most complex development efforts in the web3 space. We then discuss the state of DAOs today — what is working and what is not. In no way is this Part I meant to be comprehensive; plenty has been written on these subjects already. We focus only on essential observations that inform how we think about the Star Atlas DAO.



▶ Decentralization for Gaming Projects

Web3 has fundamentally changed the relationship of creators and consumers by aligning their incentives in a radical departure from web2's traditional and inefficient value models. Incentive alignment is especially beneficial for gaming projects. In web2, studios create a game and "sell" access to the game — but players only receive temporary permission to play, like getting a ticket to visit an amusement park. Players might, for example, spend over \$500,000 to max out their Diablo Immortal character,¹ but at the end of the day they have not bought and do not own any actual game assets. While they derive entertainment utility from playing the game, most of the value put into a web2 game flows to the studio — not just monetary but also the value of the time and effort that gamers provide in building a community, such as through social media. Moreover, access to web2 games, especially for online-only play, depends on a game studio's continued support that may evaporate at any time.²

Web3 aligns creators' and consumers' incentives by spreading around ownership rights in digital assets to those who create content (studios and other active community members) and those who consume it (gamers). Web3 gives those ownership rights *permanence*, *economic utility*, and *censorship resistance*.

○ Permanence

is achieved by deploying as much protocol and governance logic on-chain. In other words, NFTs confirm the ownership of a digital asset and immutable smart contracts control protocol logic that will continue running for as long as the underlying blockchain network keeps running.

○ Economic Utility

is achieved through interoperability of digital assets, which can be seamlessly imported from one ecosystem to another either directly or by the transfer of relative value through on-chain trading of underlying digital assets.

○ Censorship Resistance

is achieved when no single actor — whether the founder, another community member, or an external agent — can exert excessive influence over the protocol such that they can unilaterally alter the protocol, shut it down, or cause it to fail simply by leaving the scene. Decentralization is a fundamental requirement of achieving censorship resistance.

Part I :

The Importance of Decentralization

While the primary purpose of any game is to provide entertainment value, for which creators can and should be directly compensated, web3 enables all participants to share in the further value and control of an ecosystem.

For Star Atlas, it has been and will be the case that all game assets are validated on-chain and all critical game logic with any economic impact is conducted on-chain. A player's game assets are truly theirs, with ownership confirmed by NFTs, and the game would remain playable for as long as the underlying blockchain has active validators — effectively forever. And the governance layer in Star Atlas is built to last effectively forever as well, becoming what over time may less resemble mere gameplay and more an expansive digital society.

The key to achieving that long-term vision of a self-sustaining digital society depends on achieving censorship resistance through decentralization over time. Star Atlas needs to be governed by a fully decentralized and well-designed DAO.

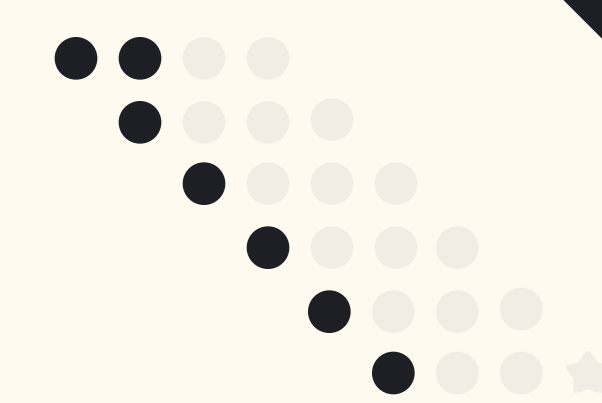
▶ DAOs Today

Lately, DAOs have been spinning up at Ludicrous Speed. Every web3 project is intent on forming a DAO, often with little regard to building a properly functioning and sustainable governance structure. The media has started covering — in a bewildered tone — DAOs that have formed for myriad purposes such as raising funds to purchase a rare vintage art book (without acquiring the necessary legal rights to develop the book into a derivative work as intended) and to purchase a copy of the United States Constitution (and getting outbid at the auction).³ Meanwhile, legal experts have come up with new suggestions for DAO structures seemingly every few months.⁴ It's a chaotic space.

But one thing is clear: while DAOs may serve a lot of different functions and take a lot of different forms, they share a common thread of enabling trustless, collective decision making — a true innovation in governance. Features unique to DAOs include:

- **Low barriers to citizenship**, because all that is required is control of the governance token.
- Unprecedented **alignment of incentives** among the users and controllers of a protocol.
- **Unprecedented transparency** — all votes are visible on an immutable blockchain.
- **24/7 governance mechanisms** often with immediate execution.
- **Nearly frictionless decision making** across borders and around the globe.
- **Elimination of intermediaries** from the decision-making process.
- **Composability** — governance rights are composable and can have additional utility layered on.

These features underscore the importance of DAOs in the evolution of human coordination systems, which over the millennia have included theocracies, monarchies, democracies, and various types of business associations, among many others. In many respects, DAOs improve on what has come before and open the door to completely new community frameworks that require web3 technology to function — meaning they cannot be mapped onto a traditional business association.



Part I :

The Importance of Decentralization

A lot has been written on DAOs already — including in the Star Atlas Economics Paper (<https://staratlas.com/assets/pdfs/economics-paper.pdf>) — so this paper assumes a base level of familiarity with DAOs and does not cover them extensively here.

- M. Boiron, Sufficient Decentralization: A Playbook for web3 Builders and Lawyers (Aug. 2, 2022), <https://variant.fund/articles/sufficient-decentralization/>
- J. Walden, Progressive Decentralization: A Playbook for Building Crypto Applications (Jan. 18, 2020) <https://jessewalden.com/progressive-decentralization-a-playbook-for-building-crypto-applications/> (providing a step-by-step framework for achieving community ownership).
- G. Shapiro, Defining Decentralization for Law (Apr. 15, 2020), <https://lex-node.medium.com/defining-decentralization-for-law-58ca54e18b2a> (discussing why decentralization is significant from a legal and regulatory perspective).
- World Economic Forum, Decentralized Autonomous Organizations: Beyond the Hype (June 23, 2022), <https://www.weforum.org/whitepapers/decentralized-autonomous-organizations-beyond-the-hype> (providing a brief overview of types of DAOs and the challenges they face).
- Kraken Intelligence, DAOs: A Community Built on Code (Feb. 10, 2022), <https://blog.kraken.com/post/12927/daos-a-community-built-on-code/> (surveying the types of DAOs in operation today).

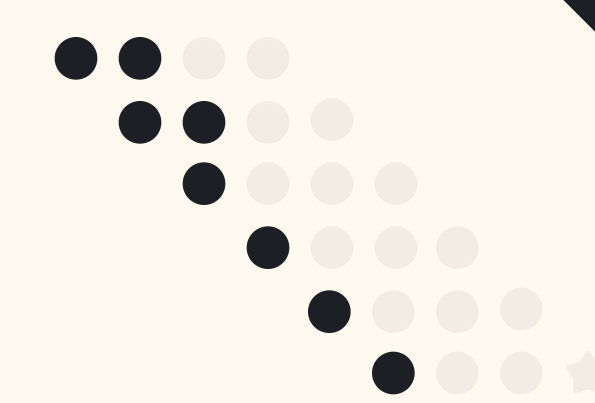


► Challenges Faced by DAOs

Granted, DAOs are not a panacea for all human coordination problems. Even in their short history, DAOs have faced numerous challenges, including:

- **Decentralizing too quickly without a plan to achieve product market fit**, causing a project to lose momentum and focus and potentially fail.⁵ Too many cooks spoil the broth — at least early on in a project's lifecycle.
- **Making ill-informed or even illegal decisions** based on popular vote without regard for broader consequences, without following sensible procedures to protect due process, and without seeking input from advisors or specialists.⁶





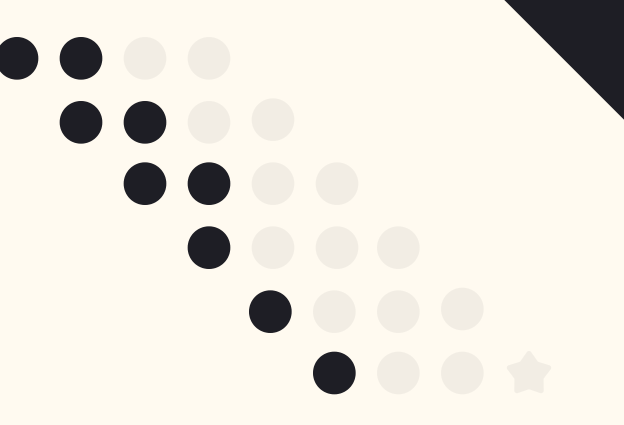
Part I :

The Importance of Decentralization

► Challenges Faced by DAOs (cont.)

