



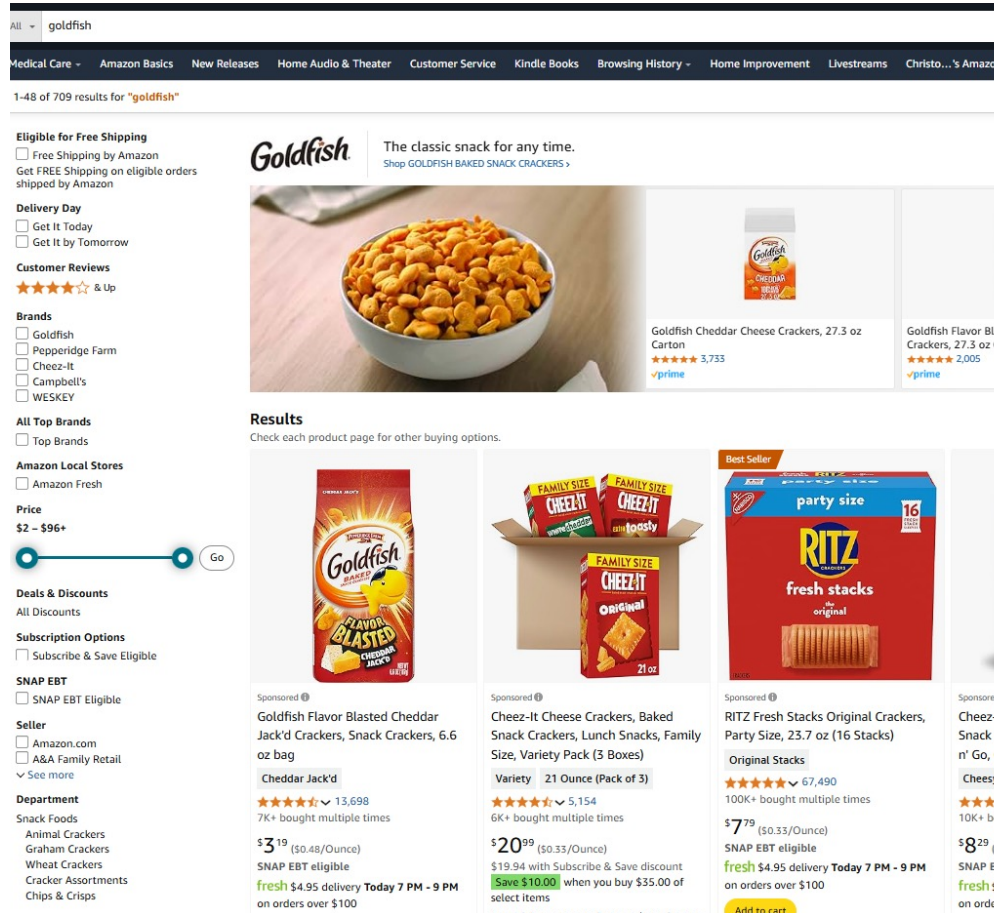
Campbell's Retail-Media AI Assistant

Equip Campbell's to
Answer Any Media-Spend
Question in Seconds

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Rapid E-Commerce Growth Outpaces Current Analytics Capacity



Background

- Campbell's is a \$10B CPG leader (soups, beverages, snacks)
- Core Marketing Analytics team (5–10 analysts) manages \$50M+ /yr in Amazon Retail Media spend
- Snacks segment drives a large share of e-commerce growth; so optimizing search, display, sponsored-brand budgets is high-stakes to maintain relevancy

Manual SQL Workflows Delay Critical Budget Decisions by 12+ Hours



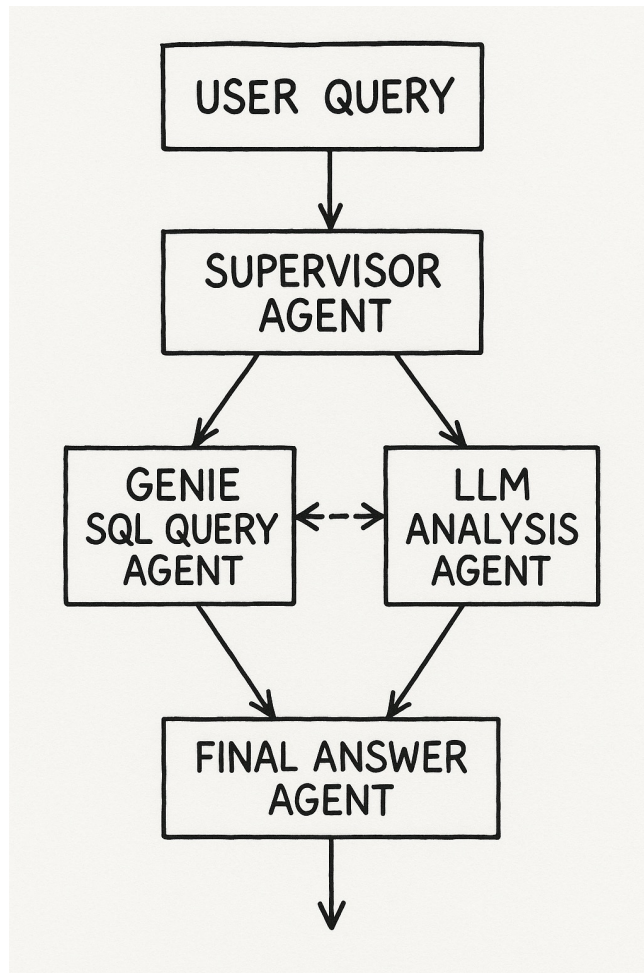
Problem

Current Workflow: dozens of daily stakeholder questions → manual Spark-SQL in Databricks → data cleanup and wrangling → slide decks/email summaries.

