Arthur Labs Whitepaper

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1 Disclaimer

1.1 Legal Disclaimer

Nothing in this Whitepaper is an offer to sell or the solicitation of an offer to buy tokens. Arthur Labs is publishing this Whitepaper solely to receive feedback and comments from the public. If and when Arthur Labs offers for sale any tokens (or a Simple Agreement for Future Tokens), it will do so through definitive offering documents, including a disclosure document and risk factors. Those definitive documents are also expected to include an updated version of this Whitepaper, which may differ significantly from the current version. Nothing in this Whitepaper should be treated or read as a guarantee or promise of how Arthur Labs business or the tokens will develop or of the utility or value of the tokens. This white paper outlines current plans, which could change at its discretion, and the success of which will depend on many factors outside Arthur Labs control, including market-based factors and factors within the data and cryptocurrency industries, among others. Any statements about future events are based solely on Arthur Labs analysis of the issues described in this white paper. That analysis may prove to be incorrect.

Finally, this Whitepaper is not finalized and is in continuous development. Future changes in references or additional content regarding infrastructural changes will be mentioned in the Whitepaper keynotes if they are major changes.

2 Abstract

Most people believe Arthur Labs is developing just another Real World Asset (RWA) blockchain CoinGecko, 2024. However, Arthur Labs is building a suite of systems, applications, and a blockchain with smart contract standards to facilitate the means of exchanging physical products, services, and deliveries.

Firstly, Arthur Labs is building out a suite of tools, which will be referred to as systems inside of this document. The first tool is called DEAN, a Digital Bazaar Factory. This has been shown to be the most successful to date. [SECTION]. There are additional tools explained in the same section.

Second, Arthur Labs is building a dedicated blockchain for these systems, which aims to be a hallmark of blockchain innovation. This blockchain is named (The) VAULT. All tools provided by the labs are open source and accessible to developers and entrepreneurs in this blockchain.

A unique feature of this blockchain is its oracle validator model CoinMarketCap, 2024. This model allows for verification of the authenticity of the exchange, which provides the assurance of authentic agents inside the VAULT.

Third, Arthur Labs is publishing open-source standards of its smart contracts prepared as standards to be legally binding for its users and entrepreneurs.

Currently, Arthur Labs has developed out the commerce, service, and delivery contract factories that help developers and entrepreneurs deploy their businesses into Web3, reaping the advantages of authenticity and transparency that their corporate oligarchical competitors fail to provide.

Finally, Arthur Labs intends to provide a series of decentralized applications into its blockchain that helps abstract the information that blockchain fundamentally have such as account abstraction, tools, gas-less experiences, simple sign-on features, and FIAT payments.

With these four resources, Arthur Labs hopes to provide a future that Bitcoin, Ethereum and a vast variety of builders aim to create. These resources operate as a global black swan against corporate oligarchies, to enchant the quality of development for entrepreneurs and small businesses.

Recently, as Arthur Labs continues prioritizing self-sufficiency and tooling over external liquidity providers and market markers, there has been a recent development shift during 2025 to build out in conjoint partnerships to pursue new tooling, such as SUSAN, and to provide external website, application, and SEO building services for small businesses, called BUILDER.

3 Introduction

Corporate oligarchies and corrupt politicians maintain their grip through systems designed to conceal their actions from public scrutiny. Their growing fear of blockchain technology is warranted; transparency undermines the very mechanisms they rely on for control. As decentralized networks continue to evolve, these established powers face a simple truth: blockchain's immutable ledger makes opacity impossible. It is within this transformative moment that Arthur Labs emerges.

This document presents a series of tools and resources Arthur Labs will build to seamlessly onboard small startups onto blockchain technology to advance exchanges of physical goods and services. This vision at its core relies on transparency and trustless-ness to drive a series of new global exchange markets: Decentralized Commerce (DeCom), Decentralized Services (DeServ), and Decentralized Deliveries (DeDe).

Collectively, the 2025 market cap of the commerce, service and delivery markets are valued around 25 "Trillion". Yet for most small startups, trust and global outreach to potential clients are limited. Proposed in this document lays a series of plans and tools that help tackle these issues through automated and configurable systems and blockchain technology.

3.1 Tools and systems

Arthur Labs has developed a comprehensive suite of tools designed to revolutionize how entrepreneurs and developers build and scale digital marketplaces. At its core, these systems automate the creation of two-sided bazaars and marketplaces through configurable components that can be deployed with either Web2 or Web3 functionality, depending on the builder's requirements.

Through a unified global onboarding form, any entrepreneur can initiate the marketplace generation process, selecting their preferred blockchain infrastructure or traditional web architecture Cagigas et al., 2023. Each marketplace can be configured for commerce, services, or delivery operations, enabling rapid expansion into various market segments. Revenue generated from these marketplaces flows back into developing the VAULT blockchain's infrastructure, creating a sustainable ecosystem for future growth.

The system's primary advantage lies in its dramatic acceleration of development and deployment timelines. What traditionally takes 6-12 months can now be accomplished in days, significantly

reducing the barrier to entry for new market participants. This efficiency is further enhanced by the QUINN System, which automatically generates and distributes marketing materials across multiple social media platforms, amplifying market reach without additional effort.