- **Inconsistent decision making**, sometimes with a DAO reversing course literally overnight.⁷ Although all sorts of governments and other governing bodies make decisions that depart from prior practice, doing so within a single day is a pivot uniquely made possible by DAOs, calling into question the reliability of a DAO's decisions or commitments.
- **Susceptibility to exploit** if a vulnerability exists in the DAO's governance code.⁸ Often, DAOs are spun up without adherence to fundamental cybersecurity procedures. No surprise, then, that most exploits in the web3 space took advantage of unaudited smart contracts.⁹ Exploits also can occur through centralized services used by DAOs or their project teams — and these also can lead to substantial community harm.¹⁰
- **Low participation rates** among voters due to the free rider problem, with less than 10% of the electorate showing up even for important votes at most DAOs. A review of Snapshot, one of the more commonly used voting platforms used by popular Ethereum-based DAOs, underscores the low voter turnout in most DAO decisions.¹¹ Low voter turnouts lead to increased concentration of power in fewer, highly active DAO members, which can counteract the goals of decentralization.
- **Reliance on centralized technologies** particularly on blockchains with a relatively shorter development history, like Solana. Essentially all DAOs rely to some extent on technologies that are not fully censorship resistant, and most rely on web2 services such as Discord or Discourse to facilitate community governance discussions.
- **Lack of regulatory and tax clarity** around the rights and obligations of DAO members and the DAO itself, which is an impediment to broader adoption by new entrants to the web3 ecosystem. A startup that does not depend on unique web3 utility is likely better served by forming as a traditional business association and not a DAO.¹²
- **Lack of precedent for a sustainably decentralized and functional and post-product launch gaming DAO.** While there are numerous gaming DAOs, none have achieved both a complete product launch (especially a complex, AAA-quality game that takes years to develop) and full and sustainable decentralization.¹³

Given the nascent nature of the web3 space, DAO governance trends are likely to evolve quickly. The list of what has gone wrong with various DAOs will grow larger. But so too will the success stories, as global communities — like the one we have here at Star Atlas — grow stronger, solve problems together, and build complex and durable digital societies.



04

Part II :

Star Atlas Today and Tomorrow



In this Part II, we describe (1) our thoughts on an effective governance framework in general; (2) the state of Star Atlas today; and (3) the goals for Star Atlas tomorrow.



▶ An Effective Governance Framework

Let's start with a simple concept — how effective organizations make and carry out decisions. We think an effective governance framework can be distilled into three levels at which decisions must be made: **vision**, **strategy**, and **execution**.

○ Vision

requires ideating at the highest level. Those providing vision think about where the organization should go and, in general terms, how to get there. Requires deep, principled thinking and careful decision making that always is consistent with the organization's core values.

○ Strategy

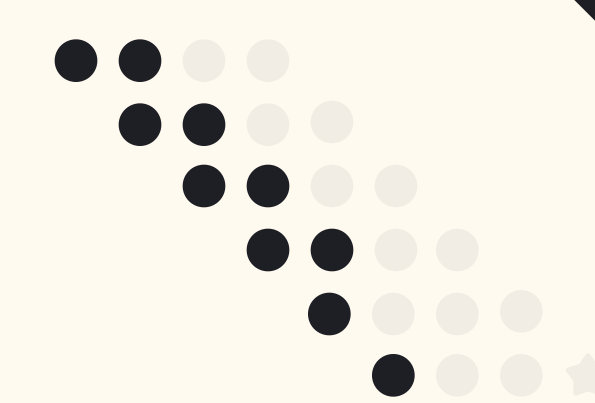
requires coming up with a workable approach to carry out the vision. Strategy focuses on aligning vision- and execution-level decisions.

○ Execution

requires implementing the strategy in a practical, boots-on-the-ground manner. Granular local knowledge¹⁴ is critical to executing on a strategy.

Every effective organization follows this basic structure. In companies, vision is set forth by a board of directors, major shareholders, and upper management, in accordance with the company's larger purpose as set forth in the company's organizing documents and mission statement; strategy is developed by middle management; and execution is carried out by lower ranking team members. In governments, vision is set by the most senior officials in accordance with a constitution or other central body of law; strategy is developed by mid-ranking officials; and execution is left to public servants with local knowledge.





Part II :

Star Atlas Today and Tomorrow

▶ Star Atlas: The State of Decentralization Today

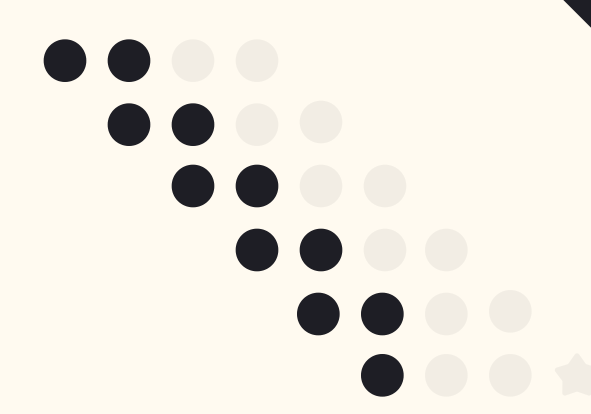
In 2020, ATMTA, Inc. ("ATMTA"), a game development studio based out of the United States, began creating Star Atlas. ATMTA is a company in the traditional mold. It is registered as a Delaware corporation and, as of this writing, retains the services of over 200 team members (i.e., employees, contractors, and vendors) who bring expertise in myriad fields that include game development, blockchain engineering, creative writing, 3D and 2D art and design, marketing, economic analysis, finance, human resources, legal services, and others.

Throughout 2020 and 2021, the ATMTA team built many of the experiences that define Star Atlas, such as ship NFTs and the first playable experiences such as Ship Commissions on Remote Expeditions ("SCORE"). Those products were ideated by ATMTA's management (vision), strategized by ATMTA's project managers (strategy), and implemented by ATMTA's artists, coders, writers, and more (execution). In other words, ATMTA drove the early development of Star Atlas as the ecosystem's initial contributor. After all, decentralization and efficiency are natural tradeoffs and efficiency reigns supreme early in a project's lifecycle — and in fact complete decentralization on day one is impossible to sustain.¹⁵

The story today, however, is quite different: ATMTA is not alone in building Star Atlas. Far from it — the Star Atlas community has displayed immense activity and creativity in developing various aspects of the ecosystem, all completely independently of ATMTA. Some examples include:

- ***The Club's Pitstop***: A one-stop resupply and claiming tool that interacts directly with SCORE's on-chain programs, built by The Club guild.¹⁶
- ***Redspatula's Star Atlas Ships Pricing Tool***: A tool aggregating data on Star Atlas ships built by Redspatula.¹⁷
- ***RatOnaut's TUFA Attack***: An arcade-style shooting game set in the Star Atlas metaverse developed by active community members RatODoom and SpriteVonPixel.¹⁸
- ***COEXIST's Star Atlas Unreal Engine Game***: An immersive tutorial and other game experiences in Unreal Engine 5 under development by the COEXIST guild.¹⁹
- ***StarTech Hub***: A fleet resupply, news and media hub, DAO recruitment, and job search tool built by Arazdeveloper.²⁰
- ***The Hologram News Network***: A news site dedicated to Star Atlas-related news developed by the independent entity, the Hologram News Network.²¹
- ***Galactic Dash***: A dashboard with metrics focusing on Star Atlas ships, politics, and economics by Kenemo.²²
- ***Atlas Theory***: Video content creation dedicated to Star Atlas created by a community member.²³





Part II :

Star Atlas Today and Tomorrow

▶ Star Atlas: The State of Decentralization Today (cont.)

