FIN-AI: MULTI MODEL FINANCIAL ANALYSIS SYSTEM

By: Carissa Paul, Anesh Thangaraj, Rachel Aska, Isheanesu Chiworeso

**FIN AI**

GW | Business
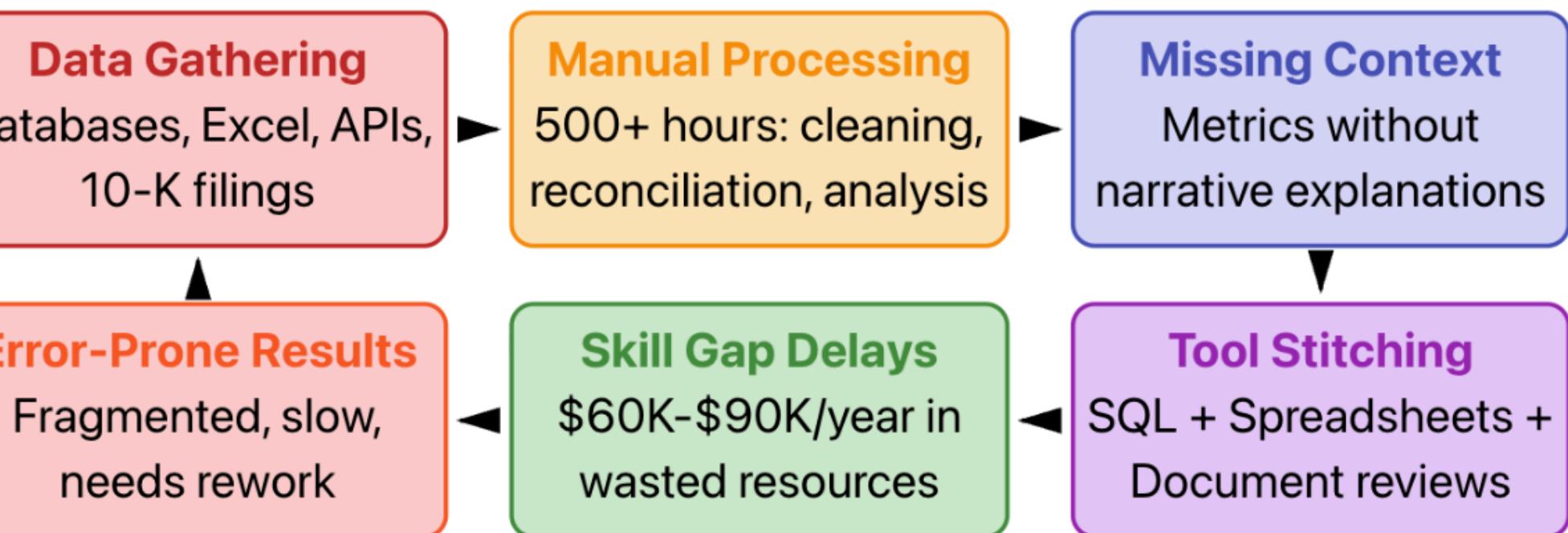
EXECUTIVE SUMMARY

Provide CFOs and finance teams with a single AI platform that unifies structured financials and unstructured 10-K insights for rapid, defensible analysis.

Combine PostgreSQL financial data, macro indicators, stock prices, and SEC filings with a hybrid Lang Graph + GPT system (SQL, RAG, Hybrid) for fully cited, multi-source answers.

Built an AI-powered financial intelligence agent that makes margin analysis, benchmarking, forecasting, and risk evaluation faster, more accurate, and accessible to non-technical users.