Pain Points

- **High Cost of Delay:** Every query loop can take 12+ hours—consuming ~70 % of analyst capacity during peak seasons (back-to-school, Halloween)—leading to missed opportunities in fast-moving campaign cycles.
- **Scalability Strain:** Handling 150–200 queries/month (~2,000/yr) with no headcount growth forces analysts into rote querying instead of strategic insight.

Our Multi-Agent AI Automates Plain-English Queries into Ready-to-Act Insights



Solution

A Databricks-native, multi-agent Generative-AI Assistant with:

- **Intent Detection (Supervisor Agent):** Routes questions to SQL vs. reasoning
- **SQL Generation (Genie Agent):** Autogenerates robust Spark-SQL and query data from database
- **Result Interpretation (LLM Agent):** Translates structured data into business insights
- **Summarization & Formatting (Final Answer Agent):** Produces plain-English answers, with data summarization, insights generation and strategy recommendations

Demo Flow: Prompt to SQL and Results

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You

How to allocate 50k budget in Halloween this year if we focus on ROAS for goldfish? search term level

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	Query	avg_ROAS	total_Spend
0	goldfish	18.5642	3822.39
1	goldfish individual bags	18.14	18.52
2	rainbow goldfish	17.475	40.28
3	goldfish crackers individual bags	15.3429	1095.82
4	goldfish snack pack	15.0867	47.41
5	gold fish	14.652	814.98
6	flavor blasted goldfish snack packs	14.18	10.1
7	halloween goldfish	13.69	14.45
8	goldfish crackers	13.055	2018.39
9	goldfish crackers carton	13.02	33.01
10	flavor blasted goldfish	12.0867	80.52

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Budget Allocation Recommendation for Halloween 2023

Based on the ROAS data for goldfish-related search terms, I recommend the following budget allocation strategy for your \$50,000 Halloween campaign:

Top Priority Terms (70% of budget = \$35,000)

Allocate the majority of your budget to these high-ROAS direct goldfish terms:

- "goldfish" (~\$10,000)
- "goldfish crackers individual bags" (~\$8,000)
- "gold fish" (~\$5,000)
- "goldfish crackers" (~\$7,000)
- "halloween goldfish" (~\$3,000)
- "flavor blasted goldfish" (~\$2,000)

Medium Priority Terms (20% of budget = \$10,000)

Allocate to these moderately performing terms:

- "goldfish snack packs" (~\$3,000)
- "goldfish crackers bulk" (~\$2,000)
- "goldfish bulk" (~\$2,000)
- "gold fish crackers" (~\$1,500)
- "gold fish snacks individually wrapped" (~\$1,500)

Testing Budget (10% of budget = \$5,000)

Reserve a small portion for testing seasonal and emerging terms:

- "halloween snacks individually wrapped" (~\$1,500)
- "halloween goldfish snack packs" (~\$1,000)
- "goldfish pretzels" (~\$1,000)
- "pepperidge farm goldfish" (~\$1,000)
- "goldfish cheddar crackers" (~\$500)

This allocation prioritizes terms with ROAS >10 while maintaining visibility on seasonal Halloween-specific terms that could drive incremental sales during the holiday period.

Our AI Assistant Can **Save 5,800 Analyst Hours** and **Drive \$375 K+ Annual Benefit**

Impact

- **Speed:** Query turnaround from **~3 hr** → **~20 sec** (98 % reduction)
- **Efficiency:** ~2.9 hr saved per question × 2,000 queries/yr = **~5,800 analyst hrs** ≈ 2.5 Full-Time Equivalents (FTEs)
- **Cost Savings:** 2.5 FTEs × \$120 K loaded = **\$300 K/yr**
- **Revenue Upside:** 1–2 % lift in ROAS on \$5M advertising budget → **\$50K–\$100K lift in annual revenue**
- **Scalability:** No new infrastructure; fully within Campbell's Databricks ecosystem



Balancing Accuracy, Cost, and Security in Our AI Deployment



Trade-offs

- **Model Choice:** Use Claude 3.7 Sonnet for enterprise-grade accuracy, highly structured outputs, and strong reliability
- **Hallucination Mitigation:** Restricting LLM agents take SQL- only outputs ensure answers are grounded in the database
- **Future Complexity:** Adding visualization or regression nodes increases capability but may impact response time and maintenance

Thank you!

<https://drive.google.com/file/d/1c9IEPLTzgOec1yPsn9C4d5MnKogjVYPD/view?usp=sharing>

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