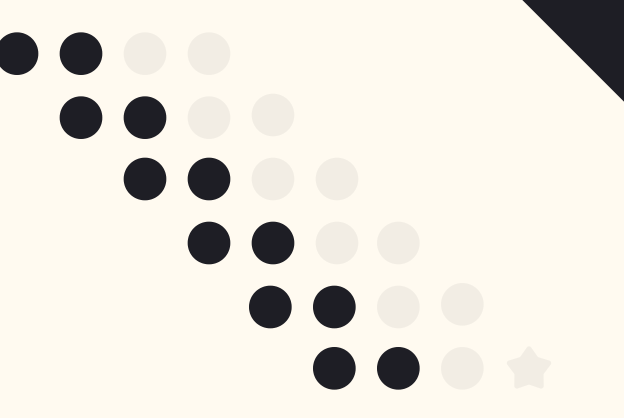
- **The Bounty Bar's Cocktail NFTs**: Star Atlas-themed drink NFTs created by the Bounty Bar, a group of community developers.²⁴
- **Fleet Pass**: A fleet manager tool created by the Deep Profits guild.²⁵
- **Star Atlas Tools**: A browser extension that enhances the Star Atlas game experience by Blulce81.²⁶
- **Star Atlas Wiki**: A community-created and curated wiki for Star Atlas.²⁷
- **Star Atlas Italia's Fleet Management Tool**: A fleet management tool built by the Italian guild Star Atlas Italia.²⁸
- **Star Dust Economy**: Analytics tools for the Star Atlas metaverse, built by community members.²⁹
- **Star Atlas Guilds**: A website aggregating various active Star Atlas guilds, built by a community member.³⁰
- **Star Atlas Guides**: A set of guides for Star Atlas beginners built by a community member.³¹

... that is just the tip of the iceberg, as the Star Atlas community continues to grow well into the hundreds of thousands from all around the globe, assisted in no small part by the community's willingness to share and translate the Star Atlas vision into other languages.³²

Moreover, the Star Atlas ecosystem is more decentralized and censorship resistant than may be apparent at first glance, because Star Atlas game systems are hard-coded to use as much **on-chain game logic and permissionless tools** as possible — meaning the parameters of game design are immutable and verified by a distributed network of blockchain validators. ATMTA is committed to deploying as much game logic on-chain as possible in a strategy that sets Star Atlas apart from most other blockchain games. Moreover, all Star Atlas assets are by their nature NFTs on the blockchain that the community can interact with directly without having to use any ATMTA-provided frontends.

To summarize the state of Star Atlas today: Star Atlas is, at its core, community-driven — a fact that underpins all design and development decisions. Accordingly, ATMTA has placed a high priority on providing transparency to the community, engaging in frequent and substantive community discussions, incorporating community ideas, and encouraging community-led projects by independent developers. ATMTA is fully aware that ultimately it is no more than just one of many service providers for the Star Atlas DAO.





Part II :

Star Atlas Today and Tomorrow

▶ Star Atlas: Goals for Tomorrow

The future of Star Atlas will continually progress towards being more decentralized, more sustainable, and more structured around community-led initiatives. Based on our understanding of an effective governance framework and what we have seen does and does not work in the DAO space today, we believe Star Atlas must focus on emphasizing three overarching goals to support that decentralized vision: (1) quality and safety, (2) being community owned and community built, and (3) sustainable governance.

Goal 1: Quality and Safety

When people think of Star Atlas, they should think of it as a high-quality and safe experience. This means the whole package: an award-winning website that shapes the public's first impression of Star Atlas,³³ high quality art for in-game assets, deeply immersive in-game visuals, exciting gameplay with a deep and varied economy, and maintaining a top-tier track record of cybersecurity practices.

○ Quality Leads to Immersion.

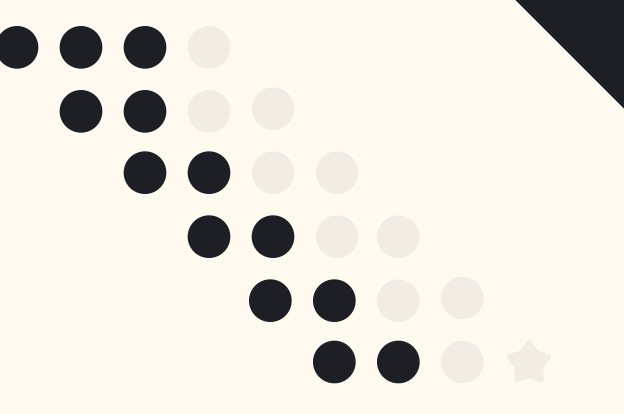
We believe that the technology now exists to facilitate a truly immersive metaverse experience — one that will inspire the dreams of our community and the public at large. We at ATMTA are committed to setting an extremely high bar for initial look and feel and quality expectations for Star Atlas. By putting quality first — and setting the bar with the full efforts of ATMTA's team of 200+ builders and contributors — we hope to drive community-led efforts that match or exceed those initial expectations.

○ Safety First.

A decentralized community must have a solid reputation for cybersecurity practices, particularly given the history of breaches in web3. Failure to pay sufficient attention to security, particularly on a repeated basis, can lead to significant harm to the community. ATMTA is committed to ensuring that all critical smart contracts affecting economic activity and users' assets must be audited by reputable auditors such as Kudelski Security³⁴ and others. Code will be tested before deployment. ATMTA also will retain, for the benefit of the Star Atlas DAO, control of emergency powers to prevent or mitigate dangerous situations, with those powers phasing out as the Star Atlas DAO matures and the smart contracts prove reliability over time. While ATMTA and the Star Atlas DAO cannot make any safety guarantees — there always are risks inherent to irreversible transactions in web3 — risks should be mitigated as much as possible.

Strong quality and safety expectations are a necessary foundation for sustainable community growth.





Part II :

Star Atlas Today and Tomorrow

▶ Star Atlas: Goals for Tomorrow (cont.)

Goal 2: Community Owned and Community Built

At Star Atlas, the community comes first. Our community is empowered by having true ownership of Star Atlas assets, a high degree of transparency and visibility into all aspects of decentralized development, and access to tools necessary to facilitate community-led development.

○ True Community Ownership.

One of the major design decisions underlying all of Star Atlas is the choice to ensure game assets are validated as NFTs, make as much game logic live on-chain as possible, and deploy governance smart contracts and other code to be as fully decentralized and autonomous as possible. While many blockchain games are "solving" for web3 by having most game logic and activities take place on centralized servers and only occasionally exporting NFTs and other assets to the blockchain, Star Atlas has a different goal in mind to achieve maximum community ownership and therefore censorship resistance. Star Atlas will be a game and metaverse experience that will last for as long as the underlying blockchain network keeps validating transactions — effectively to the end of time — and all assets will be owned by the players.

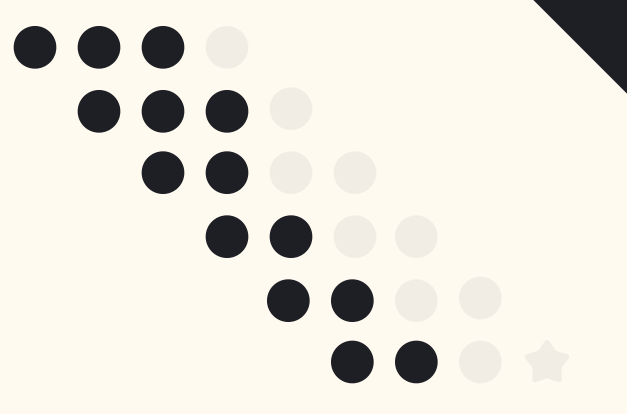
○ Community Transparency.