Looking ahead, these systems will integrate with Layer 2 applications to enable FIAT payment processing, creating a seamless bridge between traditional finance and blockchain technology. This hybrid approach ensures maximum accessibility while maintaining the benefits of decentralized systems.

The cornerstone of this ecosystem consists of several systems:

1. **DEAN System:** A digital bazaar factoryline, enabling rapid deployment of Web3-compatabile marketplaces, with full customization of components, smart contracts, and blockchain integration. Functional deployment across 7,500 different chains.
2. **ROSE System:** A parallel system focused on traditional Web2 marketplace development, providing a pathway for businesses preferring conventional infrastructure while maintaining upgrade potential to Web3.
3. **QUINN System:** An autonomous (and static) marketing tool that increases outreach for applications inside of the Arthur labs system, by seamlessly distributing content of marketplaces, or general business announcements onto multiple media platforms.
4. **SUSAN System:** An autonomous application building system using Model Context Providers, and a boilerplate format to full start-to-finish interactive apps. Clients inside SUSAN simply generate a business prompt, and SUSAN does a complete deep search analysis, reporting, and integration of the concept, from idea to MVP in three days.
5. **BUILDER System:** A nearly automated website builder tool that integrates beautiful design systems, APIs, SEO optimization, and various database tooling for clients around the United States.

Together, these systems form a comprehensive toolkit that democratizes marketplace creation, enabling entrepreneurs worldwide to rapidly iterate and launch their ideas while benefiting from blockchain technology's transparency and security. The following sections detail each system's architecture, capabilities, and implementation strategy.

3.2 Blockchain

Arthur Labs is planning to build a standalone and independent blockchain for these new markets. By building an exceptionally low gas fee and fast processing network, various new marketplaces, bazaars and online stores can come into existence.

This aims to be a WASM and Solidity accepted blockchain, with various resources and boilerplate's to accelerate development time to test, debug and launch a product seamlessly.

Using a unique PoS validation mechanism with an oracle validator model that is incentivized to verify and publish the completion of transactions and real world exchanges. Users can earn additional tokens for self verifying the completion of the service and publish this as receipts.

Theoretically, there is a way to include a juring and judging consensus mechanism at its base level to determine if a specific transaction is fraudulent. This mechanism will be discussed in the Layer 1 infrastructure section.

3.3 Contract standards

Above the blockchain lies a series of contract standards to ensure trade agreements are treated as legally enforceable. As of November 30th 2024, Arthur Labs has approximately a dozen smart contracts that are ready for testing and usage. These include multiple Factory Contracts (which generate contracts through tailored user inputs), for selling goods, purchasing goods, and payment proxy agreements when sellers fulfill provide physical delivery receipts for their commerce. The remaining include RWG contracts, RWS contracts, and RWD contracts. As Arthur Labs continue its development for these contracts, these boilerplates will remain open source and publicly accessible in Solidity and Rust through authorized organizations GitHub repositories.

3.4 Layered applications

Going beyond the contract standards are the built-in and free to use (excluding gas fees + various transaction/exchange fees) dApps Chakravarty & Bartoletti, 2023. The following is just a few applications planned for development:

1. **Wallet Provider:** The essential tool for consumers and token holders to be able to interact in Arthur Labs.
2. **Account Abstraction:** This stores and provides consumers an easy to access wallet connection (both functional inside of the application, and on the Wallet Provider), node providers inside will received a sharded piece of the wallet, so the accounts are held encrypted on chain in fragments so that no other user or provider can access the consumers wallet.
3. **Fiat to token bridge:** Arthur Labs additionally will provide a liquidity pool that lets user pay in their native currency, and the pool will facilitate the on chain transaction. Interest or transaction fees accrued will be given to the staking facilitators.
4. **Gas providers:** Some dApps across Arthur Labs may be interested in using a tool in which the marketplace, or platform covers the transaction fees on behalf of the user for a more seamless experience. This tool provides such, being able to cover the gas fee on behalf of the user up to entire cost of the transaction.

4 Architecture

4.1 Layer 1 infrastructure

The VAULT is deployed as a standalone Proof of Stake blockchain. At the time of v1.0.6 of this whitepaper, the primary focus has building the DEAN System, however with the system launch, revenue generated will fund the development process of the VAULT.

4.1.1 Core functionality

The blockchain handles all applications built onto the VAULT. Each block holds dynamic and customized information about real-world activities, backed by oracle validators. Each block hosts typical transfers, as well as stores a list of oracles that act as the confirmation of a specific transaction. Oracles are users who manually review a transaction or authenticate a physical exchange, whether they prove delivery receipts in commerce marketplaces, or verify completions of physical services, for example.

The core accepted programming languages for contract deployment will be Solidity, and WASM.

