Business Co-pilot

A Multi-Agent System for Business Intelligence
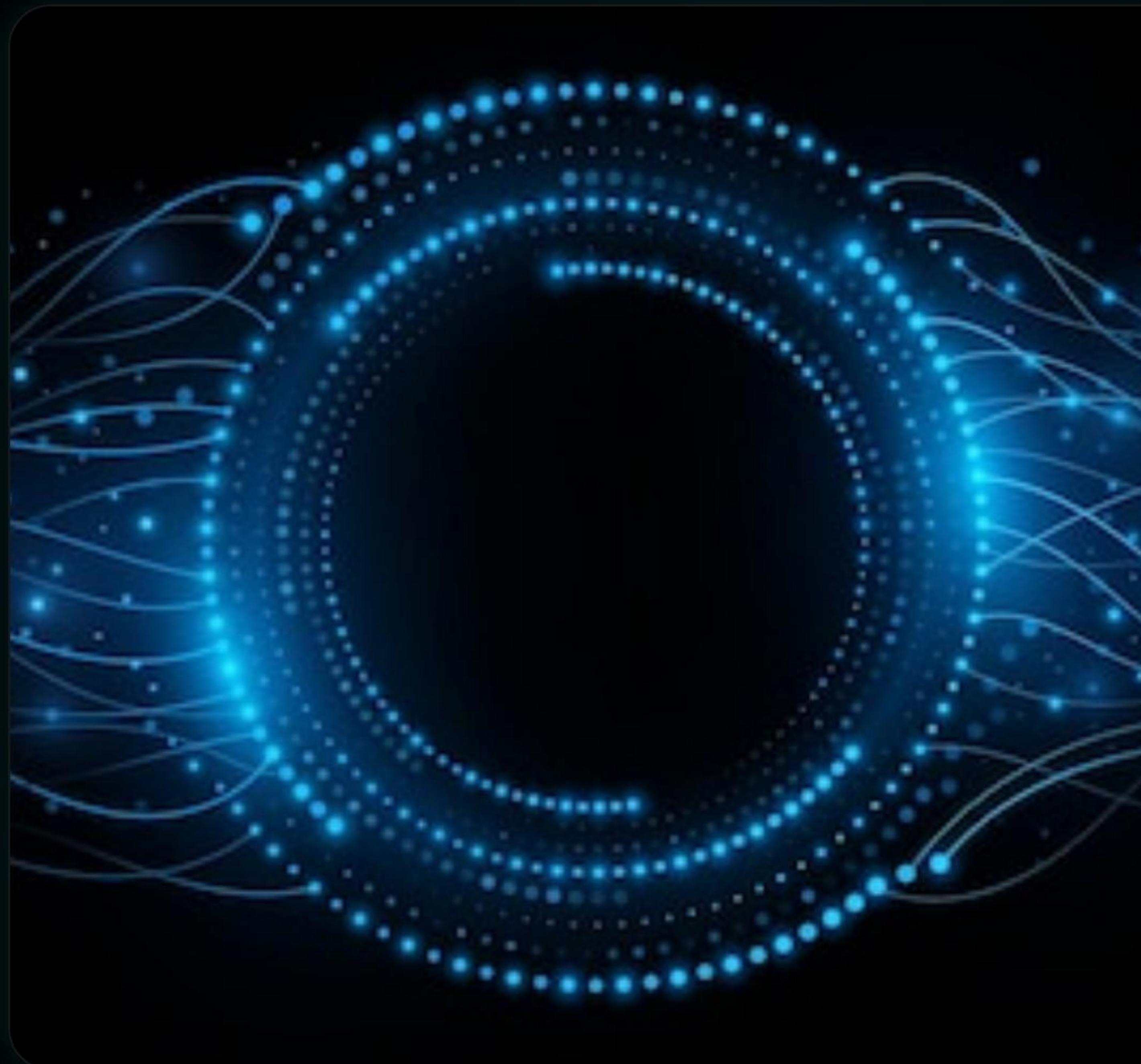
ACE GROUP | NOVEMBER 2025

The Entrepreneurial Challenge

- **High Uncertainty:** Starting a business involves uncalculated risks.

- **Time Constraints:** Manual market research is slow and expensive.