Our community is unparalleled in its devotion to being an active part of the ecosystem, and ATMTA is honored to play a role in facilitating that activity by providing deep and frequent insight into the development process. ATMTA has been publishing weekly roadmap updates, hosting regular town halls, answering the community's questions in Discord, publishing reports like the recent State of the Economy report,³⁵ and hosting larger community events like the Council of Peace Assembly event in June 2022.³⁶ ATMTA prides itself on its longstanding commitment to transparency and intends to maintain a high level of engagement going forward as Star Atlas development increasingly is led by other members of the community.

○ Community-Led Development.

We look forward to the moment when community-led development exceeds ATMTA's own efforts — it is an exciting and welcome prospect. Once initial look and feel and quality expectations are established, the Star Atlas ecosystem will open up further and support increased development of assets and experiences by community members and guilds. ATMTA is building tools and software development kits to facilitate such development — expect to hear more on that front soon.





Part II :

Star Atlas Today and Tomorrow

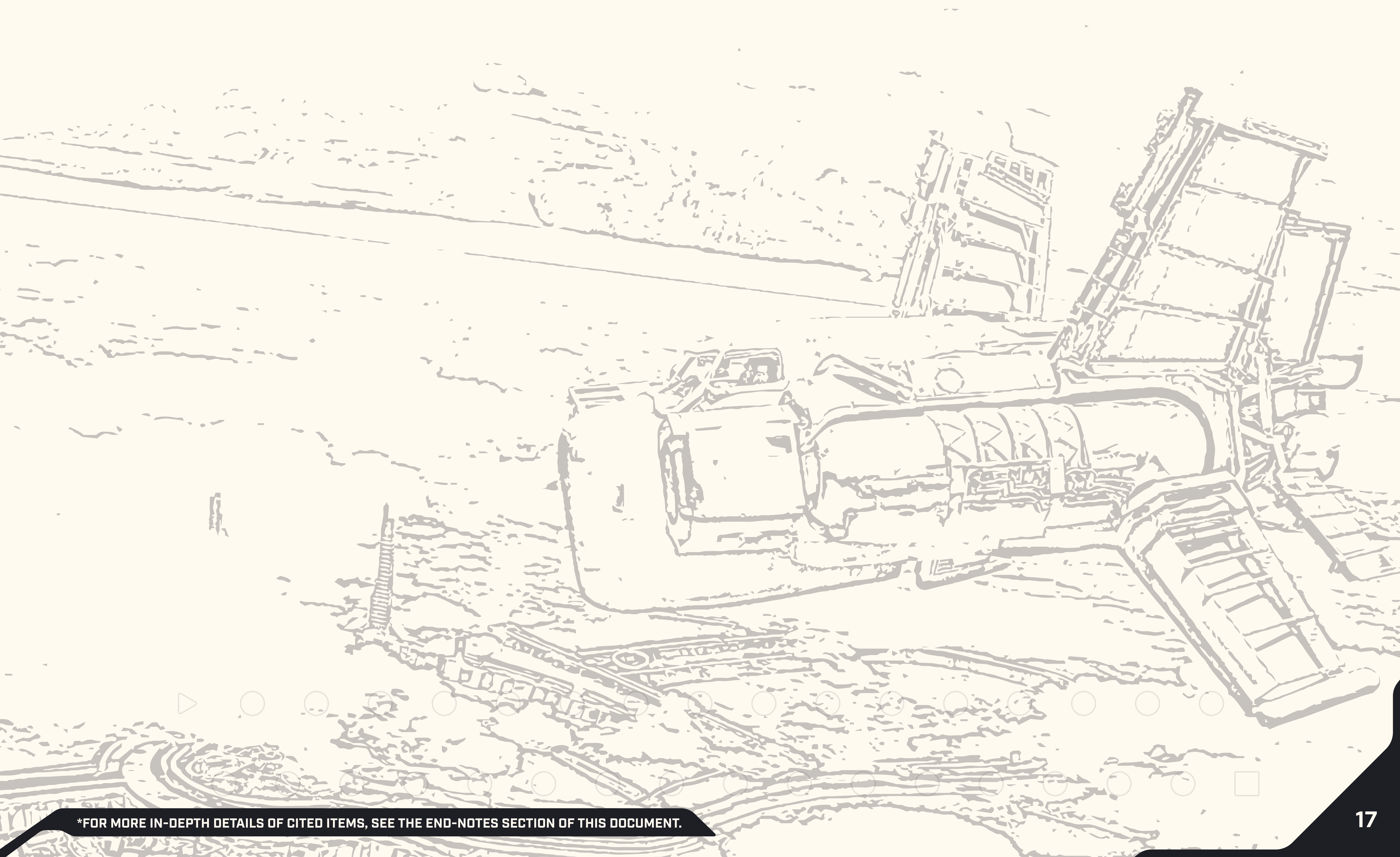
▶ Star Atlas: Goals for Tomorrow (cont.)

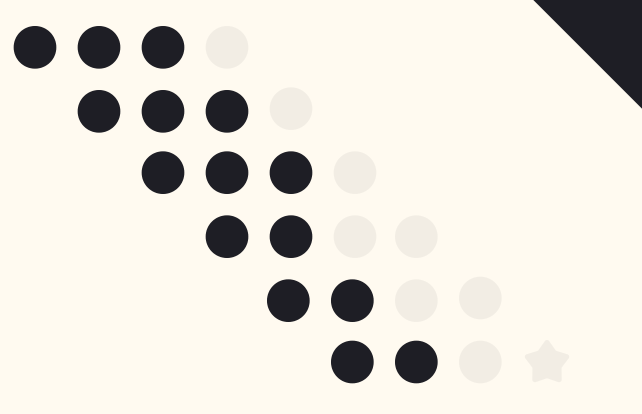
Goal 3: Sustainable Governance

The governance of Star Atlas is intertwined with the broader lore of the game and metaverse, as citizens jockey for control of the galaxy both through military might (expressed through their fleets) and political maneuvering (expressed through votes at the Star Atlas DAO and lower-level DAOs).

○ Thoughtful Governance Structures.

Given the lessons learned from observing others throughout the ecosystem, we believe the Star Atlas DAO will benefit from having a multi-pronged governance structure that operates on both a code level (via on-chain governance by POLIS token-holders) as well as on a social layer (via a constitutional and council-guided system), all described in greater detail in Part III. When it comes to on-chain voting, vote weight also is proportional to a citizen's long-term commitment to the Star Atlas ecosystem, and participation in the Star Atlas DAO will be intertwined with a lore-based game of political intrigue and maneuvering. We believe these and other features will address low voter turnout and high voter fatigue experienced by other DAOs.





Part III :

A Sustainable Governance Framework



Complete decentralization requires careful progression. It cannot exist, at least not sustainably, on day one, but once achieved it lends considerable strength and stability to a digital society. Through that lens, we are focused on Star Atlas consistently taking steps to becoming increasingly decentralized while adhering to a sustainable and effective governance framework. The critical components of that framework — described in this Part III — include the Star Atlas DAO, the Star Atlas Constitution, the Star Atlas Council, the POLIS Improvement Proposal process, the Star Atlas Foundation, and numerous third-party services providers (such as but not exclusive to ATMTA).



▶ The Star Atlas DAO and Its Treasury

The Star Atlas DAO makes decisions with the broadest impact on the Star Atlas ecosystem. Its decisions reflect all community interests, shape the fundamental direction of the ecosystem, and should be consistent with solid first principles of the Star Atlas metaverse (see the section below on the Star Atlas Constitution). The Star Atlas DAO is the top-level DAO over any sub-DAOs reflecting regional, factional, and local or guilds' interests.