4.1.2 Oracle validation

The oracle validator model allows each user to incentivize authenticity exchange of a product, service or delivery distributed by contractually paying a third party individual to complete the service of validation of a real-world activity. For example:

- paying an automated node validator to authenticate a physical receipt of a product delivery
- having a validator determines the quality and authenticity of a real world service and its resulting outcome
- having a person view a completion of a construction of property or result of a photography service.
- having a worker at a logistics company confirm with a photo that a CDL truck driver is at the correct delivery location.
- signing a contract of fulfillment when delivering freight.

4.1.3 Data security

Zero-knowledge proof Wikipedia, 2025 is optionally implemented for smart contract owners or users of an Arthur Labs bazaar, or optionally encrypting data through salt rounds. An oracle validator will need to be able to request proof of information upon request.

The VAULT also has a mission to be on the frontline for encryption methods. Arthur Labs aims to partner with various quantum hacking prevention organizations like Quantum EVM.

4.1.4 Proof of Stake System

The VAULT implements a robust Proof of Stake (PoS) consensus mechanism Fanti et al., 2020 that serves both transaction validation and oracle validation purposes. The system utilizes two distinct token classes within the ART ecosystem:

- `"VAU"` - Governing blockchain transactions and staked tokens work as standalone node operators

The validation process combines traditional PoS mechanics with specialized oracle validation capabilities:

4.1.4.1 Transaction Validation:

Stakers can participate in:

- Block validation and consensus
- Fee earning from transaction processing
- Network security maintenance

4.1.4.2 Oracle Validation Integration:

The PoS system uniquely integrates with the oracle validation framework, allowing stakers to:

- Validate physical deliveries and real-world services
- Earn additional rewards for oracle services
- Participate in multi-signature validation for high-value transactions

The economic model follows:

$$\text{Total Rewards} = \text{Base Staking Reward} + \text{Transaction Fees} + \text{Oracle Service Fees}$$

Security measures include minimum staking requirements, slashing conditions, and timelocked withdrawals to ensure network integrity.

4.1.5 Token Economics

The native currency is `"ART"`, implementing a standard Proof of Stake mechanism with enhanced utility across the VAULT ecosystem. The token economics are designed to create a sustainable and value-driven ecosystem through multiple mechanisms:

4.1.5.1 Revenue Distribution

The revenue generated from internally managed Arthur Labs applications and baaars follows a structured allocation model:

1. **Direct Distribution to Staked Holders:**
   Revenue from transaction fees and marketplace operations is distributed proportionally to staked token holders. This creates a direct incentive for long-term token holding and network participation, while ensuring stakeholders benefit from ecosystem growth.
2. **Ecosystem Reinvestment:**
   A portion of revenue is automatically reinvested into ecosystem development, funding technical improvements, security audits, and infrastructure expansion.
3. **Treasury Allocation:**
   Strategic reserves are maintained in the treasury to ensure long-term ecosystem stability and fund future expansion initiatives. This provides flexibility for responding to market conditions and opportunities.

4.1.5.2 Core Utility Functions

`"ART"` tokens serve multiple essential purposes within the ecosystem:

1. **Primary Transaction Currency:**
   All VAULT transactions utilize `"ART"` as the primary medium of exchange. This includes marketplace purchases, service payments, and cross-chain operations.
2. **Gas Fee Mechanism:**
   Network operations require `"ART"` for gas fees, ensuring efficient resource allocation and spam prevention. The gas fee structure is dynamically adjusted based on network utilization.
3. **Staking Operations:**
   Tokens serve as collateral for network validation, with stakers receiving rewards proportional to their contribution. This creates a secure and decentralized consensus mechanism.

4.1.5.3 Ecosystem Development Support

Strategic token allocation supports ecosystem growth through multiple channels:

1. **Systems Development:**
   Sponsored development for open-sourced systems are a large goal for the ecosystem. Ideally, these become functional systems that help automate marketing, development and site building efforts.
2. **Developer Incentives:**
   Grants and rewards programs incentivize developers to build on the VAULT platform. This includes development grants, bug bounties, and performance-based rewards.
3. **Entrepreneurship Funding:**
   Dedicated funding pools support entrepreneurs launching new services and applications within the ecosystem. This includes startup grants, mentorship programs, and resource

allocation. Funds allocated into this venture will receive equity ownership and potentially generate external revenue into the VAULT.

4. **Hackathon Initiatives:**
   Regular hackathons with substantial prize pools encourage innovation and rapid prototyping. These events drive ecosystem growth and attract new talent.
5. **Application Development Support:**
   Ongoing support for promising applications through technical resources, marketing assistance, and integration support.

4.1.5.4 Privacy and Infrastructure

Token allocation supports critical infrastructure and privacy features:

1. **Zero-knowledge Implementation:**
   Tokens fund the development and implementation of zero-knowledge proofs, enabling private transactions and data protection within the ecosystem.
2. **Global Node Network:**
   Strategic investment in global node infrastructure ensures network reliability and performance. This includes hardware acquisition, maintenance, and operator incentives.
3. **Security Enhancements:**
   Continuous investment in security improvements and quantum-resistant cryptography research protects the network's long-term viability.

