City of Coins:
Liquidity Routing Platform

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Abstract **3**
1. Introduction **4**
1.1 The Problem 5
1.2 Limitations of existing solutions 6
Trade-off Chart 7
Proposed Solution 7
2. Design Principles **8**
2.1 Technicals 8
3. Architecture **9**
Dual-Engine Integration 9
Gas Token Abstraction 9
Advanced Chain Abstraction 10
3.1 Security Protocols 11
Non-Custodial & Asset Isolation 11
Infrastructure Hardening 11
Advanced MEV Resistance 11
3.2 Hybrid Swap Logic 12
4. Core Mechanism **13**
4.1 Overview 13
4.2 Core Components 14
User Interface (UI Layer) 14
Routing Controller (Core Logic Layer) 14
Provider Integration Layer 14
Transaction Tracking Module 15
External Execution Systems 15
4.3 The Routing Decision Logic 16
Input Parameters 16
4.4 Models 16
Instant Execution Model 16
Advanced Routing Model 16
5. Protocol Mechanics **17**
5.1 State Changes 17
Different system states 17
5.2 Edge Cases 18
5.3 Use Cases 18
6. Comparison **19**
7. Conclusion **20**
Departure from the “playground” era 20
The Road Ahead 20

Abstract

The coming of different blockchain networks has resulted in a hyper-fragmented liquidity landscape, creating significant friction for the global transition towards decentralized finance. City of Coins is a next-generation liquidity routing platform designed to unify this fragmented ecosystem through a high fidelity, non-custodial swap interface.

By integrating the intent-based settlement of the deBridge Liquidity Network (DLN) and the extensive cross-chain reach of ChangeNOW, City of Coins abstracts the complexity of bridging, gas management and slippage into a singular, “zero-friction” user experience. Supporting +15 blockchains and thousands of different asset pairs, the platform eliminates the need for user registration and custodial risk. The result is a professional-grade exchange environment, the City of Coins, that provides the security of a DEX with the high efficiency and depth of a cross-chain aggregator. This whitepaper outlines the architectural framework, security protocol, and routing logic that positions the City of Coins as the premier gateway for the 2026 multi-chain economy.

1. Introduction

In 2026, the multi-chain has already been realized. From Layer 2 rollups and app-chains to standalone Layer 1 networks, the crypto-economy is more powerful than ever, yet more divided. For the average user and institution, navigating this landscape remains a “wild” experience; plagued by unsafe bridges, “wrapped” token risks, and the constant friction of managing multiple native gas tokens.

The industry has already outgrown the era of the single chain exchange. Crypto users no longer want to be residents of just one blockchain or a few blockchains; they want to be citizens of a global digital economy.

City of Coins was conceived as the architectural answer to this fragmentation. We believe that an exchange should be more than just a tool. It should be a stable, permanent infrastructure, a City where all roads (blockchains) connect.

The mission is to unify the chaotic landscape of different types of (decentralized) exchange platforms and to set a new quality standard regarding user experience and crypto accessibility. Whether a crypto user is moving stablecoins across EVM chains or swapping rare assets between non-EVM blockchain environments like Solana and Bitcoin, City of Coins ensures that the technical “pipes” remain invisible (abstract). The priority is a matured brand identity, moving away from gamified, food-themed UI of early DeFi towards a more prestigious, “deluxe” interface that commands the trust of serious capital.

The City of Coins framework is built to facilitate crypto ecosystem growth by addressing two fundamentals:

1. **The Accessibility Gap:** By removing registration and accounts, we restore the original promise of permissionless finance.
2. **The Discovery Barrier:** By indexing thousands of different cryptocurrencies and +15 blockchains, we ensure that the City is always the first to give access to the next generation of trending assets.

1.1 The Problem

Crypto liquidity is fragmented over multiple blockchains, and accessing it for transactional purposes is unnecessarily complex. This problem statement has four main core aspects which are going to be explained and a solution is gonna be proposed at the end.

Fragmented liquidity in this context means that liquidity is split across DEX's, bridges, swap services and multiple blockchains. All of these systems are disconnected.

