

L26: Gaming NFTs and Metaverse

Module C: NFTs & Digital Assets

Blockchain & Cryptocurrency Course

December 2025

By the end of this lesson, you will be able to:

- Understand the play-to-earn gaming model and tokenomics
- Analyze Axie Infinity's rise and collapse as a case study
- Evaluate virtual land NFTs in metaverse platforms
- Assess interoperability challenges for cross-game assets
- Identify sustainability issues in blockchain gaming economies

Traditional Gaming:

- Players pay for games and in-game items
- Items locked to game (no true ownership)
- Value accrues to game company, not players

Blockchain Gaming:

- In-game assets are NFTs (player-owned)
- Items tradable on open marketplaces
- Players can earn cryptocurrency while playing
- Potential for cross-game asset portability

Promise: Players as stakeholders, value extraction to players

Play-to-Earn (P2E) Model

Concept: Players earn tokens/NFTs through gameplay

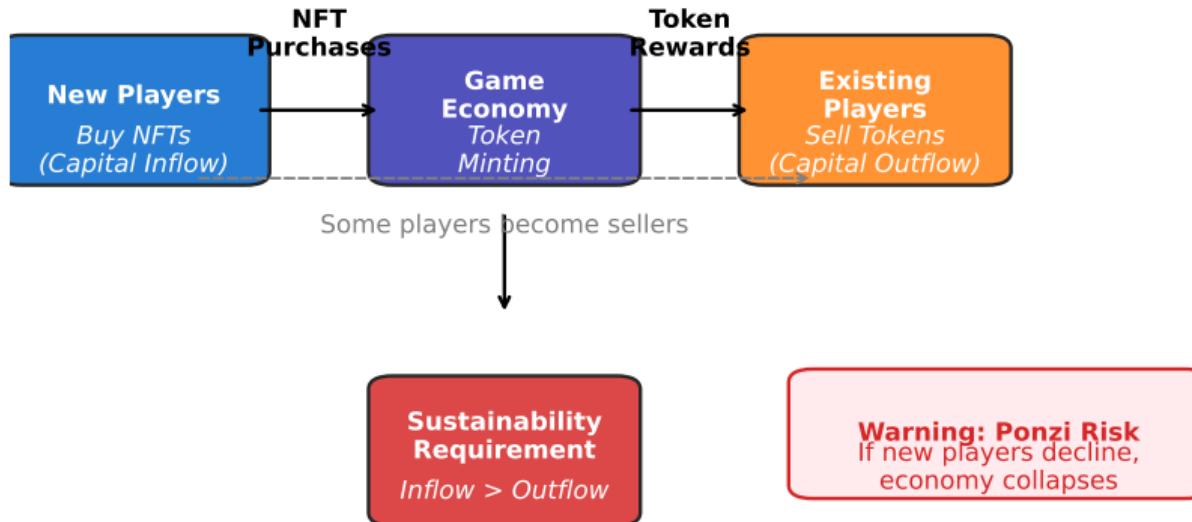
Mechanics:

- ① Player acquires NFT characters/assets (upfront investment)
- ② Player completes in-game tasks (battles, quests)
- ③ Game rewards player with tokens (cryptocurrency)
- ④ Player sells tokens on exchange

Economic Model:

- New players buy NFTs (inflow of capital)
- Existing players earn and sell tokens (outflow)
- Sustainability requires continuous new player demand

Play-to-Earn Economic Flow



P2E models resemble Ponzi dynamics: new player capital pays existing players



Axie Infinity: The P2E Pioneer

Game Overview:

- Creature-battling game (similar to Pokemon)
- Players collect, breed, and battle Axies (NFT creatures)
- Launched: 2018, exploded in popularity 2021