- **Data Fragmentation:** Difficulty finding local data (ATECO) and current web trends.

- **Goal:** Shift from a purely *descriptive* system to an *analytical and prescriptive* one.

The Solution: Business Co-pilot

Interactive Web App

Built on Streamlit for real-time analysis.

### Local LLMs
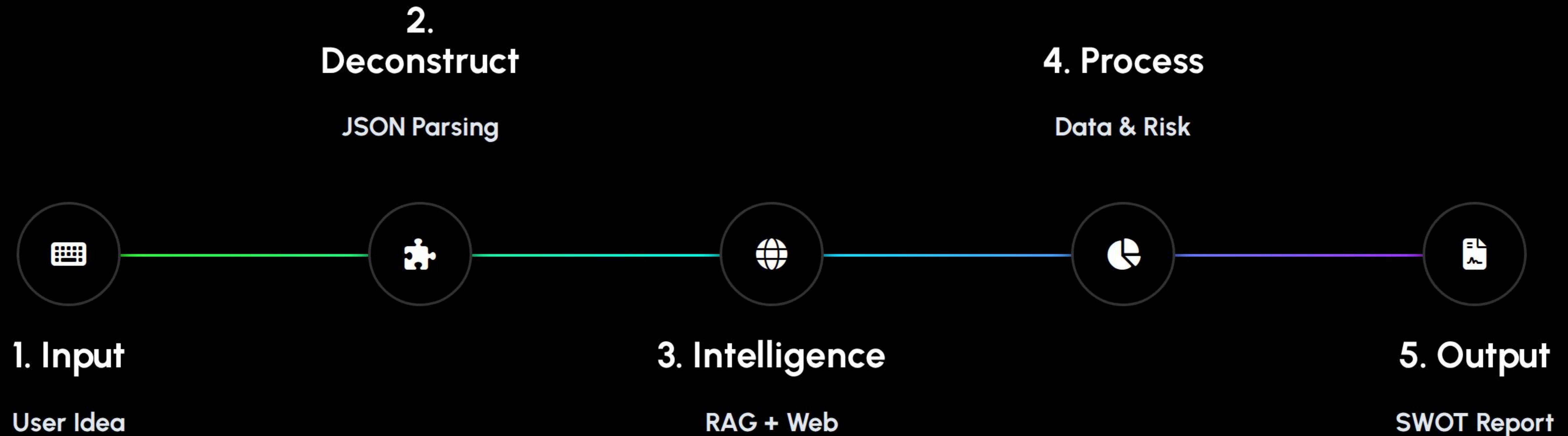
Ollama (Gemma & Llama) for privacy and control.

Risk Analysis

RAG on company data and symbolic risk matrix.