4.1.5.5 Distribution Mechanisms

Token distribution occurs through multiple channels:

1. **Airdrops on activity:**
   Targeted airdrops reward active ecosystem participants and drive adoption. Distribution is based on engagement metrics and contribution value.
2. **Validator Rewards:**
   Staking rewards are distributed according to a transparent APR schedule, encouraging network security and participation.
3. **Community Incentives:**
   Engagement rewards encourage community participation and ecosystem growth through various contribution mechanisms.

4.1.5.6 Supply Dynamics

The token supply follows a deflationary model with controlled emission:

$$\text{Total Supply} = \text{Initial Fixed Supply} - \text{Burned Tokens} + \text{Validator Rewards}$$

1. **Burning Mechanisms:**
   Tokens are systematically burned through network inactivity penalties, unused contract cleanup, and validator slashing conditions. This creates deflationary pressure and rewards active participation.
2. **Validator Emissions:**
   New tokens are generated through validator rewards, with emission rates adjusted based on network metrics and participation levels. This ensures sustainable network security while managing inflation.

3. **Dynamic Adjustments:**
   Supply parameters are regularly adjusted through governance to maintain economic stability and support ecosystem growth.

4.1.6 Technical Foundation

4.2 Layer 2 Infrastructure

4.2.1 Technical Foundation

Layer 1 is developed with EVM compatibility and built for WASM applications and Rust contracts.

4.2.2 Core Functionality

Layer 2 serves as the scaling solution that issues all of the smart contract standards that can be considered bilateral and legally binding to the participants of a transaction. It provides dynamic contract input data that allows for anyone to customize a specific smart contract transaction.

4.2.3 Contract Standards

It is important to mention the use of factory contracts wrapped around the following contract standards. These are best used when deploying a bazaar or marketplace. Factory contracts essentially provide all listing information and automatically fills out the listing information into a new deployed contract for the listing provider. Because this automates the generation of new contracts, these are most efficient inside public platforms where people can list and sell related items.

However, when one entrepreneur or developer is listing their item information in a dedicated website, it is best to deploy a series of customized contracts so that no one can self generate contracts based on the factory format.

Factory contracts store an array of listings generated from the factory, and if is used inside of permissioned websites where there is a limited amount of items, it may show array problems if the website maps out every item.

The standards proposed for the initial infrastructure consists of:

4.2.3.1 1. Physical Product Contracts

This is an upgradable smart contract standard that allows for any seller of a physical product to share the product information, price, quantity, delivery methods, delivery costs, and more. This contract needs to be upgradable because it allows for anyone to make a new contract by purchasing the information displayed in the contract, as well as modifying the new contract information, such as the quantity purchased, customer's delivery address, customer's name, and more. Importantly, the customer metadata must be converted and encrypted effectively, complying with GDPR and general data protection ethics - this can be encrypted using salt rounds from the private signing key, which is only decryptable by a given list of permissioned users found in the prime smart contract standard. Using zero-knowledge proofs to handle the encryption and decryption of consumer data may be the most valuable output.

4.2.3.2 2. Physical Service Contracts

Similar in the sense to the physical product contract standards, this is an upgradable smart contract standard that allows for any service provider to issue out promises of physical activities

for reward of compensation. Service providers need to provide the tasks they provide, location it is provided, and the results necessary to receive the prize. Customer data also needs to be encrypted similarly by upgrading a new smart contract which is only accessible to the contract owner and its list of permissioned users.