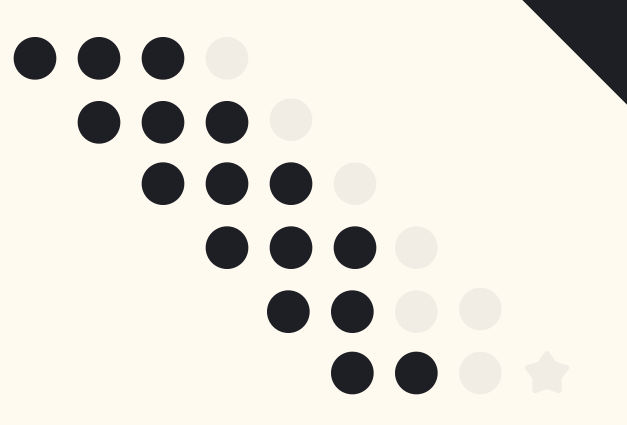
The Star Atlas DAO is one and the same with the Star Atlas community. The community is comprised in the broadest sense of the ecosystem's entire population, including those who play Star Atlas games, participate in community discussions, run businesses in the Star Atlas metaverse, buy and sell Star Atlas digital assets, or merely visit or observe a Star Atlas metaverse experience. All community members are encouraged to participate fully in the DAO's experiences and public discussions.

Only those who lock POLIS tokens in the DAO (located at <https://govern.staratlas.com>), however, have the power to vote on decisions that can shape the destiny of the DAO. To encourage active participation by those with the longest-term commitment to the DAO, members of the DAO have POLIS voting power ("PVP") commensurate with the duration and amount of their locked POLIS.

The Star Atlas DAO exercises control over several key functions:

- The DAO's treasury and its deployment and management.
- Monetary policy in the Star Atlas metaverse, including taxation of in-game activities and ATLAS and POLIS tokenomics and emissions (which are contained in rewards pools controlled by the DAO).
- Broad decisions shaping Star Atlas, such as decisions to retain developer services or brand decisions (i.e., to approve a partnership between the DAO and a third party).





Part III :

A Sustainable Governance Framework

► The Star Atlas DAO and Its Treasury (cont.)

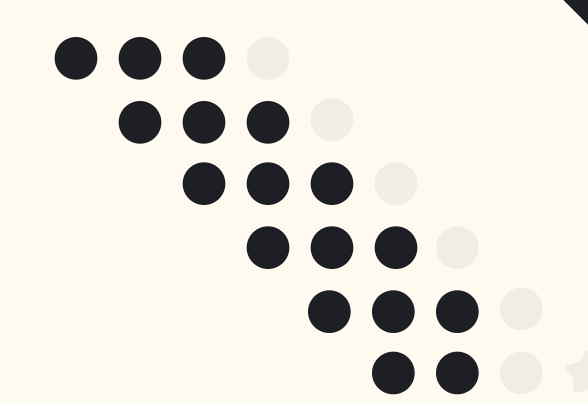
The DAO's treasury is managed by the DAO through on-chain governance mechanisms. Any funds that the DAO decides to send off-chain may be deployed by entities such as the Star Atlas Foundation, but only after receiving on-chain approval by the DAO and subject to the direction of the DAO. The DAO's treasury is funded by proceeds from what amounts to taxation on transactions in the ecosystem, consistent with the parameters set forth in the Star Atlas Economics Paper.³⁷

To date, the DAO has collected over 250 million ATLAS from the sale of resources used in SCORE. Prior to the launch of the DAO's on-chain governance systems, ATMTA safeguarded those assets and did not — and will not — spend them on any ATMTA-only purpose. Those funds may only be spent by the DAO through on-chain governance.

The DAO also has the power, in its sole discretion, to determine monetary policy and tax rates in the Star Atlas ecosystem, how taxation revenue is spent, and how the emissions curves and other tokenomics design of ATLAS and POLIS may be changed (if at all).

Finally, the DAO makes broad decisions for the Star Atlas metaverse and brand. For example, the DAO may vote to engage a developer to build a new gaming experience for Star Atlas or to associate the Star Atlas DAO's brand with a potential partner.





Part III :

A Sustainable Governance Framework

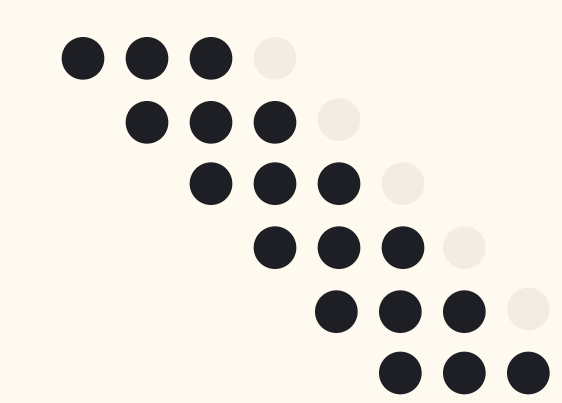
▶ The Star Atlas Constitution

A properly functioning DAO should make decisions that are consistent with a long-term vision. Although on-chain code provides immutable consistency on a programmatic basis, the long-term viability of a Star Atlas community that takes actions and makes decisions that necessarily involve off-chain interactions depends on the consistency and adaptability offered by a broader and substantive supreme law — a constitutional document.

The Star Atlas Constitution is currently being drafted with input from the community, and generally contains the following sections:

- **Core Principles**, describing the most enduring values and fundamental rights of the Star Atlas community.
- **Supremacy and Jurisdiction**, defining over what the DAO exercises ultimate authority and the DAO's authority with respect to sub-DAOs.
- **Decision-making Framework**, codifying the DAO's proposal making processes.
- **Implementation Framework**, explaining how decisions made by the DAO shall be executed, particularly where a decision cannot be made purely through on-chain commands.
- **Dispute Resolution Framework**, setting forth a process to resolve disputes among Star Atlas community members shall be resolved.
- **Amendment Framework**, describing the process required to amend the Constitution.

The Constitution must be both specific enough to provide clear direction and general enough to permit adaptation over time. It will become the supreme law of the Star Atlas metaverse and must be ratified via on-chain governance.



Part III :

A Sustainable Governance Framework

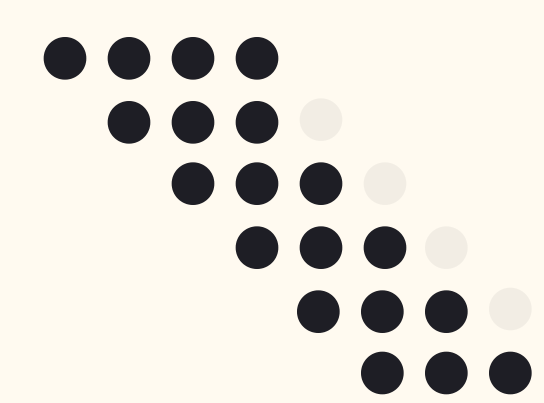
▶ The Star Atlas Council

The decisions of the Star Atlas DAO shall be guided, but not controlled, by a Council of elected representatives. One of the main problems faced by many DAOs today is that pure direct democracy in which every decision is debated and weighed by every member of the community leads to inconsistent outcomes, poorly thought-out proposals (sometimes issuing illegal or impossible instructions), and noise that makes it difficult for projects to move forward.³⁸ We believe that the quality of decision making by a large community is improved by having a Council shepherd the proposal ideation and drafting process such that proposals will receive a full vetting before formally being submitted for voting. The Council will provide input on draft proposals, with an eye for potential legal pitfalls and malicious or unintended effects.

Some benefits of the Star Atlas Council's influence on the proposals process include:

- A single body of representatives can more easily receive confidential information that could benefit the DAO, if keeping such information confidential clearly is in the best interests of the DAO.
- The Council could more easily receive the input of experienced specialists where appropriate.³⁹
- A consistent set of representatives vetting proposals would add consistency to all proposals and ensure all proposals are aligned with the Star Atlas Constitution.

Star Atlas Council members will be elected and replaced by the Star Atlas DAO via on-chain governance. The number of Council members and other details regarding the Star Atlas Council (such as the duration of their term) will be determined with input from the community. We encourage highly active and devoted members of the community to run for seats on the Star Atlas Council.