Furthermore, to do one cross-chain swap manually, a crypto user might need to; choose a DEX, decide which bridge is going to be used, manage slippage, and effectively switch wallets and/or blockchains.This is not doable for the average crypto user and even if it was, it is too taxing. All of this adds up to the execution complexity of transactions.

Lack of routing intelligence also factors heavily on this because the average crypto user does not know the best route from cryptocurrency A to cryptocurrency B, so therefore, comparing options is not possible at all. Not being able to optimize gas fees also increases potential transaction failure which makes this process highly complex even for experienced crypto users.

At last, the inconsistent UI/UX across different systems makes the user experience unreliable. Each platform works differently, shows different data and has different risks. Based on this, the conclusion is that there is no unified experience.

1.2 Limitations of existing solutions

Why are current existing solutions not able to fully solve this problem? Well the issue lies in the fact that existing solutions only address individual parts of the problem such as;

1. Cross-chain access
2. Intelligent routing
3. Simple unified UI/UX design

DEX's (like Pancakeswap)	**Aggregators** (like 1inch)	**Cross-chain aggregators** (like Rango Exchange)	**Instant swap services** (like Simpleswap)
(+) On-chains swaps	(+) Route multiple DEX's	(+) Cross-chain routing	(+) Very simple UX
(+) Transparent execution	(+) Optimize price within a chain	(+) Multiple integrations	(+) No technical knowledge required
(+) Liquidity pools	(+) Advanced order types	(+) More complex execution paths	(+) Fast execution
(-) Chain isolation	(-) Very complex for beginners	(-) UX complexity	(-) No routing transparency
(-) Only uses its own liquidity pools	(-) Fusion Mode limitations	(-) Requires lots of technical knowledge	(-) Black box execution
(-) Requires lots of technical knowledge	(-) Not abstracted	(-) Not beginner-friendly	(-) Not flexible

DEX's: Provides liquidity but not unified access.
Aggregators: Aggregators optimize routing but don't fully abstract cross-chain complexity.
Cross-chain aggregators: Powerful routing but not simple enough for mass usability.
Instant swap services: Simple and fast execution but no control and/or visibility.

Currently, there is no solution which addresses this problem in its entirety. Furthermore, all of these partial solutions require tradeoffs between usability, transparency and crypto access.

City of Coins addresses this gap by integrating multiple execution models into a unified interface, allowing users to choose between a simple execution mode or advanced routing mode within a single system, increasing the UI/UX.

Trade-off Chart

All existing solutions force a tradeoff:

System	Strength	Weakness
DEX	Transparency	Fragmented
Aggregator	Optimization	Complex
Cross-chain aggregator	Coverage	Overwhelming
Instant swap service	Simplicity	Opaque

Proposed Solution

Utilizing a unified swap interface with a DEX Mode creates a unique system with the simplicity of instant swap services combined with the transparency and the high crypto coverage of cross-chain aggregators enabling crypto users to experience the best of all worlds without a tradeoff.

2. Design Principles

The problem statement of fragmented liquidity and the high complexity of accessing it for transactional purposes has a proposed solution which will be further discussed from here on. This solution is designed as a goal and the formed answer to this problem statement is a liquidity routing platform.

City of Coins removes fragmentation by unifying access to cross-chain liquidity and simplifying execution through intelligent routing. City of Coins does **not**;

- create liquidity
- replace DEX's
- replace bridges

City of Coins connects and routes between them in ways that users don't have to think about.

2.1 Technicals

The stack is basically a liquidity routing layer plus an execution layer on top. The system in the backend aggregates liquidity providers, selects routes, makes execution more simple and presents an unified UX.

- **Abstraction**

Users don't interact with:

- DEX's
- bridges
- routing logic

- **Modularity**

Providers can be:

- added
- replaced
- upgraded

- **Dual Execution Modes**
- Instant → Simplicity
- DEX → Transparency

- **Transparency Gradient**
- High (DEX Mode)
- Low (Instant Mode)

- **Externalized Execution**
- Execution handled by providers
- System handles coordination

3. Architecture

City of Coins operates as a cross-chain liquidity routing interface composed of modular components that coordinate execution across multiple external providers. Our architecture utilizes a ‘’Liquidity-as-a-Service’’ (LaaS) model.

