

AI Cost Analysis (Required)

Development & Testing Costs

What was spent during development

CollabBoard uses:

- * 'OPENAI_RESERVE_USD_PER_CALL=0.003' (reserved before each OpenAI call)
- * OpenAI pricing variables from runtime config:
 - 'OPENAI_INPUT_COST_PER_1M_USD=0.1'
 - 'OPENAI_OUTPUT_COST_PER_1M_USD=0.4'
- * Hard app budget guardrail:
 - 'OPENAI_HARD_SPEND_LIMIT_USD=10'

As of this submission, the repo does not persist a local ledger of exact paid API calls, token counts, and dollar totals across all external test runs.

For this reason, the development/test cost section is reported as:

- * **Exact API calls:** not centrally logged in this codebase yet
- * **Exact input/output token totals:** not centrally logged in this codebase yet
- * **Exact development spend:** not centrally logged in this codebase yet
- * **Runtime-enforced limit impact:** each call is still capped by reserve policy and hard budget guardrail

How to validate exact spend externally

- * Pull billing values from OpenAI usage endpoints (preferred).
- * Use request logs in Langfuse/OpenAI traces to estimate command-level token counts.
- * Export API usage summary for the project period used for grading/demo.

Production Cost Projections

Assumptions used for projection:

- * Model: 'gpt-4.1-nano' (OpenAI pricing currently represented by env defaults above).
- * Average tokens per command:
 - Input: '200'
 - Output: '300'
 - Total: '500' tokens/command
- * Average command rate:
 - Users/Month × Sessions/User/Month × Commands/Session
- User assumptions:
 - **100 users:** 4 sessions/user/month, 3 AI commands/session
 - **1,000 users:** 8 sessions/user/month, 3 AI commands/session
 - **10,000 users:** 12 sessions/user/month, 3 AI commands/session
 - **100,000 users:** 20 sessions/user/month, 3 AI commands/session

Cost per command:

$$'(200 / 1,000,000 \times \$0.1) + (300 / 1,000,000 \times \$0.4) = \$0.00014'$$

Projected monthly AI API cost:

Users Estimated Sessions/User Commands (est.) Estimated Monthly Cost

100	4	1,200	'\$0.17'
1,000	8	24,000	'\$3.36'
10,000	12	360,000	'\$50.40'
100,000	20	6,000,000	'\$840.00'

Projection notes

- * Actual spend varies with command complexity. Long prompts and large board reads increase