Part III :

A Sustainable Governance Framework

▶ The Proposals and Voting Process

POLIS Improvement Proposals ("PIPs") form the backbone of governance in the Star Atlas DAO. All PIPs must follow a designated process that will be ratified by the DAO, but on a general level, every PIP will contain a concise rationale and specification for a feature or change, must reflect input from the community through engaged discussions, and must undergo levels of review by the community, the Star Atlas Council, the full DAO, and the Star Atlas Foundation. If the DAO votes to approve a PIP, the proposal will be implemented by the DAO, Foundation, or others specified in the PIP.

A PIP broadly will go through 8 steps (or more, as some steps may be iterative based on feedback):

① Ideation:

Any member of the Star Atlas community — even a non-voter — can propose and lead discussion on an idea for a PIP, with input received from the community. A PIP may concern any potential change within the jurisdiction of the Star Atlas DAO, such as a decision to deploy some portion of the DAO's treasury for an ecosystem development grant.

② Drafting:

The author drafts the proposal in accordance with a format that has been pre-approved by the Star Atlas DAO. PIPs shall provide concise technical specifications and rationale for a change to the ecosystem. The PIP author is responsible for building consensus in the community, documenting dissenting opinions, and shepherding the PIP through the entire process. PIPs may be a signaling memo to approve off-chain instructions written in the text of the PIP, or they may include on-chain Solana instructions to be executed after approval by the electorate.

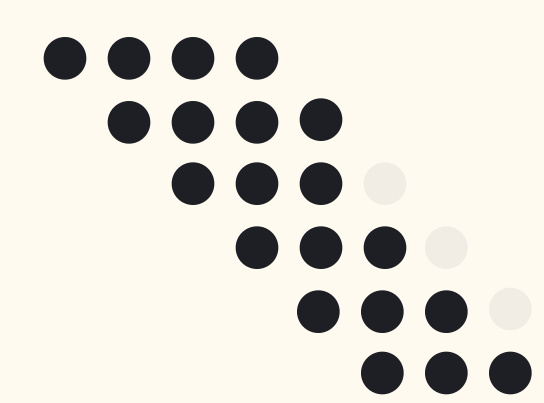
③ Review:

The Star Atlas Council leads the review process. As described above, the Council is an elected body of representatives of the community charged with ensuring that PIPs are consistent with the Constitution, which is a governing document setting forth first principles important to the Star Atlas community. If appropriate, the Council may provide formal feedback on the draft proposal to ensure the author and the community have considered the draft's broader implications (including legal considerations, tax considerations, potential conflicts of interest, and other issues). The Council may reject a draft if it determines that a draft or the author are not capable of advancement to the next stages.

④ Revision:

The author revises the draft proposal based on feedback from the Council and the community. Review and revision are an iterative process. Some drafts may not be capable of advancing to the next stage of initial approval.





Part III :

A Sustainable Governance Framework

▶ The Proposals and Voting Process (cont.)

⑤ Provisional Approval:

The Council formally determines that a proposal is ready for submission to the electorate. The proposal is designated as a live PIP and given an identification number.

⑥ Advancement:

The PIP is advanced to on-chain voting via activation by a governor with a requisite amount of PVP. PIPs undergo an activation delay of 48 hours, after which they can be voted on by those with a non-zero amount of PVP.

⑦ Voting:

The full DAO votes on the PIP. The PIP is approved only if both quorum and threshold PVP minimums (as assigned by the DAO) are met. Voting lasts for two weeks.

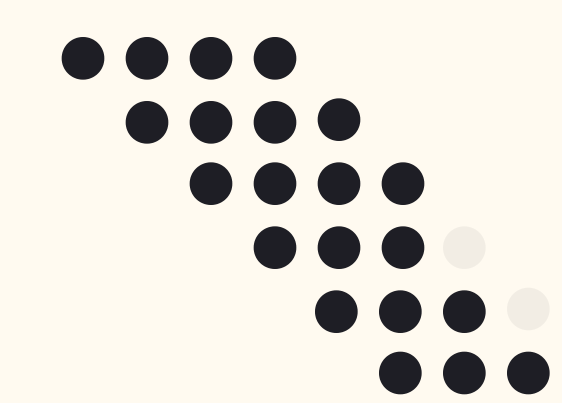
⑧ Execution:

48 hours after a successful vote, the Star Atlas Foundation, an independent body charged with following the will of the DAO, executes an approved PIP and, if necessary, implements the PIP directly as a legal entity. The Foundation does not have unilateral authority over the DAO, the on-chain governance mechanism, or the treasury. That said, if a PIP is not capable of safe or proper implementation, the Foundation may exercise discretion not to execute the PIP — e.g., if the PIP poses a substantial risk to the ecosystem, is missing or contains inaccurate information (such as critical information about costs), conflicts with another PIP, conflicts with the Constitution, would require illegal actions by Foundation directors, is reasonably suspected of containing fraudulent or misleading information, or other reasons. If the Foundation exercises such discretion, the Foundation must provide a clear explanation of its reasoning, at which point the PIP may, if possible, undergo a resubmission process.

The specific rules governing the proposal, drafting, and passage process will be defined through discussions with the community and will be ratified by the Star Atlas DAO. Among other things, the rules will address situations in which conflicting PIPs are proposed, what happens when a PIP cannot be implemented, the voting thresholds required for a successful vote, and other potential issues.

Additionally, at launch ATMTA holds an Emergency Override authority over the governance mechanism, to be used only in an emergency to protect the DAO and the community (such as following the discovery of an exploit or vulnerability). Once the DAO has achieved a sufficient level of maturity, sustainability, and decentralization, the Emergency Override authority will shift completely to the DAO.





Part III :

A Sustainable Governance Framework

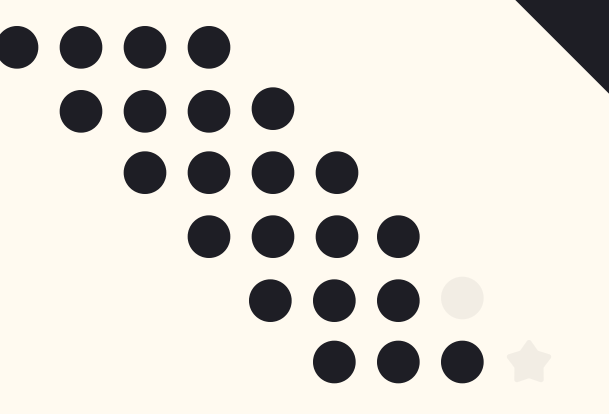
► The Star Atlas Foundation

The Star Atlas Foundation is a Cayman Islands foundation limited by guarantee and without share capital with the sole purpose of carrying out the will of the Star Atlas DAO. It is an independent entity run by a majority of independent and experienced directors — people who have substantial web3 and directorship experience and who have no business, financial, or social ties to ATMTA or any of its personnel. Although one person from ATMTA will sit on the Foundation initially, that person has a minority voice and will be present primarily to ensure the Foundation acts with full information about the Star Atlas ecosystem. The Star Atlas Foundation is disaffiliated with ATMTA and will, independently, implement the decisions of the Star Atlas DAO.

To be clear, the Star Atlas Foundation is neither the Star Atlas DAO nor the Star Atlas Council. The Foundation merely serves as an agent of the DAO to fulfill the limited purpose of carrying out certain defined activities. It cannot make independent decisions for the DAO, it cannot unilaterally access the DAO's treasury, and its governing documents provide that the DAO, via on-chain governance, can remove or replace the Foundation's directors.

Moreover, the Foundation is dependent on funding from the DAO's treasury that must be approved through the PIP process. The Foundation merely carries out the DAO's orders, particularly where a legal entity is required — e.g., to sign contracts for the DAO, which cannot itself sign contracts as it is a nonjurisdictional entity.

The Star Atlas Foundation also plays a vital role in on-chain governance: it holds the keys to the multisig executive function necessary to implement a successful on-chain vote. This function does not let the Foundation control the entire governance mechanism; in other words, it cannot unilaterally create a proposal or create an instruction to access the DAO's treasury. The executive function merely offers a final check on the governance process to ensure that the DAO's decisions can safely and legally be implemented.