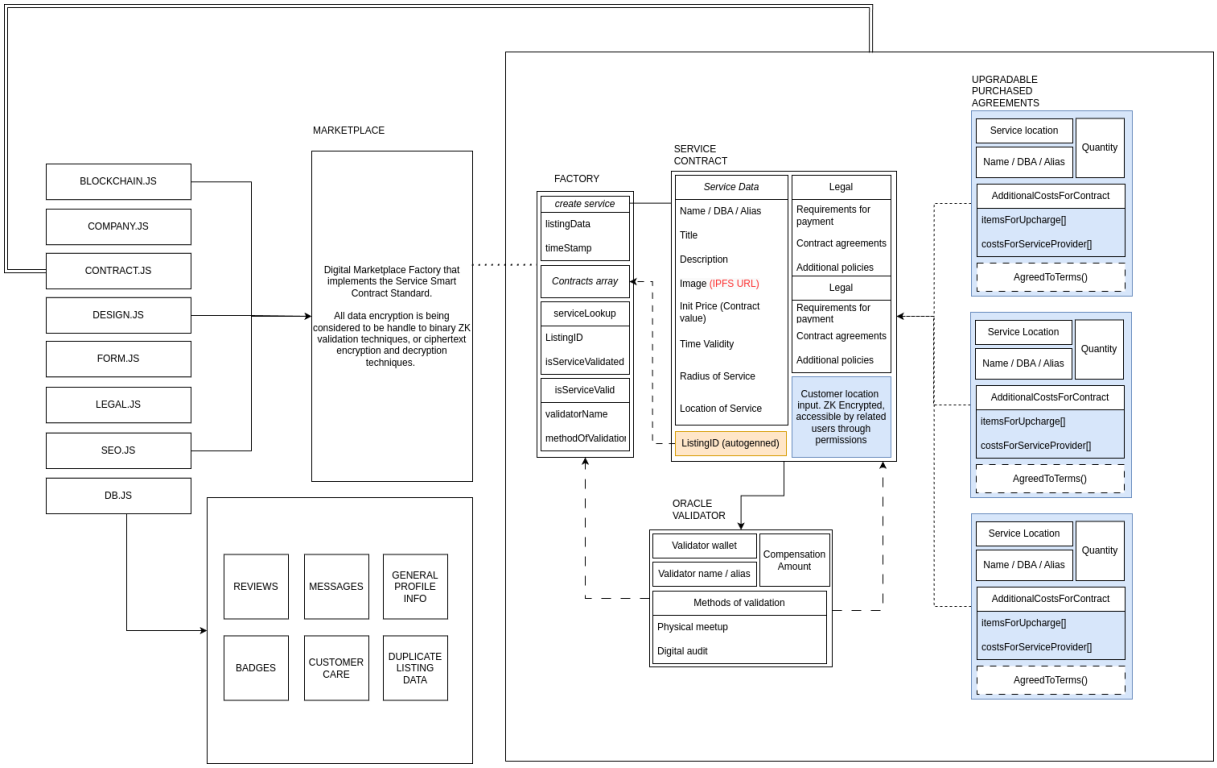

Figure 1: The Service smart contract infrastructure, including marketplace implementation. There is not currently a demo application pulic.

4.2.3.3 3. Delivery Service Contracts

This is the smart contract standard that allows for any delivery driver around the world to provide and distribute service of delivery of a given product or item in exchange for compensation. This smart contract provides a few unique features as well that is optional depending on the contract creator. For instance, being able to share and upload geolocation is essential for a lot of couriers being able to handle freight, being able to constantly update the initial standard allows for digital proof and timestamping of a physical delivery. Additionally, this is an upgradable smart contract in another sense that customers interested in purchasing delivery contracts need to provide customized instructions, pickup data, dropoff data, and be accessible for potential black swan events.

4.3 Layer 3 infrastructure

Arthur Labs will be developing out required and functional applications to help accelerate development, as well as provide necessary tooling to reach the traditional consumer market.

A few of these applications will dedicate its efforts into making as much of a traditional system as possible, where clients can process and checkout payments using traditional FIAT currencies to purchasing items, while benefiting from the enchanting effects of blockchains.

The majority of applications built from Arthur Labs into the VAULT include governance and voting platforms for the DAO, injected wallet providers, transaction judging and moderation, and a variety of mentioned applications that offer unique features.

4.4 Layer 4 Infrastructure

4.4.1 Consumer protection

Standalone business models can be built in the Arthur Labs ecosystem to handle consumer failures. For instance, being able to moat an insurance model around decentralized applications provides assurance for consumers that they can safely and seamlessly use the application and be compensated in case the blockchain isn't efficient.

4.4.2 Payment Infrastructure

Additional infrastructure such as account abstraction and guest accounts allow for users of the Arthur Labs ecosystem to not even need to touch blockchains in order to reap its benefits. Similar to Coinbase Guest, wallet providers in Arthur Labs may provide a debit or credit card payment method that entirely removes the need for users to interact with cryptocurrencies. By allowing the user to pay a weekly maximum amount (500) without needing to own a specific account, it allows for users to continue to browse and utilize the Arthur Labs ecosystem without even knowing.

4.4.3 User Account Management

Similarly to guest accounts for payments, users may also register through Layer 2 infrastructure using emails and passwords, which then automatically provides the user a unique wallet. Advanced and blockchain-savvy users can easily go through the settings in various protocols to easily change their account.

5 Provided Systems

5.1 DEAN System

DEAN is a digital marketplace factory for building two-sided marketplaces in Web3 compatible chains. Throughout or initial research phase in a previous Decentralized Courier Protocol (DCP), Arthur Labs found that most generalized marketplaces contain approximately 25-30 boilerplate components necessary for any marketplace to function, including explore sections, checkout processes, messaging features, profiles, and other various UI components. DEAN essentially builds out a dynamic and variable based approach for building any RWG, RWS or RWD marketplace by streamlining the component implementation, database connection, and other configurations essential to launching a marketplace.

Arthur Labs first built out the DEAN system prior to the ROSE system, as DEAN can quickly be modified and iterated from a Web3 marketplace and into Web2 marketplaces by simply changing account registration, payment checkouts, and database integration.

DEAN aims to become globally accessible and open source after initial platforms are generated on various EVM compatible chains. Additionally, in the DEANs configurations folder, there lies a blockchain agnostic configuration system where the marketplace owner can mention the primary currency used in the platform and which layer or chain it will be deployed on.

Currently, DEAN has been proven throughout various Polkadot, Binance, and Movement Labs to reduce the time to market to demo a platform from around 6-12 months to less than 4 days.