The system includes a routing controller, provider integration layer, and a transaction tracking module, enabling both simple instant swaps and advanced cross-chain routing. By abstracting execution complexity while maintaining optional transparency, the platform provides unified access to fragmented liquidity across blockchain systems. Decoupling the user interface from the underlying liquidity, ensures that the platform remains lightweight, scalable, and highly resilient.

Dual-Engine Integration

The platform operates via two primary architectural pathways:

1. **The Instant Swap Engine (Powered by ChangeNOW):** A liquidity aggregator that handles cross-chain swaps through an automatic swap exchange system.
2. **The DEX Mode Engine (Powered by deBridge):** A decentralized cross-chain interoperability layer. This pathway utilizes the deBridge infrastructure to enable high speed, 0-slippage transfers and smart contract-based swaps that maintain the chain’s native security properties.

Gas Token Abstraction

The DEX Mode Engine uses an intent-based cross-chain routing model instead of the traditional transaction model. Through this new design, users don't need to manage multiple native gas fee tokens (like ETH or SOL) on different blockchains. Instead, the complexities of transaction landing, gas payments, and cross-chain execution are pushed to a network of professional market makers and solvers.

Instead of a user manually initiating and broadcasting a multi-step transaction, across multiple blockchains, they sign a single “intent” (an off-chain message specifying their exact desired outcome).

- The user only needs to sign to authorize the signature using their wallet.
- They do not need to hold or spend the destination blockchain’s native gas token to receive or interact with their assets.

Advanced Chain Abstraction

Building on top of the core intent layer, deBridge utilizes an execution primitive called deBridge Bundles.

- Bundles allow developers to abstract away native gas balances, fragmented liquidity, and cross-chain orchestration completely.
- A crypto user can trigger a cross-chain action using a single click from their home chain. Other decentralized exchanges force users to switch blockchains. The Bundle groups cross-chains swaps, gas payment, and smart contract interaction into a single cohesive flow handled entirely behind the scenes.

Ultimately, gas gets treated as a backend infrastructure cost that market makers and solvers manage, turning what used to be a multi-step obstacle into a seamless, “gasless” front-end experience for the user.

3.1 Security Protocols

By utilizing these battle-tested infrastructures, City of Coins minimizes ‘’smart contract risk’’ compared to new, un-audited protocols. The architecture is strictly non-custodial; the platform serves as the routing interface, ensuring that at no point does City of Coins hold user private keys or control the final destination of assets beyond the automated swap instructions.

Non-Custodial & Asset Isolation

The fundamental security principle of the City of Coins is the Strict Zero-Custody Policy.

- **No Internal Balances:** Unlike traditional exchanges, City of Coins does not maintain internal user wallets. User funds only interact with the routing logic for the duration of the swap.

- **Risk Mitigation:** This architecture ensures that even in the event of a frontend disruption, user assets remain safe in their own wallets. There is no central pool of funds for malicious actors to exploit.

Infrastructure Hardening

We “borrow” the most audited protocols in the industry:

- **ChangeNOW’s AML & Fraud Detection:** For standard swaps, our integration utilizes automated Anti-Money Laundering (AML) scoring. This prevents the liquidity routing platform from being used for illicit flows, maintaining our reputation with global liquidity providers and ensuring the flow of clean funds.

- **The deBridge (DEX Mode):** City of Coins utilizes the deBridge DLN (deBridge Liquidity Network), which operates on a “Zero Pooled Value” model. By moving value through locked-intent messages rather than massive liquidity pools, we remove the primary target that traditional bridges present to hackers.