BUSINESS PROBLEM

Data Gathering Databases, Excel, APIs, 10-K filings	**Manual Processing** 500+ hours: cleaning, reconciliation, analysis	**Missing Context** Metrics without narrative explanations
Error-Prone Results Fragmented, slow, needs rework	**Skill Gap Delays** $60K-$90K/year in wasted resources	**Tool Stitching** SQL + Spreadsheets + Document reviews

CFOs Lack a Centralized, AI-Powered Financial Intelligence Platform

Data is scattered across systems and formats, making it difficult to explain performance drivers, benchmark peers, identify risks, and deliver fast, defensible insights at scale.

INTRODUCING FINAI

An **AI-powered financial intelligence** platform that unifies structured financial data and unstructured 10-K content into one system for fast, defensible CFO analysis.

Combines PostgreSQL financials, macro indicators, stock data, and SEC filings with a hybrid LangGraph + GPT engine (SQL, RAG, Hybrid) to deliver fully cited, multi-source insights.

Automates revenue, margin, cash flow, risk, and peer benchmarking analysis—clearly connecting performance metrics to narrative explanations from filings.

Provides CFO-grade answers through natural language, eliminating spreadsheet wrangling, manual SQL, and hours of document review.

A Unified AI System for Financial Understanding:
Transforms scattered financial workflows into one platform that interprets numbers, context, and risks with audit-ready accuracy in seconds.

DATA STRATEGY & SETUP

Client and Benchmarking Setup
- Apple used as demo client.
- Benchmarked against Microsoft, Amazon, Google, Meta.
- 2019-2024 financials aligned across all 5 companies.
- Added macro indicators (CPI, GDP, Fed Rates, Unemployment)

Unified Analysis Framework :
- All data mapped to a shared entity—period model.
- FIN-AI returns Apple metrics + peer benchmarks + macro trends + 10-K citations in a single natural language query.
- Hybrid SQL + RAG architecture ensures both numerical accuracy and narrative context.

Structured Data	Unstructured Data
Quarterly & annual financials (Income Statement, Balance Sheet, Cash Flow).	30 SEC 10-K filings processed (5 companies x 6 years).
50+ KPIs & 20+ ratios standardized across companies.	Extracted Item 1A (Risks), Item 7/7A (MD&A + Market Risk).
Stock prices + macro-economic	6,671 text chunks embedded
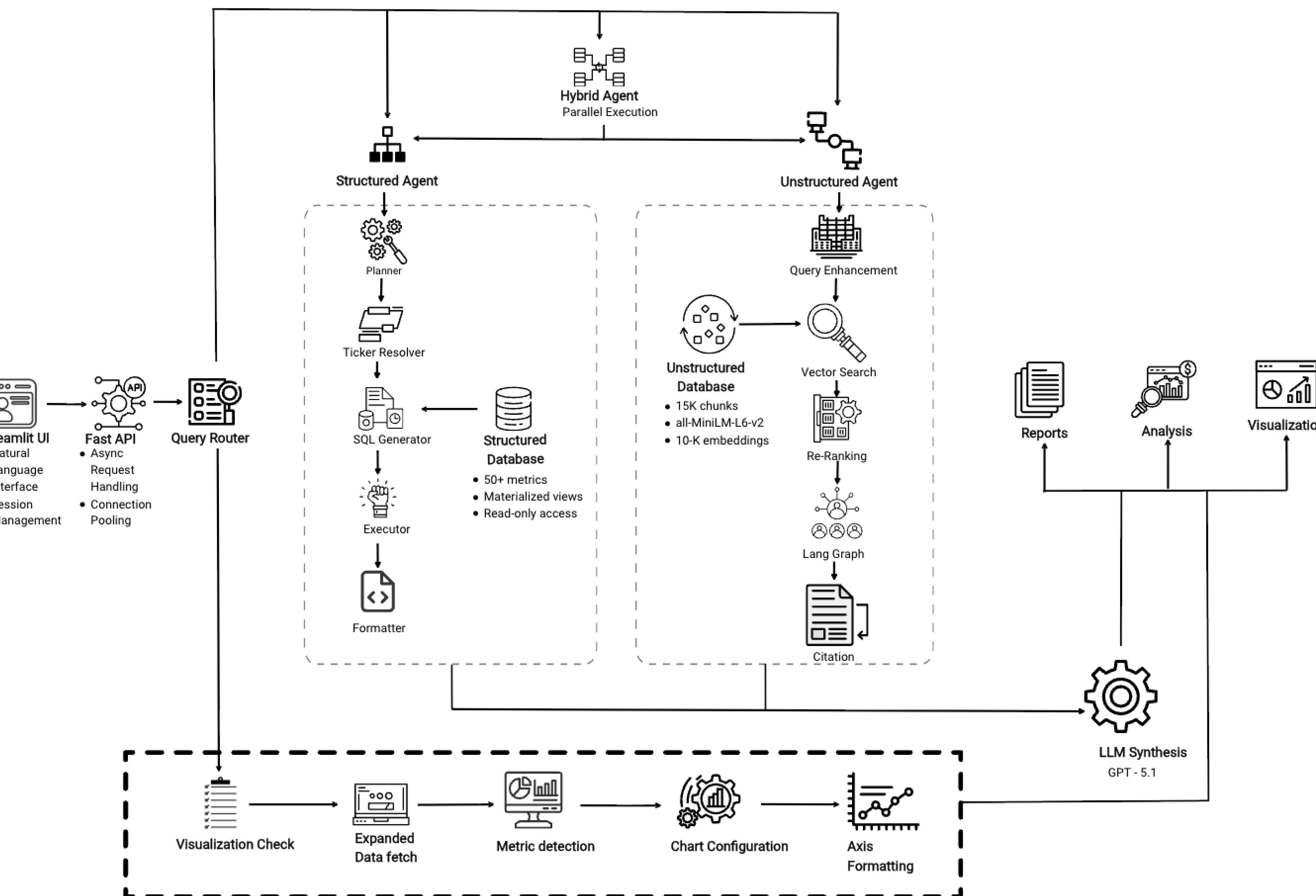
END TO END ARCHITECTURE