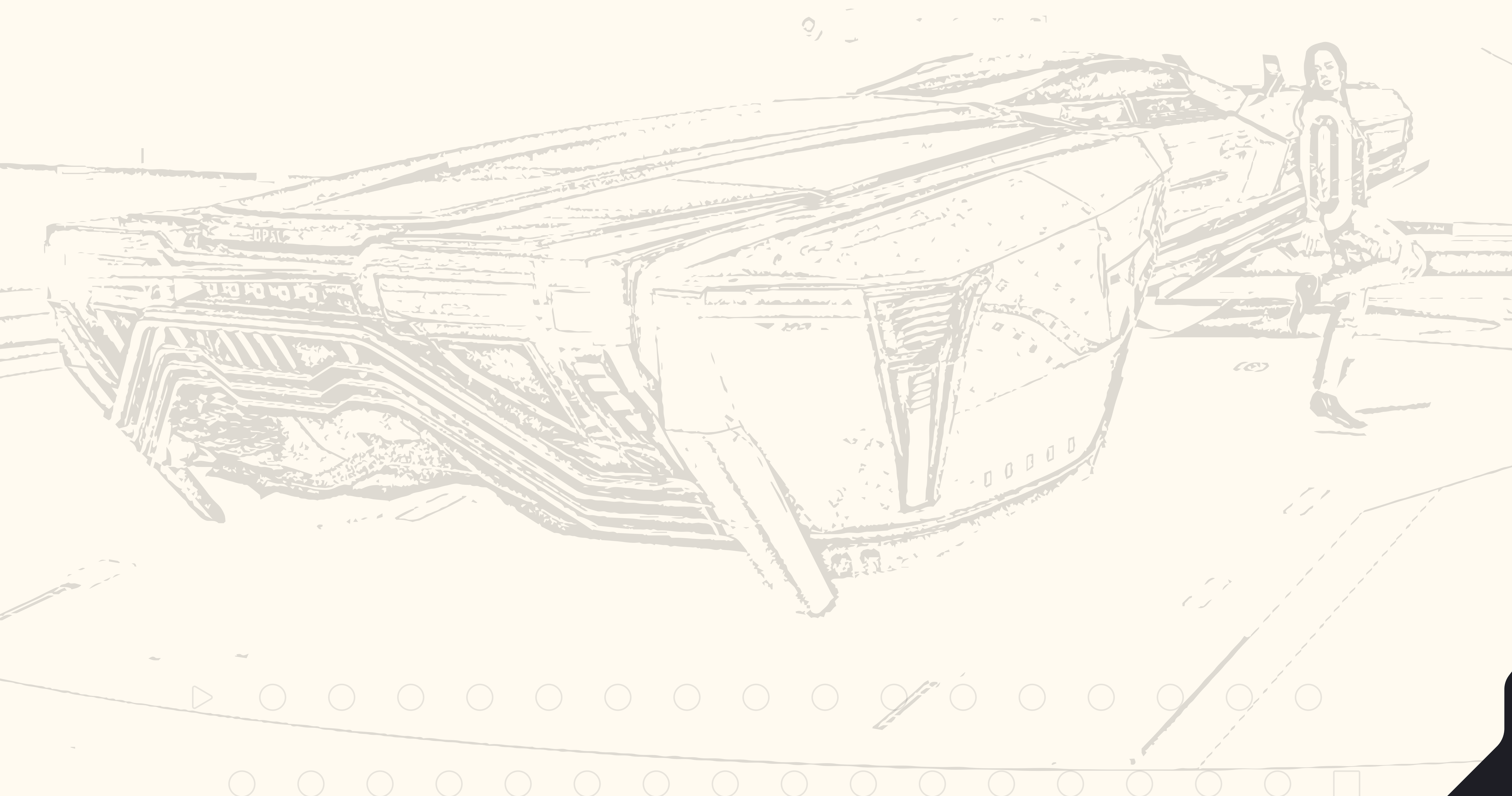
Part III :

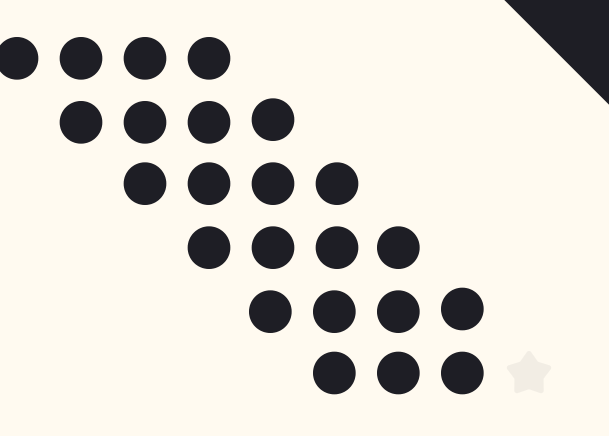
A Sustainable Governance Framework

▶ The Roles of ATMTA and Other Developers

As explained above, ATMTA is merely one service provider in the broader Star Atlas ecosystem. While it has a significant role in development today as the initial contributor to Star Atlas, even now the ecosystem is vibrant with an increasing level of development provided by other individuals and guilds. Cognizant of its role as one of many Star Atlas developers, ATMTA is creating a set of tools and software development kits to accelerate decentralized development of Star Atlas. The DAO ultimately makes its own decisions about which developers it wants to associate and partner with in growing out all the experiences of Star Atlas.

To be clear, once the DAO's governance framework is fully up and running, the DAO would even be able to fire ATMTA should its services no longer be desired by the community, because the Star Atlas metaverse is completely community-driven and community-owned and no single contributor — even the initial contributor — shall have any overriding influence over the ecosystem. With time, active community members' influence over the Star Atlas community will exceed ATMTA's. A coalition of unrelated parties would need to come together to achieve a PVP majority. And in the end, all the front-end user experiences, underlying blockchain code, lore, art, and more — all of what defines Star Atlas — can and will be made by a diverse set of contributors.



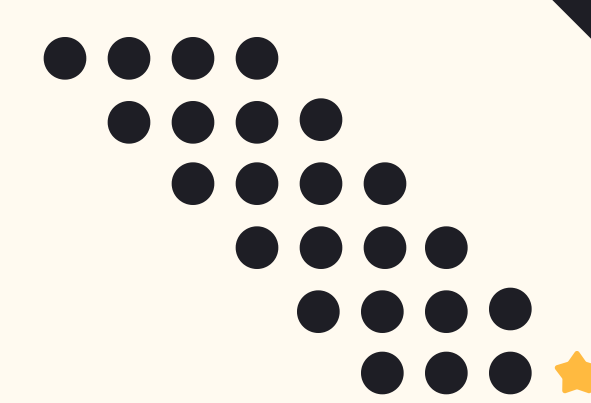


Conclusion

Today, Star Atlas is a concept. It is a galaxy-spanning story, an immersive metaverse with an increasingly complex economy, and a space MMO characterized by elements of grand strategy and resource management as well as political intrigue and maneuvering. And it has at its core an incredible community hundreds of thousands strong from all around the globe. From the outset, our goal has been to ensure the community truly owns and runs the Star Atlas metaverse — because the Star Atlas of tomorrow will be a sustained and exciting digital society for many years to come.

We hope you digest the ideas in this paper, discuss them with us, and help us iterate and improve on them as we together travel the path to achieving a sustainable and effective governance framework for the Star Atlas DAO.





