Amanita Ecosystem: Decentralized Commerce Architecture

🌎 Overview

Amanita is a decentralized commerce protocol designed to enable autonomous digital storefronts, community-driven commerce, and trust-based seller onboarding without central intermediaries. It integrates with Circle's Wallet-as-a-Service infrastructure, utilizes AWS for deployment automation, and leverages decentralized storage platforms like IPFS, Arweave, or Pinata for content distribution.

🤖 Core Principles

- **Zero Custody**: All wallets are non-custodial and user-controlled via Circle MPC (PIN or Email logins).
- **Zero Data Retention**: No personal user data is stored by Amanita deployers or core contributors.
- **Self-Hosted Deployment**: Each seller deploys and operates their own infrastructure (bot, wallet interface, metadata API).
- **Composability and Interoperability**: Every seller instance contributes 1/3 of its frontend real estate to a shared ecosystem interface.
- **DAO-Aligned Trust Framework**: Reputation, roles, and permissions are represented as NFTs and SBTs.

⚡ Tech Stack Overview

Layer	Technology
Wallets	Circle Wallet SDK (MPC, user-controlled)
Blockchain Layer	Polygon PoS / zkEVM (smart contract deployment, InviteNFT, ProductRegistry)
Storage	IPFS / Arweave / Pinata (for product metadata, images, manifests)
Hosting Automation	AWS (EC2 + CloudInit or Lightsail), Fly.io, Render
Web Interface	Telegram WebApp (mobile-first), React SPA

Backend (Optional)	Python (FastAPI), lightweight RPC relayer

🚀 Circle Integration

- Each seller and buyer wallet is created via Circle's Wallet SDK (using PIN or Email).
- Wallets are on Polygon and compatible with USDC and any ERC-20/ERC-721/ERC-1155 contracts.
- Transactions from seller-side (e.g. `mintInvite`, `publishProduct`) can be executed by Circle's Developer Wallet (if KYC is passed) or via user-controlled MPC execution.
- No backend holds private keys or session tokens unless explicitly authorized by the user.

▲ Seller Infrastructure Deployment (Zero-Ops SaaS)

- Sellers interact with a no-code mobile-first onboarding UI.
- Upon approval (via SBTs and social reputation), they trigger an automated deployment flow:
    - AWS IAM sub-account is created (optional)
    - EC2 instance or Fly.io container is provisioned
    - Telegram bot is registered via BotFather
    - WebApp Wallet is configured and customized
- All services are deployed under the seller's name and wallet address, preserving decentralization and legal autonomy.

🦾 IPFS / Arweave / Pinata Integration

- Product metadata, images, and seller manifests are uploaded and versioned to decentralized storage.
- Pinata or Arweave is used for persistence, NFT metadata pinning, and verifiable transparency.
- Each seller instance syncs a "shared seller registry" from IPFS, which powers:
    - Ecosystem-wide discovery
    - Cross-selling permissions
    - Invite analytics and reputation tracking

📈 Reputation and Access Layer

- InviteNFT acts as a gatekeeping SBT to enter seller mode

- Reputation badges are minted based on on-chain interactions: sales, reviews, successful referrals
- Only users with a reputation badge + stake are allowed to become sellers
- Contracts enforce this logic via modifiers (e.g. `onlyReputable`, `hasInviteNFT`)

📎 Legal & Governance Layer

- Core protocol is open-source (MIT or AGPL)
- Self-hosted deployment ensures operators (sellers) are legally autonomous
- No central data collection or custody = no registration/licensing required
- Future DAO may issue compliance and identity modules as opt-ins

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🔗 Composability & Inter-Seller Referrals

- 1/3 of each storefront UI is dedicated to ecosystem interface:
    - Manifesto, how to join
    - Discovery of other sellers
    - Cross-seller tracking (referral % logic)
- On-chain metadata tracks "who referred whom" and allocates incentive tokens accordingly
- Optional mutual token exchange framework enables barter-style commerce among sellers

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🌟 Vision

Amanita is more than a marketplace. It's a self-growing network of seller-owned storefronts, where economic power, data, and trust live on-chain and in community hands. It reimagines commerce not as a service, but as a decentralized, composable protocol.