FEATURE HIGHLIGHTS

Multi-Mode Agents Structured, Unstructured, and Hybrid agents work together to deliver financial metrics	**Hybrid Data Sources + Real-Time APIs** Combines PostgreSQL financials, macro indicators, stock prices	**Instant Visualizations** Auto-generates trend charts, KPI comparisons, and peer benchmarks directly in UI

Template-First SQL Engine (Self-Learning)
Structured agent uses 29+ SQL templates for low-latency responses; unknown queries trigger LLM-driven template creation with confidence scoring—new templates are stored automatically, making FIN-AI smarter with use.

Semantic Search + Re-Ranking for Accuracy
Unstructured agent combines vector search with custom re-ranking to identify the correct company/year/section before reading content—ensuring precise extraction of Item 1A and Item 7/7A insights.

Unified Hybrid Reasoning
Hybrid agent executes SQL and RAG pipelines in parallel, merges metrics with narrative context, and generates CFO-grade explanations grounded in both numbers and 10-K citations.

RISK MANAGMENT FRAMEWORK

- Hallucinations: All answers grounded in SQL data + 10-K citations.
- SQL Safety: Template-first; LLM SQL stored only if confidence >80%.
- Data Privacy: Uses only public financial + macro data; no PII.
- Scalability: Materialized views + pgvector indexing keep latency low.
- Bias: 10-K narrative bias exposed via explicit citations.

BUSINESS MODEL

Tiered Pricing Model based on usage and team size:

Starter	$99/month	100 queries/month	Single user , Basic analytics
Professional	$299/month	1000 queries/month	Multi-user access, Hybrid agent, Visualizations
Enterprise	$999/month	Unlimited queries	Custom integrations, SSO, Audit logs, Admin Dashboards.