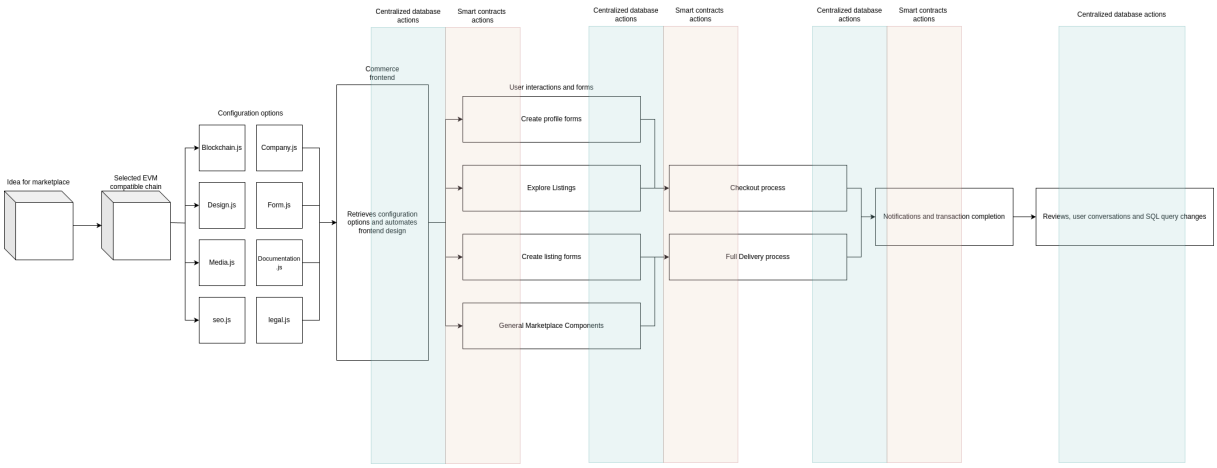

Figure 2: The System architecture for DEANs commerce marketplace. See https://demo.arthurlabs.net/ for a sample commerce marketplace

Seen above, the core difference with this architecture and the following ROSE Systems structure is the implementation of (initially specifically EVM) blockchains. In the figure above, the pink and blue highlighted sections store essential database information; The blue section is the centralized database information, where most information does not have to be deployed in a public ledger. The pink section is the listing agreements and contract transaction information, the information absolutely required to making this a blockchain enhancing tool.

5.2 ROSE System

ROSE is an abstracted product factory line focused on building Web2-based marketplaces. These act as independent agencies for Arthur Labs, which are contracted and licensed to startups who want to build their own marketplace.

These act as revenue streams for Arthur Labs ecosystem, which aims to primarily fund the DAO and various expenditures the organization faces. ROSE is an abstracted product factory line focused on building Web2-based marketplaces. These act as independent agencies for Arthur Labs, which are contracted and licensed to startups who want to build their own marketplace.

As ROSE develops further into a BYO MaaS, there is an intent to partner with ChaiBuilder (https://chaibuilder.com/) to build an interactive platform that imports the components from DEAN and configuration system to automate marketplace development for the creator.

Long term, both ROSE and DEAN aims to build a Lego-like architecture so any developer or builder can access the platform and deploy a new marketplace concept quickly, while Arthur Labs receives percentage ownership and revenue from each transaction.

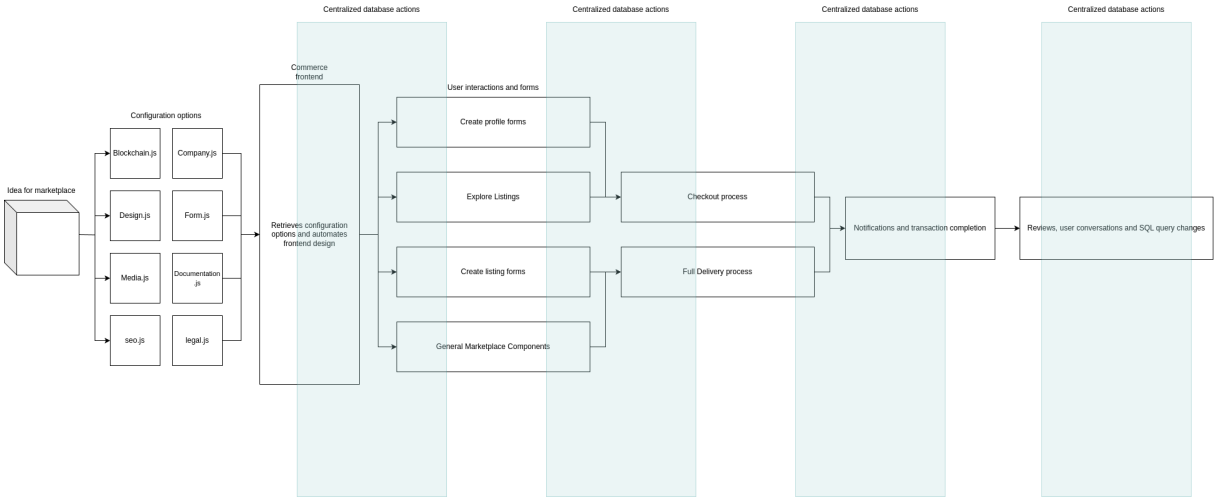

Figure 3: The System architecture for ROSEs commerce marketplace. There is not currently a demo application public.