Multi-Agent Pipeline

2.
Deconstruct

JSON Parsing

4. Process

Data & Risk

1. Input

User Idea

3. Intelligence

RAG + Web

5. Output

SWOT Report

Agent 1: Deconstructor

Role: Intent Understanding

This agent is the pipeline entry point. Its task is to transform ambiguous natural language into structured data.
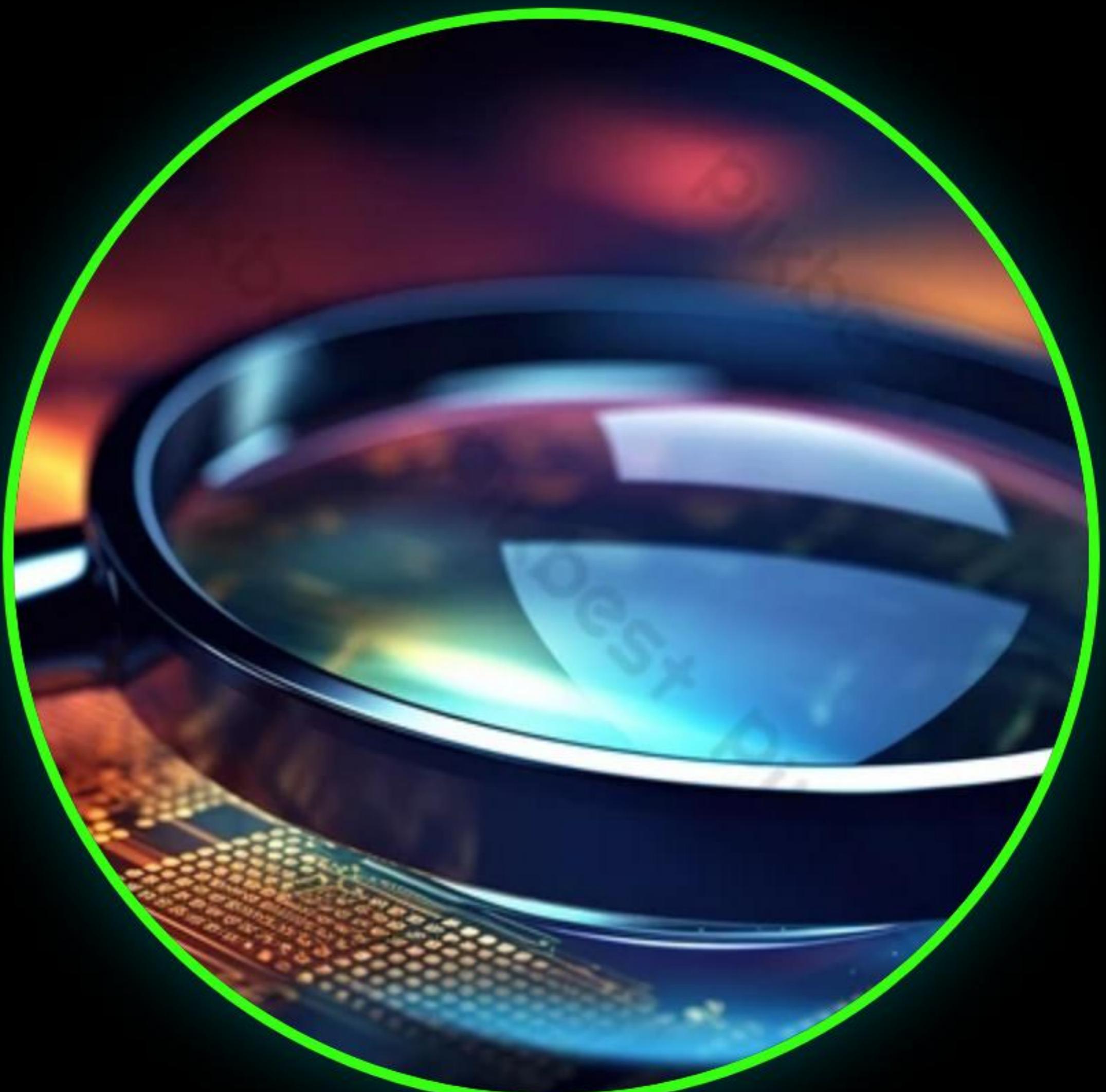
- **Input:** "I would like to open a pizzeria in Rome..."

- **Processing:** Syntactic and semantic analysis via LLM.