End Notes

- 01 Diablo Immortal Actually Requires Over \$500,000 to Max Character, Gamerant
<https://gamerant.com/diablo-immortal-requires-500000-dollars-max-character/>
- 02 For example, Ubisoft recently announced it would soon end support and access to all online features for a variety of titles. Ubisoft Closing Game Servers Like Assassin's Creed and Far Cry Soon, GameRevolution
<https://www.gamerevolution.com/news/710039-ubisoft-server-closures-assassins-creed-far-cry>
- 03 The Promise of DAOs, the Latest Craze in Crypto, The New Yorker
<https://www.newyorker.com/culture/infinite-scroll/the-promise-of-daos-the-latest-craze-in-crypto>
(describing Spice DAO and Constitution DAO).
- 04 In recent months, for example, we have seen suggestions that DAOs consider registration as unincorporated nonprofit associations ("UNAs") in certain U.S. states, see M. Jennings and D. Kerr, A Legal Framework for Decentralized Autonomous Organizations,
<https://a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-1.pdf>
 as well as use of a Guernsey purpose trust, see Non-U.S. Trusts in Decentralized Autonomous Organizations, dYdX Foundation
<https://dydx.foundation/blog/legal-framework-non-us-trusts-in-daos>
 it is safe to say that DAO structures lack a one-size-fits-all approach, particularly given the varied functions carried out by DAOs.
- 05 For example, Rome DAO was building a game with the help of Sempronia, a game development studio. The studio recently gave up on the project, citing unsurmountable challenges in dealing with their demanding community. They concluded that "DAOs in general cannot operate as they're currently structured. Don't build DAOs. Build products." RFC: Sempronia Ending Relationship with the DAO, RomeDAO
<https://forum.romedao.finance/t/rfc-sempronia-ending-relationship-with-the-dao/615>
- 06 The Solend DeFi lending protocol recently faced potentially existential risk because one wallet maintained a large, leveraged position that threatened cascading liquidations on the protocol. The Solend DAO, which had never engaged in any prior governance activity, voted on six hours' notice to "[g]rant emergency power to Solend Labs to temporarily take over the whale's account." The vote passed but led to significant fallout from the public. While the proposal may have been intended to mitigate harm to protocol users, it was potentially illegal (Solend Labs may not have had the requisite authority to take direct custody of user assets), the vote lacked due process and debate, and the entire situation was antithetical to web3 norms. See SLND1: Mitigate Risk From Whale, Solend DAO (June 19, 2022), at
<https://govern.solend.fi/dao/SLND/proposal/HuaL6cDtuNtfnJgywMnYiZDHVCoLAuDtVFgJD8kYChJ4>



End Notes

- 07 Shortly after the vote to take custody of user assets passed, the Solend DAO quickly reversed course and voted to invalidate the prior, potentially illegal proposal. See SLND2: Invalidate SLND1 and Increase Voting Time, Solend DAO (June 20, 2022), at <https://govern.solend.fi/dao/SLND/proposal/3geE5P3D7VJRaNNdVfZciGsXgwGiao1hSNpRM6jWNa5A> Although it is perfectly normal for governing entities to make a decision that departs with prior practice, doing so within a single day is the kind of pivot uniquely made possible by DAOs and raises doubts as to the level of trust anyone can place even on a properly-passed DAO vote.
- 08 Beanstalk Farms, a DeFi protocol, was exploited recently in a \$182 million hack by an attacker who executed a flash loan to amass a large amount of the governance token, voted to pass a malicious proposal that drained the protocol's treasury, and returned the flash-loaned funds—all within the span of a single block. See Beanstalk's \$182M Hack Exposes The Risk of Malicious Governance Proposal, Tronweekly (Apr. 18, 2022), <https://www.tronweekly.com/beanstalk-hack-governance-proposal/>
- 09 See Leaderboard, rekt.news, at <https://rekt.news/leaderboard/> Rekt tracks hacks and exploits throughout web3. A quick glance reveals that the Rekt leaderboard is largely populated with exploits of unaudited smart contracts.
- 10 For example, Yuga Labs, the creators of the Bored Ape Yacht Club, have in recent months suffered three separate security breaches that cost users' funds and NFTs. Bored Ape Yacht Club's Discord server was hacked, with \$360,000 in NFTs stolen. Who's to blame is debated, Fortune (June 4, 2022), <https://fortune.com/2022/06/04/bored-ape-yacht-clubs-discord-server-was-hacked-with-360000-in-nfts-stolen-blame-debated/>
- 11 Snapshot, <https://snapshot.org/#/>
- 12 See M. Jennings and D. Kerr, A Legal Framework for Decentralized Autonomous Organizations, Part II: Entity Selection Framework, <https://a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-2.pdf> (providing an excellent discussion on whether a DAO is necessary or even advisable for particular types of operations particularly in light of certain regulatory and tax uncertainties associated with some DAO activities).
- 13 We are encouraged nonetheless by genuine efforts in the web3 gaming space to achieve increased decentralization. For example, Axie Infinity (through its primary development studio, Sky Mavis) has published a helpful roadmap on how they plan to achieve progressive decentralization. The Axie Community Treasury & Progressive Decentralization (Mar. 24, 2022), <https://axie.substack.com/p/community>

End Notes

- 14 See Local knowledge problem, Wikipedia,
https://en.m.wikipedia.org/wiki/Local_knowledge_problem
- 15 Everything starts from a central point—a singularity. Bitcoin, for example, represented the vision of a single person, Satoshi Nakamoto, whose sole efforts brought the first crypto asset to life. Over time, Bitcoin grew such that even after Satoshi stepped back from the project, other developers simply kept calm and carried on. Today, no single developer's activity is critical to the continued functioning of the network because Bitcoin has achieved full decentralization. The same is true of democratic governments; they all start small—sometimes just with a handful of founding persons—and only grow over time into sustainable nation-states that serve a broad and diverse population.
- 16 <https://pitstop.theclubguild.com/>
- 17 <https://redspatula.io/star-atlas-ships/>
- 18 <https://tufaattack.com/play-1>
- 19 <https://www.youtube.com/watch?v=D8dK3KPVDyI>
- 20 <https://hub.startech.industries/>
- 21 https://en.m.wikipedia.org/wiki/Local_knowledge_problem
 The Hologram News Network notably started paying its contributors in gameplay rewards earned from SCORE. See
<https://thehologram.io/the-hologram-hires-first-opal-bitboat-crew-members/>
- 22 <https://galacticdash.io/>
- 23 <https://www.youtube.com/AtlasTheorySA>
- 24 <https://solsea.io/c/620a97cbb7536a746430bc06>
- 25 <https://fleetpass.app/>
- 26 <https://chrome.google.com/webstore/detail/staratlas-tools/mpkcohccegiogppjmgopijpifefllef?hl=zh>
- 27 https://staratlaswiki.org/wiki/Main_Page



End Notes

- 28 <https://app.staratlasitalia.com/dashboard>
- 29 <https://stardusteconomy.com/dashboards>
- 30 <https://staratlasguilds.com/>
- 31 <https://staratlasguide.com/>
- 32 See, e.g., Quimera SA's translation of the Star Atlas Town Halls into Spanish.
https://twitter.com/QuimeraSA_/status/1540033476551970816?s=20&t=ZArULSLyqPluAu014LXyQA
- 33 Star Atlas, People's Voice Winner, The Webby Awards,
<https://www.webbyawards.com/crafted-with-code/star-atlas/>
- 34 Star Atlas Launches Initiative to Establish Web3 Security Framework, PR Newswire,
<https://www.prnewswire.com/news-releases/star-atlas-launches-initiative-to-establish-web3-security-framework-301553458.html>
- 35 Star Atlas Releases Its Inaugural Triple-A State of the Economy Report, Star Atlas Medium,
<https://medium.com/star-atlas/star-atlas-releases-its-inaugural-triple-a-state-of-the-economy-report-b06f3b8d9b4>
- 36 Inaugural COPA Festival Winners Make History, Star Atlas Medium,
<https://medium.com/star-atlas/inaugural-copa-festival-winners-make-history-91e2ecc4d0e4>
- 37 Objectives, Conditions, Balancing Mechanisms, Star Atlas,
<https://staratlas.com/economics-paper.pdf>
- 38 See A. Hall & P. Smith, Lightspeed Democracy: What web3 organizations can learn from the history of governance
<https://a16zcrypto.com/lightspeed-democracy-what-web3-organizations-can-learn-from-the-history-of-governance/>
(discussing the benefits of representative democracy for DAOs).
- 39 ATMTA is being advised by some of the best legal and tax experts working in web3. The Star Atlas DAO and the Star Atlas Council stand to benefit from this advice.