Seen above, this system stores all data in a centralized database and processes payments through a traditional payment gateway API. Idealistically, Arthur Labs runs a few regional marketplaces that help generate revenue for the DAO, whether to issue staking rewards to token holders or to fund future marketplace development.

5.3 QUINN System

QUINN is a deployable feature for any Arthur Labs marketplace, in which is a form replication system that refactors and formats marketplace listings into various social media accounts.

This ultimately streamlines marketing costs for small businesses so that they can easily share and post their listings through a list of professionally designed media cards, in which once the business owner connects their business accounts (Instagram, Meta, X, Discord, Telegram, Element, Facaster, and any of social platform that takes in a similar set of form inputs)

The goal with implementing QUINN with the marketplaces is so entrepreneurs forming their own businesses can increase their media exposure by over 500% while reducing the time for manual replication by 80%.

This system is permanently free in the ecosystem but may be optionally licensed out to other blockchain networks.

5.4 SUSAN System

SUSAN is a conjoint effort from three companies, an anonymous serial startup agency in Texas, and Frank Dierolf, a contractor and freelancer based in Germany, and Arthur Labs. SUSAN is a comprehensive application and tooling system that follows a sequential list of tasks to build a thorough application.

Firstly, SUSAN asks a client what business concept they have, and if that is under an existing company, or to tailor its designs and code from scratch. After receiving the clients input, and various design references, the tool completes a deep research report about the business opportunity, and frameworks it should use. Once the report is concise and completed, it proceeds to generate a new repository for its code, likely using NextJS and Tailwind CSS.

With a series of already integrated Model Context Providers (MCP), SUSAN proceeds to build out an application tailored to the design references and report analysis. Initially the application builds out the design schematics, then proceeds to build functions and necessary components to build an MVP. Once these sections are near completed, SUSAN continues on with MCP functionality by reading the clients API connections to various payment providers, database handlers, and other necessary APIs to build out the MVP. The MCP connection retrieves existing structures, and modifies the clients connections to fit the functionality of the application. After its connections and completion, SUSAN then handles SEO optimization and various build changes. Finally, one of the three companies overviews and finalizes any core design changes or building changes and manually modifies the program to ensure proper functionality ready for MVP and production.

5.5 BUILDER System

BUILDER is an Arthur Labs website builder, dedicated primarily to contract development work to various USA sites, but is globally accessible for work. Revenue generated from BUILDER proceeds to then fund the core development of the overall ecosystem, and any excess profits go into the token holders.

6 ART Token

6.1 Token Overview

The VAULTs native token is VAU, which is used as the chains native currency. The base currency has a fixed initial offering amount of 1,000,000,000 VAU tokens. Any initial unpurchased tokens during the series of initial launches are permanently burned. Future tokens are generated through network block validation, or PoS.

Ideally, there are paired stablecoins with VAU to ensure consumer usage without risk to price slippage or inflation.

The inital coin offering is set to have Arthur Labs DAO ownership tokens spread across Ethereum, Polygon, Base, and various platforms. All holders who purchase inital VAU tokens will receive 30% additional tokens for their initial purchasing.

Currently, as of Jan 15th, Arthur Labs is legally structured as an S-Corp. However, with the initial offering, Arthur Labs will be restructured into a Wyoming DAO LLC with its correctly allocated percentage ownership.

However with the blockchain completing development, the legal infrastructure will change from an S-Corp to become a DAO. This is due to the current lack of decentralization in the network, and need node operators and validators to begin voting in DAO goverannce.

Staked tokens act as validator nodes. Nodes will be required to hold at least 500 VAU tokens in order to become an operator and validator. These pools of VAU work towards validating transactions and optionally operating to validate authenticity of a specific transaction. Based on their activity in validations and good actions of a node, they will receive additional tokens as rewards.

Arthur Labs would like to see a future similar to Polkadots parachain mechanism, where side chains can exist in harmony. Polkadot parachains operate as standalone networks in an ecosystem of other networks. Each parachain hosts their own blockchain cryptocurrency,

while being functionally exchanged in other networks in its ecosystem. The VAULT would like to perform a similar act, where standalone networks can join this network and use its core infrastructure to generate a new blockchain dedicated towards real world utility. Whether it's a real world asset validator, or anything that helps specific people in regions, its optimistic in enabling developers to connect with a new economy.

The DAO governance board will be to help govern a wide array of items, whether to help with Airdrop allocation, marketing campaigns, or infrastructure and improvement proposals.

6.2 Token Utility

The intended future purpose of the token is to validate transactions, giving staking rewards to long term holders. Additionally, the token aims to be used as primary form of payment across Arthur Labs native marketplaces and commerce platforms. Token holders would receive rights to earnings across marketplaces and would act as a percentage ownership of the chain and DAO. These tokens additionally can be exchanged for ART.A shares, which can then be used as operational voting ownership and governance.

6.3 Token Economics

Marketplaces produced from the DEAN and ROSE systems will have a joint earnings reward for both parties transacting in a trade agreement. These earnings will be ART.B token, which can be utilized inside of the parachain, or sold for open market value.

A treasury will be hosted additionally to incentivize RWG, RWS, and RWD development inside of Arthur Labs ecosystem, as well as layered applications.