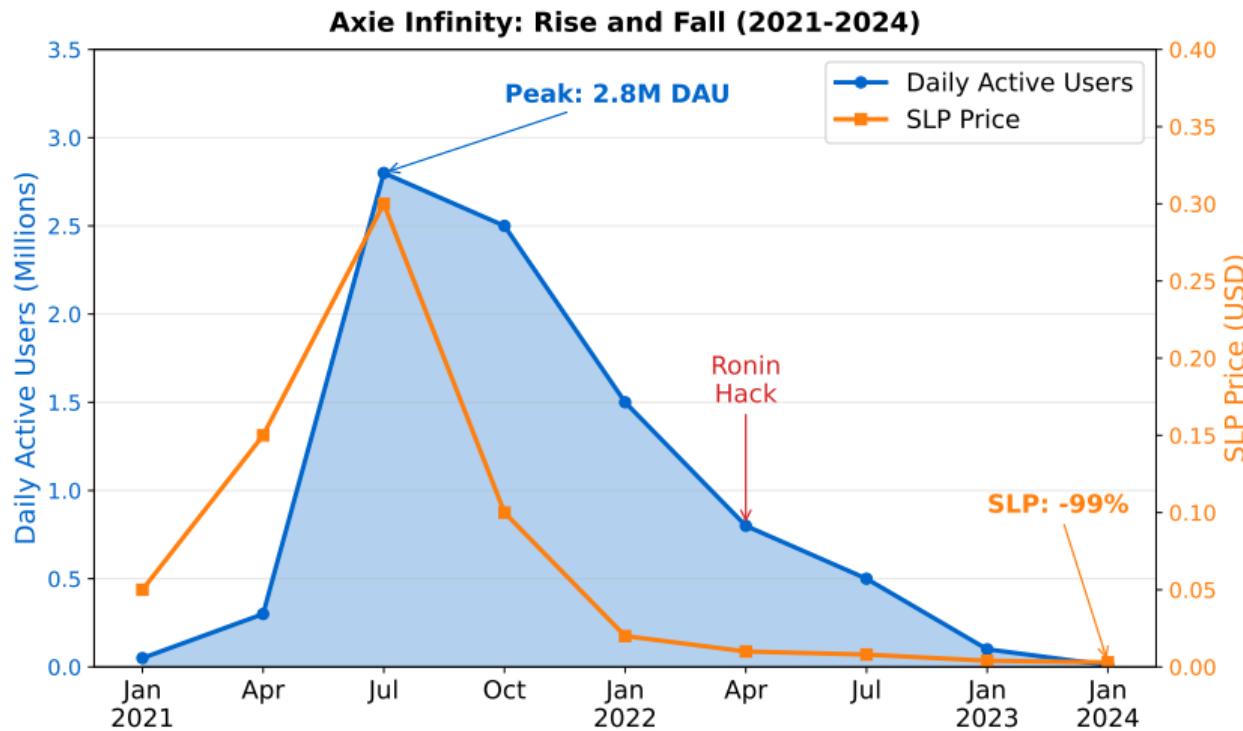
Tokenomics:

- **Axie NFTs:** Characters needed to play (3 required)
- **AXS:** Governance and staking token
- **SLP (Smooth Love Potion):** In-game reward token

Peak Stats (2021):

- 2.8 million daily active users
- Entry cost: \$600-1000 (3 Axies)

Axie Infinity: Rise and Fall



SLP token collapsed 99%+; users dropped from 2.8M to 10K

Fundamental Flaws:

- ① **Ponzi Dynamics:** Relied on new player money to pay existing players
- ② **Unlimited Inflation:** SLP had no supply cap (infinite minting)
- ③ **Weak Demand Sinks:** Breeding not enough to absorb SLP supply
- ④ **High Entry Barrier:** \$600-1000 deterred new players
- ⑤ **Gameplay Quality:** Repetitive, grind-focused (not fun)

Lesson: P2E model requires genuine value creation, not just token redistribution

Ronin Bridge Hack (March 2022)

Incident: Largest DeFi hack in history

Details:

- **Target:** Ronin Network (Ethereum sidechain for Axie)
- **Amount stolen:** 173,600 ETH + 25.5M USDC = \$625M
- **Attack vector:** Social engineering of validators
- **Discovery:** Hack unnoticed for 6 days

Impact:

- Player confidence shattered
- Accelerated player exodus

Lesson: Centralized bridges are critical vulnerabilities

Virtual Land NFTs: Metaverse Real Estate

Concept: Owning digital land parcels as NFTs in virtual worlds

Major Metaverse Platforms:

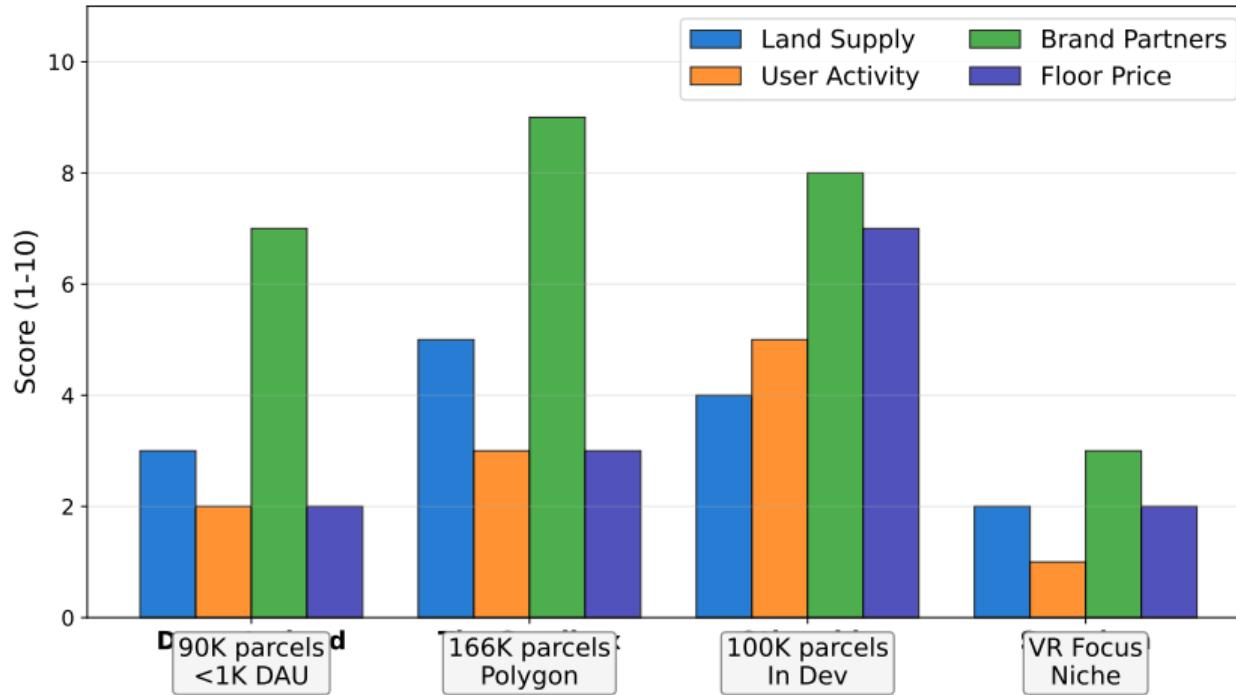
- **Decentraland:** Ethereum-based, 90,000 parcels
- **The Sandbox:** Polygon-based, 166,464 parcels
- **Otherside (Yuga Labs):** BAYC metaverse, 100,000 parcels

Value Proposition:

- Build experiences (games, galleries, events)
- Monetize through rentals or advertising
- Speculate on location value

Reality: Low usage, most land undeveloped, speculation-driven

Metaverse Virtual Land Platform Comparison



All platforms struggle with low daily active users; brand partnerships exceed organic activity



Launched: 2020, Ethereum-based

Structure:

- 90,000 LAND parcels (16x16 meter plots)
- MANA token: Currency for buying land
- DAO governance: Landowners vote on changes

Peak Hype (2021-2022):

- Prime land sold for \$2.4M
- Brands: Samsung, Adidas, Sotheby's

Current State (2024):

- Daily active users: ~1,000
- Floor price: \$500-1,000 per parcel (down 90%+)

Vision: NFT items usable across multiple games

Example Scenarios:

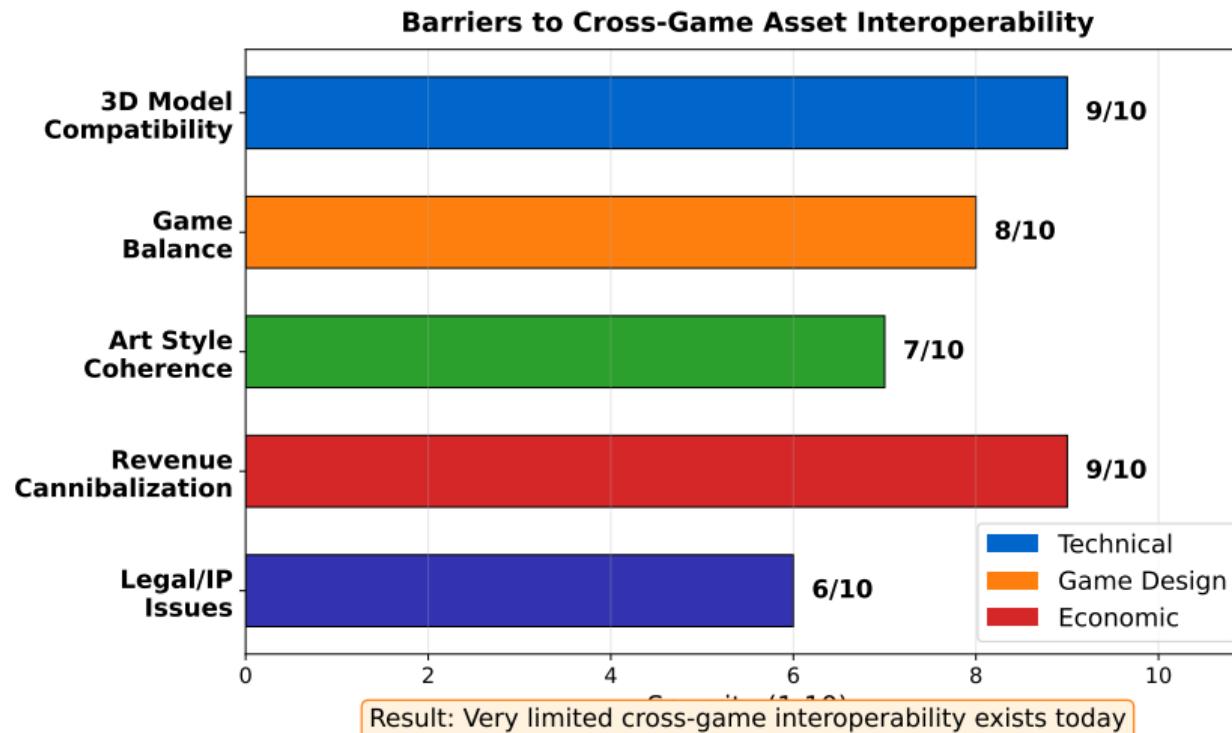
- Sword earned in Game A usable in Game B
- Avatar skin portable across virtual worlds
- Virtual real estate accessible from multiple platforms

Technical Challenges:

- ① 3D model compatibility (different engines, formats)
- ② Game balance (overpowered items)
- ③ Art style coherence
- ④ Legal/IP issues