Advanced MEV Resistance

Maximal Extractable Value attacks, also known as “sandwiching”, typically exploit the transparency of public mempools on blockchains like Ethereum. City of Coins mitigates this through two distinct architectural models:

- **The ChangeNOW Aggregator Path:** For standard swaps, ChangeNOW routes through decentralized liquidity of Uniswap and Pancakeswap. These trades are settled through private execution paths or large-scale internal offsets; they are naturally shielded from “sandwich” bots that haunt public decentralized pools.

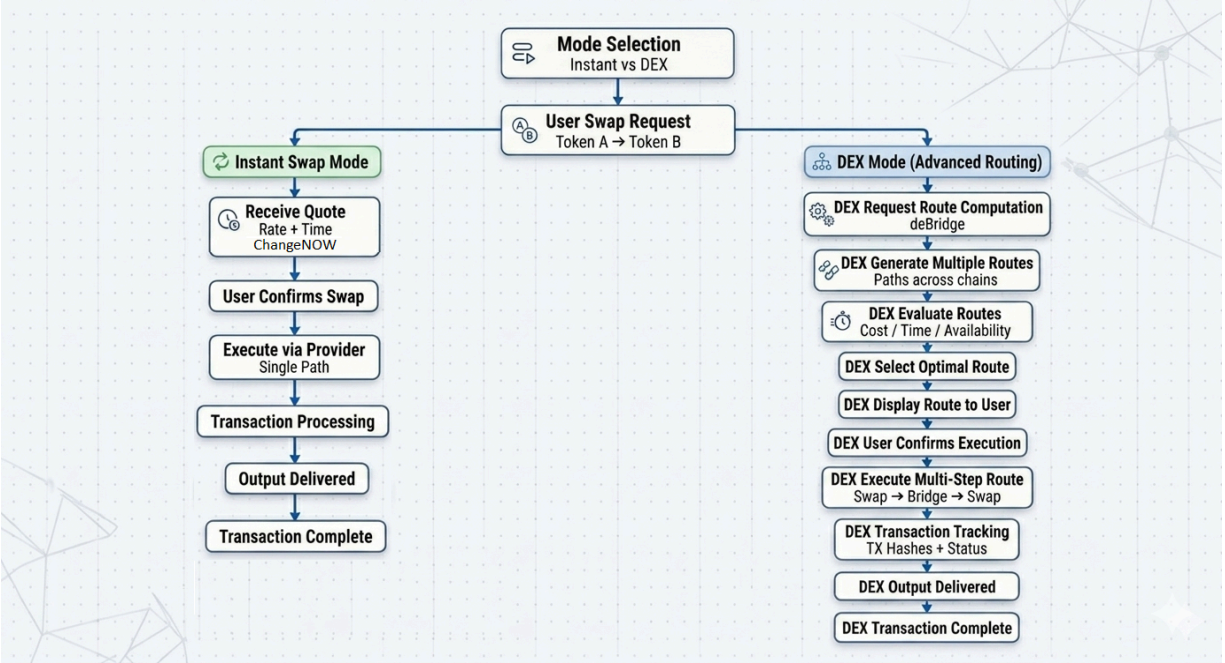
- **The deBridge DLN (DEX Mode) Intent Model:** Unlike traditional AMM’s where you broadcast exactly which pool you will hit (making you an easy target), deBridge uses an intent-based architecture. Users sign an “intent”, and professional solvers (market makers) compete off-chain to fill it. This removes the predictability that arbitrage bots rely on to frontrun your trades.

3.2 Hybrid Swap Logic

The platform intelligently routes requests based on the user's selected mode:

- **Instant Swap (Standard Mode):**
  - Initiation: The user defines the input and output address.
  - Validation: The system generates an unique **Exchange ID** and a deposit address.
  - Execution: Upon receiving the deposit, the ChangeNOW API triggers a market rate swap and pushes the resulting asset to the recipient wallet.

- **Decentralized Swap (DEX Mode):**
  - Validation: Utilizing deBridge's DLN (deBridge Liquidity Network), orders are placed as limit orders on-chain.
  - Settlement: "Makers" fill the order on the destination chain immediately after the cross-chain message is validated by the deBridge validator set. This removes the "wait time" usually associated with traditional bridges and this also removes the need for native gas fee tokens in transactions.