6.4 Token Sale Details

VAU tokens are available in the Polygon and Ethereum main network for the initial coin offering purchase. Both of these contracts will store the initial owners address and will be saved until the test network and main network is released, there the holders can stake and continue their interest in Arthur Labs.

Initial token sale revenue is used to hire and onboard developers and marketing agents to continue the expansion of the ecosystem. Launching live marketplaces available in Ethereum and Polygon.

Users will additionally receive VAULT tokens as they transact inside of the existing marketplaces.

Additional tokens will be distributed to bounty hunters and community in forms of Airdrops for their engagement and value.

6.4.1 Platform Revenue Model

Every marketplace produced in both DEAN and ROSE is aimed to have a targetted marketplace owner in a standalone EVM compatible chain. Additionally, marketplaces are produced to only be viable regionally. Ideally, Arthur Labs hosts and maintains a series of platforms across leading chains, like Ethereum, Solana, Sui, Rootstock, Polkadot, and Cardano.

Revenue generated from the centrally hosted chains will be invested into building the larger ecosystem.

Applicants are encouraged to apply for a customized marketplace through the https:// arthurlabs.net/ application form. Once approved, applicants will receive a list of offers for split revenue ownership of the marketplace.

All marketplaces are hosted in a central code branch, where general marketplace bugs and development can cross develop, saving overall costs. All marketplaces are additionally encouraged to branch and develop out unique features and components necessary to individualize their marketplace, but use the DEAN factory as an initial boilerplate to produce a USP.

Generally speaking, Arthur Labs will aim to receive 2.5% transaction fees for product sell contracts to be generated into the marketplace + a flat 0.25 fee. Then an additional 2.5% and 0.25 is charged to the contract purchaser, with a final 2.5% and 0.25 final charge for both parties during the payment proxy stage.

For instance, a 20.00 item will earn a total of 10% in transaction fees, and a 1.00 flat fee, as both parties pay 5% and 0.50. Earning a 15% margin.

7 Additional Notes

7.1 Initial Marketplace Deployments

As of January 2025, Arthur Labs is nearing completion of the demo application with full Web3 functionality. The strategic deployment across multiple blockchain ecosystems maximizes accessibility while leveraging the unique strengths of each network. Arthur Labs will launch in the following ecosystems:

7.1.1 Polygon

https://polygon.technology/ Polygon's ecosystem stands out for its commitment to zero-knowledge cryptography and cost-efficient transactions, making it ideal for high-frequency marketplace activities. Their extensive developer tooling and robust infrastructure provide Arthur Labs with the necessary framework to implement advanced privacy features and scalable solutions. The network's dedication to ZK technology aligns perfectly with Arthur Labs' vision for secure, private consumer data handling in decentralized commerce.

7.1.2 Optimism

optimism.io/ Optimism's innovative approach to Layer 2 scaling through optimistic rollups offers Arthur Labs the ability to process large volumes of marketplace transactions with minimal fees. Their established presence in the DeFi ecosystem provides a ready audience for real-world commerce applications. The platform's dedication to public goods funding also aligns with Arthur Labs' mission to democratize marketplace access. Currently, Arthur Labs utilizes the opBNB Testnet for development and testing, demonstrating the viability of the platform's architecture.

7.1.3 Ethereum

ethereum.org As the foundation of decentralized applications, Ethereum provides Arthur Labs with unparalleled security and network effects. The ecosystem's maturity and widespread adoption make it essential for establishing credibility and accessing the largest possible user base for marketplace deployment. Ethereum's upcoming developments in scaling and efficiency will further enhance marketplace functionality.

7.1.4 Arbitrum

https://arbitrum.io/ Arbitrum's Layer 2 solution offers Arthur Labs the perfect balance of Ethereum's security with improved throughput and reduced costs. The platform's compatibility with existing Ethereum tools and infrastructure allows for seamless deployment of marketplace contracts while maintaining high performance and low transaction fees. This makes it particularly suitable for marketplaces with high transaction volumes.

7.1.5 Rootstock

https://rootstock.io/ Rootstock's unique position as a Bitcoin sidechain with smart contract capabilities opens up unprecedented opportunities for Arthur Labs. As a leader in Bitcoin-based EVM deployments, Rootstock provides access to the Bitcoin ecosystem's massive user base and liquidity. This integration is particularly valuable for:

- **Global Reach:** Enabling marketplace deployment in regions where Bitcoin adoption is high, particularly in developing economies.
- **Bitcoin Integration:** Leveraging Bitcoin's network effect while providing smart contract functionality.
- **Regional Markets:** Facilitating localized marketplace creation in crypto-forward jurisdictions like El Salvador and Liberland.
- **Financial Inclusion:** Providing entrepreneurial tools to regions with limited access to traditional financial infrastructure.

This multi-chain deployment strategy ensures that Arthur Labs can serve diverse market needs while leveraging each network's unique advantages. By maintaining presence across these key ecosystems, we create a robust and accessible platform for global commerce, enabling entrepreneurs worldwide to participate in the decentralized economy regardless of their technical expertise or geographic location.

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