BUSINESS IMPACT
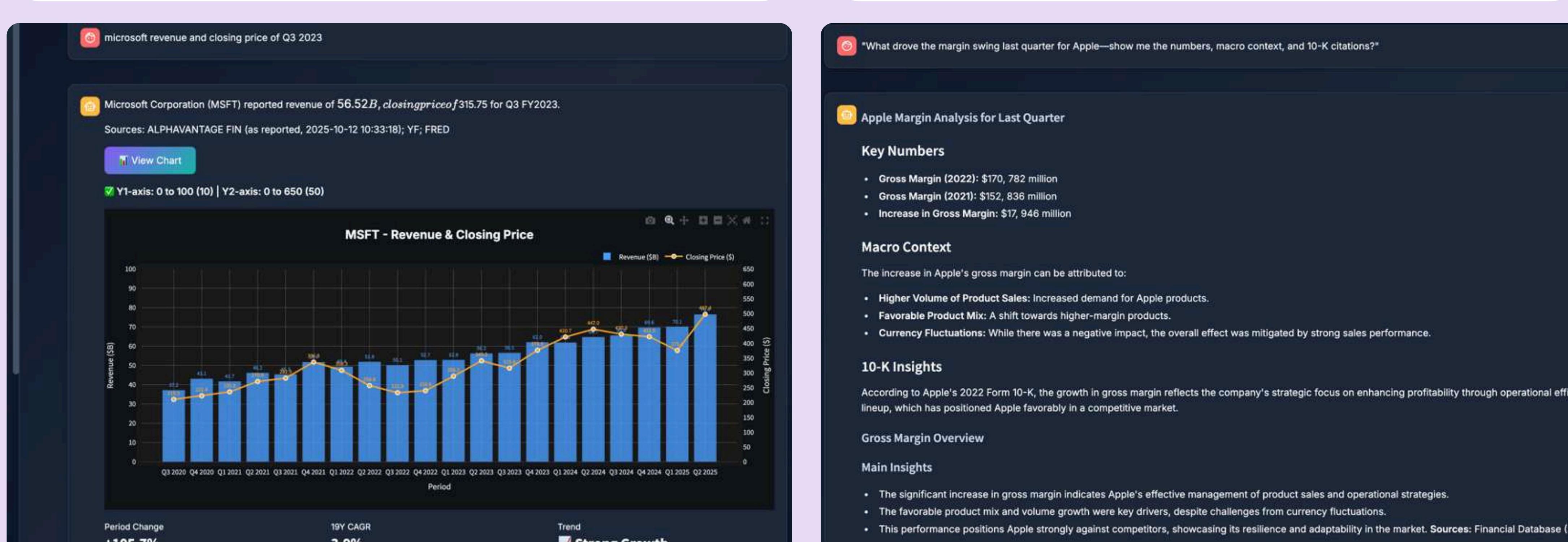
99% faster analysis: hours of financial + 10-K review reduced to 1-10 seconds.

500+ hours saved per reporting cycle by eliminating manual data chores.

$60K-$90K annual cost reduction from automating repetitive FP&A tasks.

Higher decision quality: metrics + peer benchmarks + 10-K explanations in one answer.

Improved productivity: frees 2-3 analysts to focus on strategy instead of data prep.

STRATEGIC GROWTH PLAN

Real-Time Intelligence: Live financials, stock data, and macro signals for instant decision-making.

Knowledge Graph Reasoning: Linked view of companies, risks, segments, and market factors for deeper insights.

Actionable AI Agents: Automated alerts, KPI tracking, variance explanations, and quick report generation.

Value Proposition:
Low-cost alternative to enterprise BI + research tools (Bloomberg/FactSet), delivering CFO-grade insights at a fraction of the price.

RESULTS

Pipeline	*Latency*	*Success*
Struct-ured	1-2s	99%
Unstru-ctured	3-5s	97%
Hybrid	6-10s	98%

REFERENCES

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https://www.mckinsey.com/capabilities/strategy-and corporate-finance/our insights/how-finance-teams-are-putting-ai to-work-today