Reality: Very limited interoperability today

Interoperability Barriers



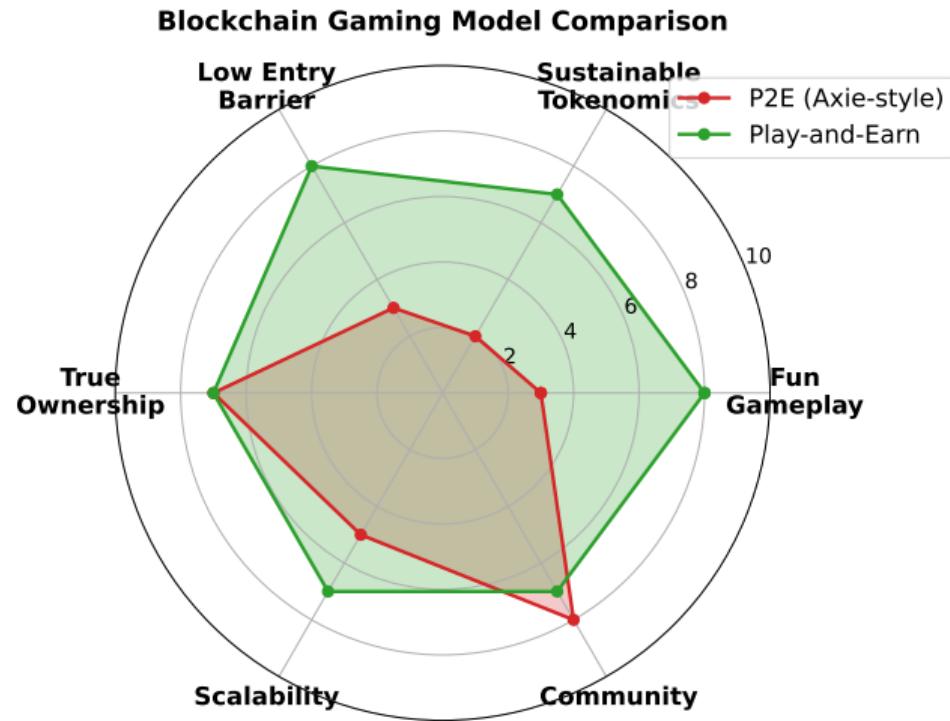
Economic and technical barriers make true cross-game asset portability extremely difficult

Concerns:

- ① **Ponzi Tokenomics:** Most P2E models collapse without new players
- ② **Gameplay Quality:** Focus on earning, not fun
- ③ **High Costs:** Gas fees, NFT entry barriers
- ④ **Regulatory Risk:** P2E may be classified as gambling

Potential Solutions:

- Shift to “play-and-earn” (fun first, earn secondary)
- Deflationary tokenomics (burning mechanisms)
- Layer 2 solutions (lower gas fees)
- Free-to-play with optional NFT purchases



Play-and-Earn models score better on sustainability factors than traditional P2E



Play-and-Earn: The New Paradigm

Play-and-Earn: Prioritize gameplay quality, earnings as bonus

Contrast with P2E:

- **P2E:** Gameplay is work, earnings primary motivation
- **Play-and-Earn:** Gameplay is fun, earnings enhance experience

Examples:

- **Illuvium:** AAA-quality open-world RPG with NFT creatures
- **Ember Sword:** Free-to-play MMORPG with optional cosmetics
- **Gods Unchained:** Free-to-play card game, sustainable

Key Insight: Fun gameplay attracts organic users, reducing Ponzi dynamics

Guilds: Organizations that lend NFT assets to players

Scholarship Model:

- ① Guild purchases NFT game assets
- ② Guild lends assets to players (scholars)
- ③ Players earn tokens through gameplay
- ④ Earnings split: 70% player, 30% guild

Major Guilds:

- **Yield Guild Games (YGG):** Largest guild
- **Merit Circle:** DAO-governed

Decline: Axie collapse decimated guild revenues

Key Takeaways

- ① Play-to-earn (P2E) models enable earning through gameplay but often resemble Ponzi schemes
- ② Axie Infinity collapsed due to unsustainable tokenomics and unlimited SLP inflation
- ③ Virtual land NFTs (Decentraland, Sandbox) are speculation-driven with low actual usage
- ④ Interoperability of cross-game assets is limited by technical and economic barriers
- ⑤ Sustainable blockchain gaming requires fun-first design and balanced token economies
- ⑥ Play-and-Earn (fun primary, earning secondary) shows more promise

Discussion Questions

- ① Can play-to-earn gaming models ever be sustainable without Ponzi dynamics?
- ② What would make virtual land NFTs genuinely valuable beyond speculation?
- ③ Is true cross-game interoperability achievable, or a pipe dream?
- ④ Should blockchain games focus on financialization or gameplay quality?
- ⑤ How can regulators balance innovation with consumer protection in P2E gaming?

L27: Real-World Asset Tokenization

We will explore:

- RWA tokenization concept and mechanics
- Real estate tokenization platforms and legal frameworks
- Securities tokenization and compliance (Reg D, Reg S)
- Case study: BlackRock BUIDL fund (\$500M+ on-chain)
- Market size: \$50B on-chain, projected \$18T by 2033

Preparation: Review traditional real estate investment structures (REITs)