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4. Core Mechanism

4.1 Overview

At its core, City of Coins operates through a core mechanism that:

Step 1: Requests Normalization
- Converts user input → provider-compatible format

Step 2: Quote Retrieval
- Fetch:
  - Rate
  - Time
  - Route (if DEX Mode)

Step 3: User Confirmation
- User approves execution

Step 4: Execution Trigger
- Funds sent
- Provider executes:
  - Swap
  - Bridge
  - Multi-step route (if necessary)

Step 5: Transaction Tracking
- Monitor:
  - TX hashes
  - Confirmations
  - Status

Step 6: Output Delivery
- Final asset delivered
- Result normalized in UI

This system controls how execution is selected and initiated.

4.2 Core Components

City of Coins uses a three layer system which is composed of a user interface, a routing controller and a provider integration layer.

User Interface (UI Layer)

Function:

- User interaction point

Responsibilities:

- Mode selection:
  - Instant Swap Mode
  - DEX Mode (Advanced Routing)
- Token selection (input/output)
- Amount (input)

- Display:
  - Quotes
  - Routing paths
  - Transaction status

Routing Controller (Core Logic Layer)

Function:

- Decision engine of the system

Responsibilities:

- Determine execution mode
- Select appropriate provider
- Normalize requests
- Route execution requests
- Manage fallback logic

Provider Integration Layer

Function:

- Connects system to external providers

Integrated Providers:

- ChangeNOW (instant swap execution)
- deBridge (cross-chain routing + execution)

Responsibilities:

- API communication
- Request/response handling
- Execute initiation

Transaction Tracking Module

Function:

- Tracks execution lifecycle

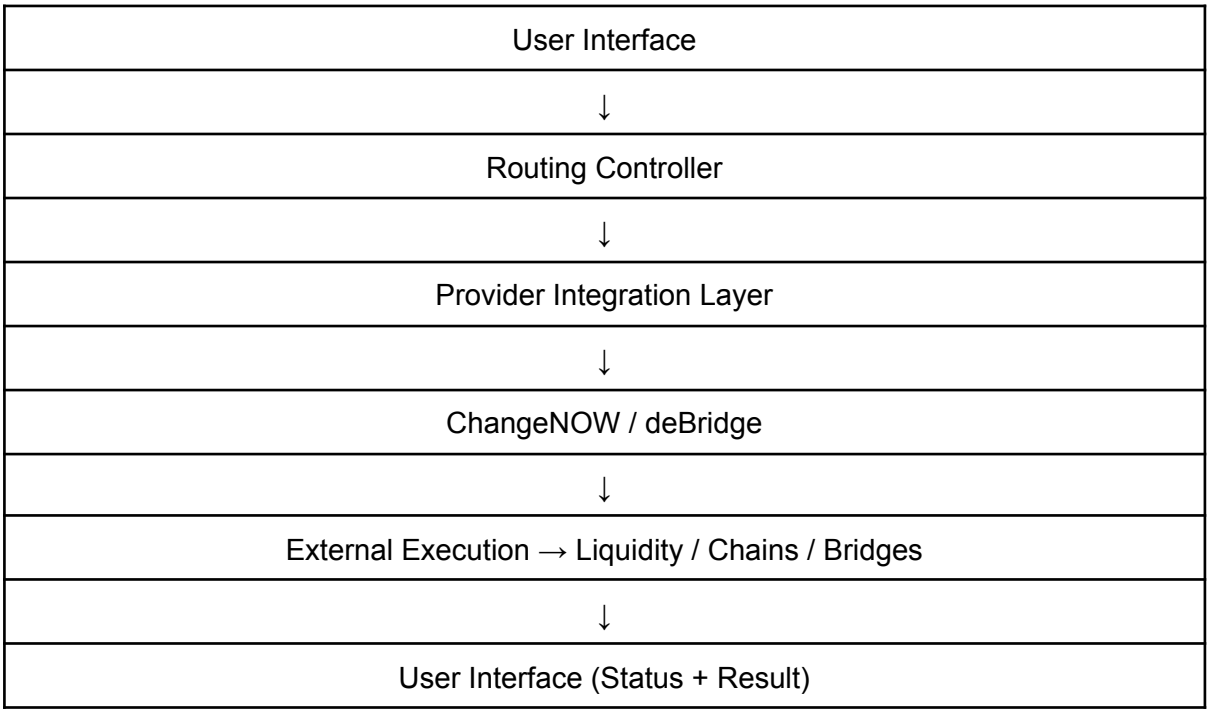
Responsibilities:

- Monitor transaction status
- Store tx hashes
- Link to blockchain explorers
- Update UI in realtime

External Execution Systems

Includes:

- DEX’s (liquidity pools)
- Bridges
- Blockchain networks (Ethereum, Tron, BNB Chain, Polygon, Arbitrum, Avalanche, Solana, Linea, Optimism, Base, Hyperliquid, HyperEVM, Story, Flow, Sei)



4.3 The Routing Decision Logic

Input Parameters

When a crypto user submits a request;

- Selected mode:
  - Instant Swap
  - DEX (Advanced Routing)
- Input token (A)
- Input token (B)
- Amount
- Fixed rate or floating rate (if Instant Swap)
- Source chain
- Destination chain

4.4 Models

Step 1: Mode Selection

If user selects Instant Swap:
route ⇒ Instant Execution Model

Or if user selects DEX Mode (Advanced Routing):
route ⇒ Advanced Routing Model

Instant Execution Model

Provider: ChangeNOW
Route = single path (abstracted)

Output:

- Execution time
- Final amount

Advanced Routing Model

Provider: deBridge
Request ⇒ Route **Computation**

Routes = {
path_1: chain A → chain B → swap → execution
path_2: swap → bridge → swap
path_3: direct bridge (if available)
}

5. Protocol Mechanics

From here on it will be about state changes, edge cases and use cases included.

5.1 State Changes

Different system states

Initiated
↓
Quoted
↓
Confirmed
↓
Executing
↓
Settled
↓
Completed

5.2 Edge Cases

1. **Provider Failure (Instant Swap)**

- Cause: Provider issue
- Handling:
  - Status update
  - Provider-level resolution

2. **Execution Continues / Cancelled Order (DEX)**

- Cause: Volatile market movement(s)
- Handling:
  - Execution continues
  - Or trade cancels and assets are returned
  - Final output delivered

3. **No Route Available**

- Cause: Unsupported pair
- Handling: Return error

4. **Network Congestion**

- Cause: Blockchain delays
- Handling:
  - Delayed execution
  - Status tracking active

5. **Cross-Chain Failure**

- Cause: Bridge interruption
- Handling:
  - Transparent transaction updates
  - Or transaction cancels

5.3 Use Cases

Beginner:

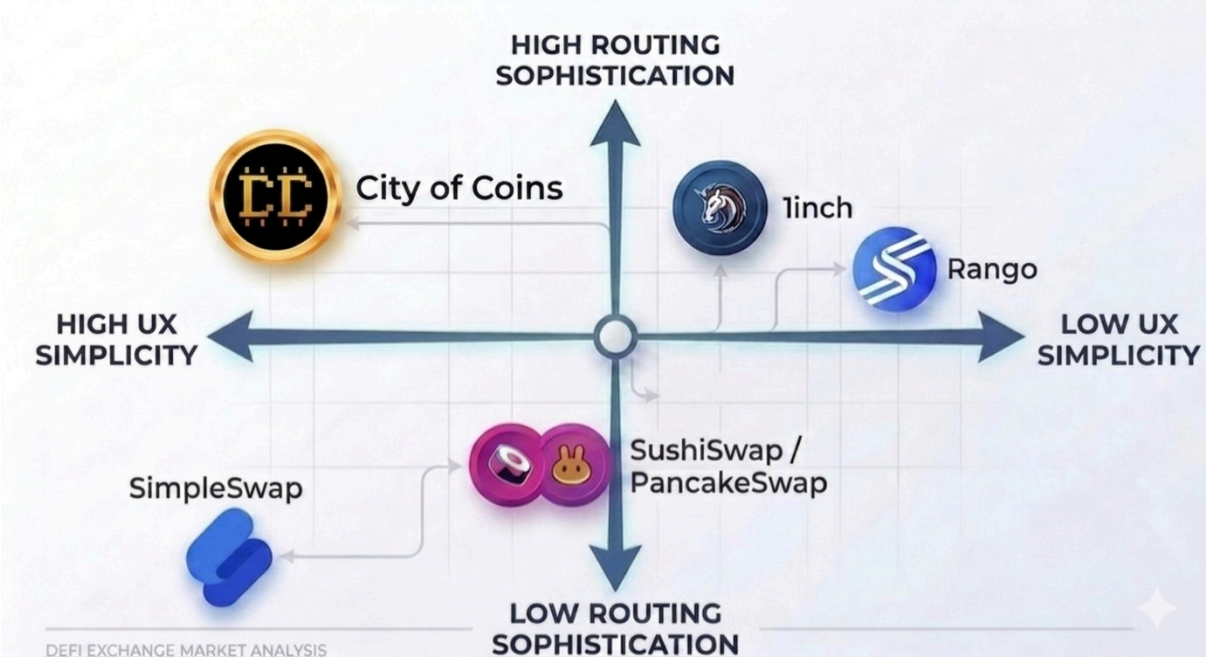
- Uses Instant Swap
- Goal: speed & simplicity

Advanced User:

- Uses DEX Mode
- Goal: transparency & gas fee optimization

6. Comparison

Below is a comparison matrix including different exchanges within an axis of routing sophistication and UX simplicity.



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1Inch: High sophistication with access to a lot of different cryptocurrencies and blockchains but UX simplicity is rather low.
Rango Exchange: Also high routing sophistication with 64 blockchains included but technical knowledge is required for proper use making the UX simplicity also relatively low.
SushiSwap/PancakeSwap: Low routing sophistication with lesser amounts of blockchains integrated but the UX simplicity is prevalent.
SimpleSwap: A rather low routing sophistication with no possibility to connect a wallet and switch blockchains. The instant swap service has a high UX simplicity though because of a vast amount of cryptocurrencies from different blockchains.
City of Coins: A high routing sophistication due to the amount of blockchains integrated (+15) while also retaining a simple user interface due to the Dual Mode engine.

7. Conclusion

The era of fragmented, isolated blockchains has come to an end. In its place, a new reality has emerged. One where the value of a financial platform is measured by its operability, its integrity and its abstraction. City of Coins was built to be the definitive architecture for this era.

By synthesizing the decentralized intent-based routing of deBridge with the massive asset depth of the ChangeNOW engine, the outcome became more than just an exchange. The result is a platform with infinite liquidity, a crypto gateway where any user, regardless of technical expertise or geographic location, can navigate the complexity of +15 blockchains with the simplicity of one click

Departure from the “playground” era

While the early years of DeFi were defined by “food-themed” experimental protocols and high-friction interfaces, City of Coins represents the maturity of the industry. Our focus is a professional, high-end “deluxe” UX, combined with a privacy-first architecture and robust MEV resistance, aligns us with the needs of the 2026 user; someone who values their time, their assets and their privacy above anything else.

The Road Ahead

Our journey does not end with the swap. As the “skyline” of the City expands, the commitment remains the same:

- **Scale without friction:** Continuing to index as many cryptocurrencies and blockchains as the purpose is to eventually provide all the cryptocurrencies in the market.
- **Trust through transparency:** Maintaining a non-custodial framework where the user is always the true owner of their capital.

In a world where centralized institutions continue to face challenges of trust and transparency and where decentralized exchange platforms have their strong points but also their weaknesses. City of Coins stands as a neutral, automated, and resilient alternative. We invite you to step through the gates of the City and experience the future of cross-chain finance, where the world’s liquidity is finally at your fingertips.