

Business logic audit report

A business analyst's read of the protocol: does the product do what its documentation and pitch promise, does the money flow where stakeholders expect, and which behaviors put revenue or users at risk.

The subject of this sample, the Lumenswap Protocol, is a fictional decentralized exchange invented for illustration. Names, figures and findings are examples of format and depth, not real results.

1. Executive summary

The product largely delivers its promised mechanics. We found three gaps between the documented model and the implementation: one affects user fairness (reward timing), one leaks protocol revenue (fee rounding), and one threatens solvency in stressed markets (liquidation incentives). Two were fixed during the engagement; one was accepted and documented by the team.

2. Business model overview

Lumenswap earns a 0.3% fee per swap, split 70/30 between liquidity providers and the treasury. Liquidity providers stake for time-weighted rewards. Growth depends on deep liquidity; liquidity depends on reward fairness and withdrawal confidence. That chain of dependencies frames every finding below.

3. Promise vs implementation

Documented promise	What the code does	Business impact
Fees split 70/30 LPs to treasury	Split applied before rounding; dust accrues to treasury	Minor LP shortfall, disclosure recommended
Rewards proportional to time staked	Snapshot at claim time only	Early stakers diluted, retention risk
Withdrawals always available	Pauser role can halt withdrawals	Trust gap between marketing and mechanics

4. Revenue and incentive analysis

Reward timing (fixed): a large deposit made just before distribution captured rewards earned by others. Loyal liquidity subsidized opportunistic capital; over time that drains exactly the users the model depends on. Resolved with per-deposit accounting.

Fee rounding (fixed): dust-sized swaps rounded fees to zero, so high-frequency bots traded revenue-free.

Bounded by gas costs but a real leak at scale. Resolved by rounding fees up and enforcing a minimum trade size.

Liquidation economics (accepted risk): the fixed liquidation bonus drops below gas cost during congestion, so bad positions stay open in exactly the markets where they hurt most. The team accepted this with a documented plan to index the bonus to gas.

5. User journey review

Step	Experience	Note
Deposit	Clear, single transaction	No issues
Stake and earn	Rewards visible per block	Fair after the timing fix
Claim	One claim per epoch	Gas-heavy for small positions, batching suggested

Step	Experience	Note
Withdraw	Instant in normal operation	Pause powers must be disclosed in user docs

6. Metrics worth monitoring after launch

Share of rewards claimed by deposits younger than one epoch (gaming signal); fee revenue per unit volume (leak signal); time-to-liquidation during gas spikes (solvency signal); withdrawal volume after any pause event (trust signal).

7. Recommendations

Recommendation	Owner	Status
Per-deposit reward accounting	Engineering	Done, verified
Round fees up, minimum trade size	Engineering	Done, verified
Gas-indexed liquidation bonus	Engineering	Planned
Disclose pause powers in user docs	Product	Open