- **Output:** JSON { "sector": "catering", "target": "Rome" }

Agent 2: Intelligence
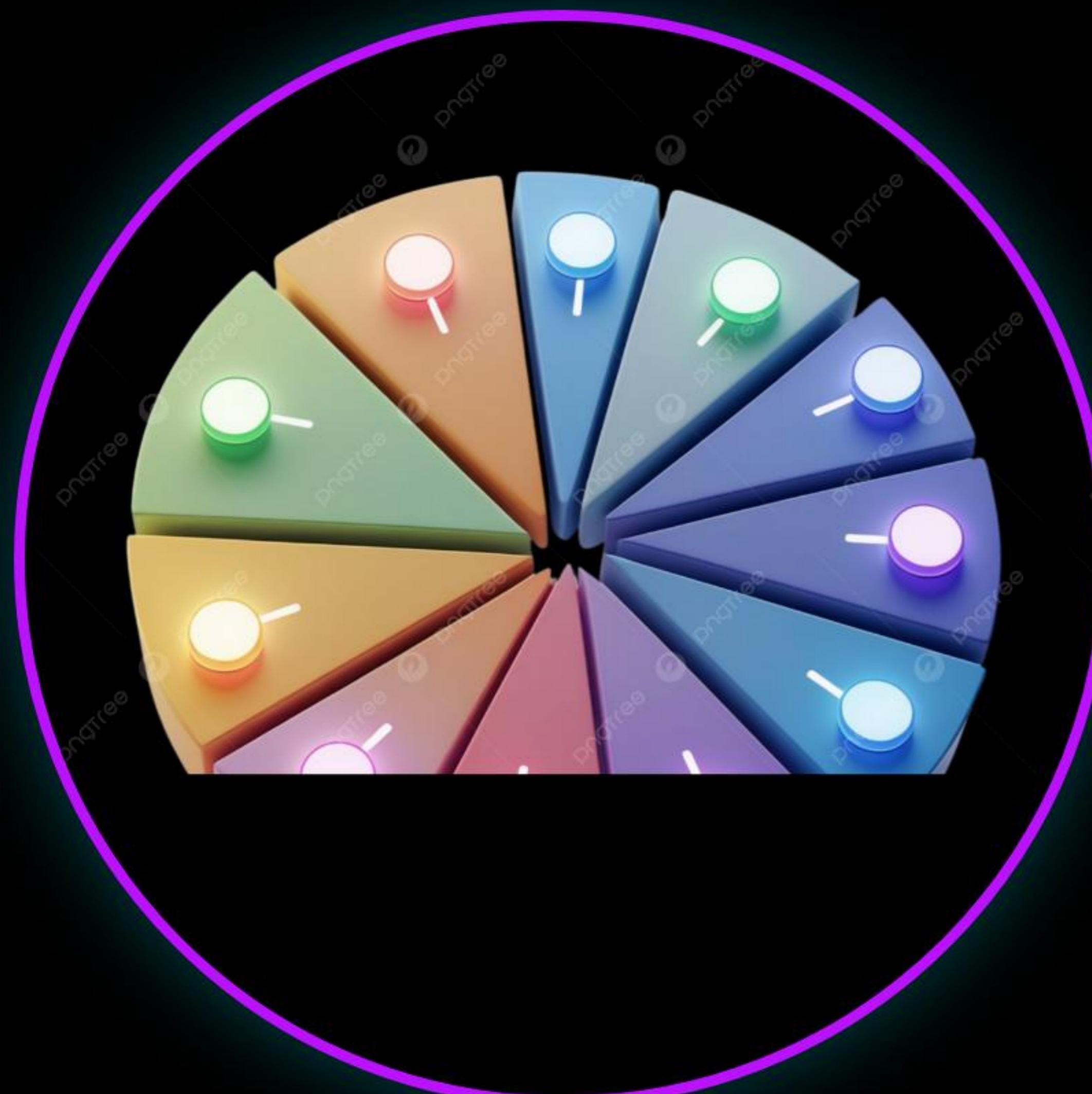
Role: The Researcher

Combines internal and external sources to build a complete information picture.

- **RAG (Retrieval-Augmented Generation):** Queries ChromaDB for real Italian business data, managing ATECO code translation.

- **Web Search:** Uses DuckDuckGo to capture current market trends.

- **Output:** Narrative Market Brief.

Agent 3: Data Extractor

Role: Data Visualization

Solves the LLM challenge of generating complex data structures for charts.

- **Targeted Extraction:** Prepares specific data for Nivo Charts.

- **Pie Chart:** Local sector distribution.

- **Bar Chart:** National competitive comparison between regions.

- **Robustness:** Uses Regex validators to prevent format errors.

Agent 4: Risk Scoring

Role: Risk Analyst

Introduces a symbolic analytical component to assess feasibility.

- **Sentiment Analysis:** Evaluates web mood on the idea (-1, 0, 1).

- **KRI Calculation:** Key Risk Indicators based on local market saturation.

- **Probability/Impact Matrix:** Defines the final level (Low, Medium, High, Critical).

Agent 5: Analyst

Role: Final Strategist

Synthesizes the entire process into an actionable document.

- **Aggregation:** Merges Context, Brief, Charts, and Risk Score.

- **Report Generation:** Writes a final report in natural language.

- **SWOT Analysis:** Identifies Strengths, Weaknesses, Opportunities, and Threats specific to the user's idea.

Results and Future

Objective

Empowers decision-making with data-driven clarity.

Reliability

Reduced hallucinations thanks to regex validators and structured pipeline.

Scalability

Modular architecture ready for new agents and data sources.

Thank you for your attention.

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Image Sources

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