

The background of the slide features a dense, abstract pattern of colorful, three-dimensional puzzle pieces in shades of pink, blue, yellow, green, orange, red, and purple, arranged in a grid-like fashion.

LLM AGENTS IN B2C USE-CASES AND EVALUATION

BY PRAVEEN GOVINDARAJ

About me

-  **Staff Data Scientist at Leading Telcom**
- Over 13.5 years of experience in Data science & analytics domain.
-  **Expertise Areas:**
 - Customer Analytics, Anti-Money Laundering/Counter-Terrorism Financing (AML/CFT), Credit Risk Modelling, Data Warehousing & GenAI Platforms.
-  **Achievements:**
 - Reduced Customer Churn, Streamlined Processes, Enhanced Business performance.
-  **Proven Record:**

Delivering data-driven business improvements & GenAI platform.

Hobbies: Playing Piano  & Violin .

 **Contributions:** Open Source Projects in GenAI.

 **Interests:** Tech Blogging.

 **Leisure:** Reading Books.



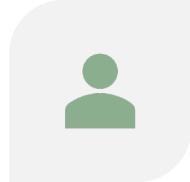
AGENDA



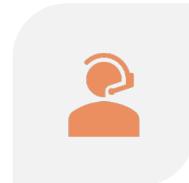
BASICS



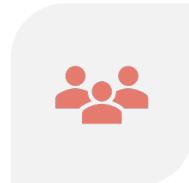
LLM RAG DATA
AGENTS



CUSTOMER
JOURNEY



LLM RAG AGENTS
IN CUSTOMER
JOURNEY



HOW AGENTS
HELPS NETWORK
MANAGEMENT



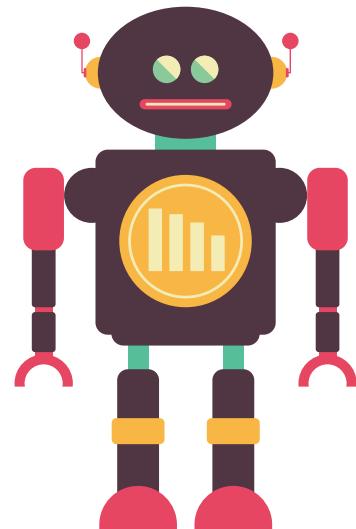
EVALUATION OF
AGENTS

AGENDA

A

BASICS

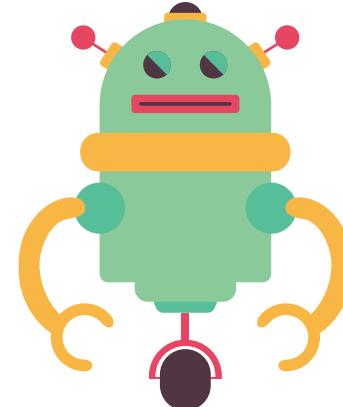
What is LLM , RAG and Agent



B

LLM RAG DATA AGENT

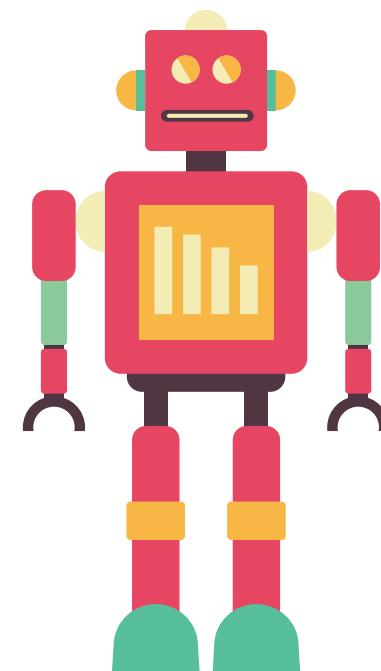
What do LLM, RAG and Agent mean ?



C

B2C Use case

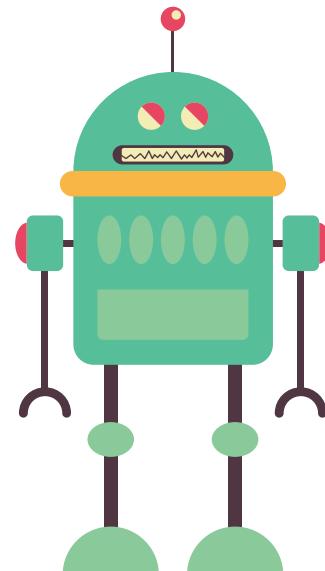
Discussion of two use cases with a demo



D

Agent Evaluation

Make sure that agent suits your needs.



What is an LLM ?

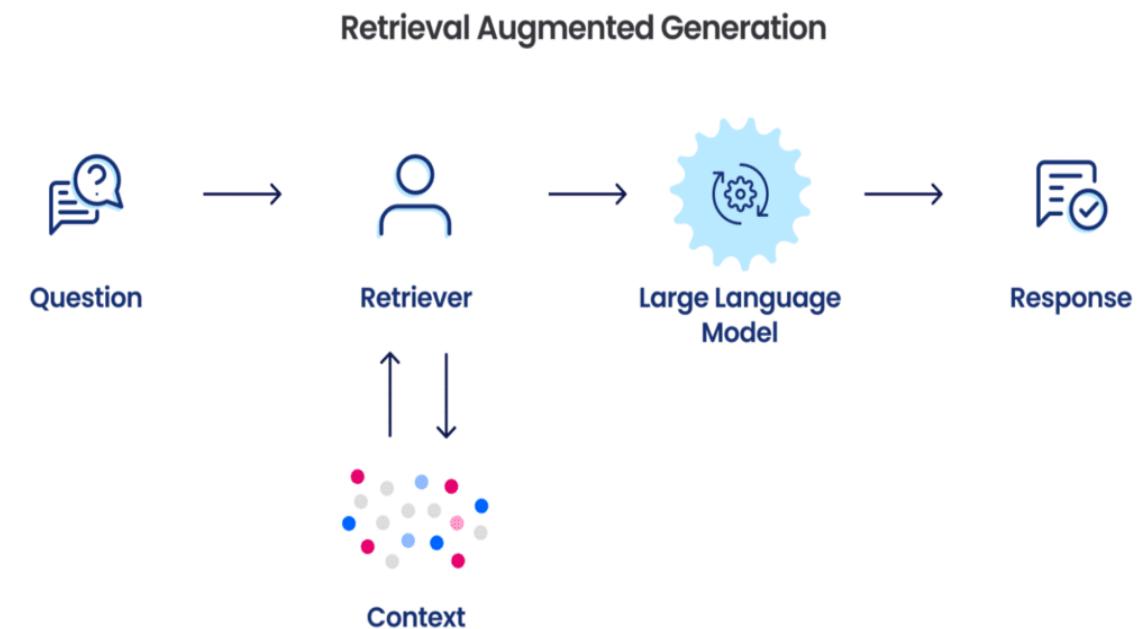
An LLM, or Large Language Model, is like a super-smart writing assistant. It learns from a massive amount of text to understand and mimic human language. This lets it answer questions, write stories, and more, just by analysing the words you give it.



What is RAG ?

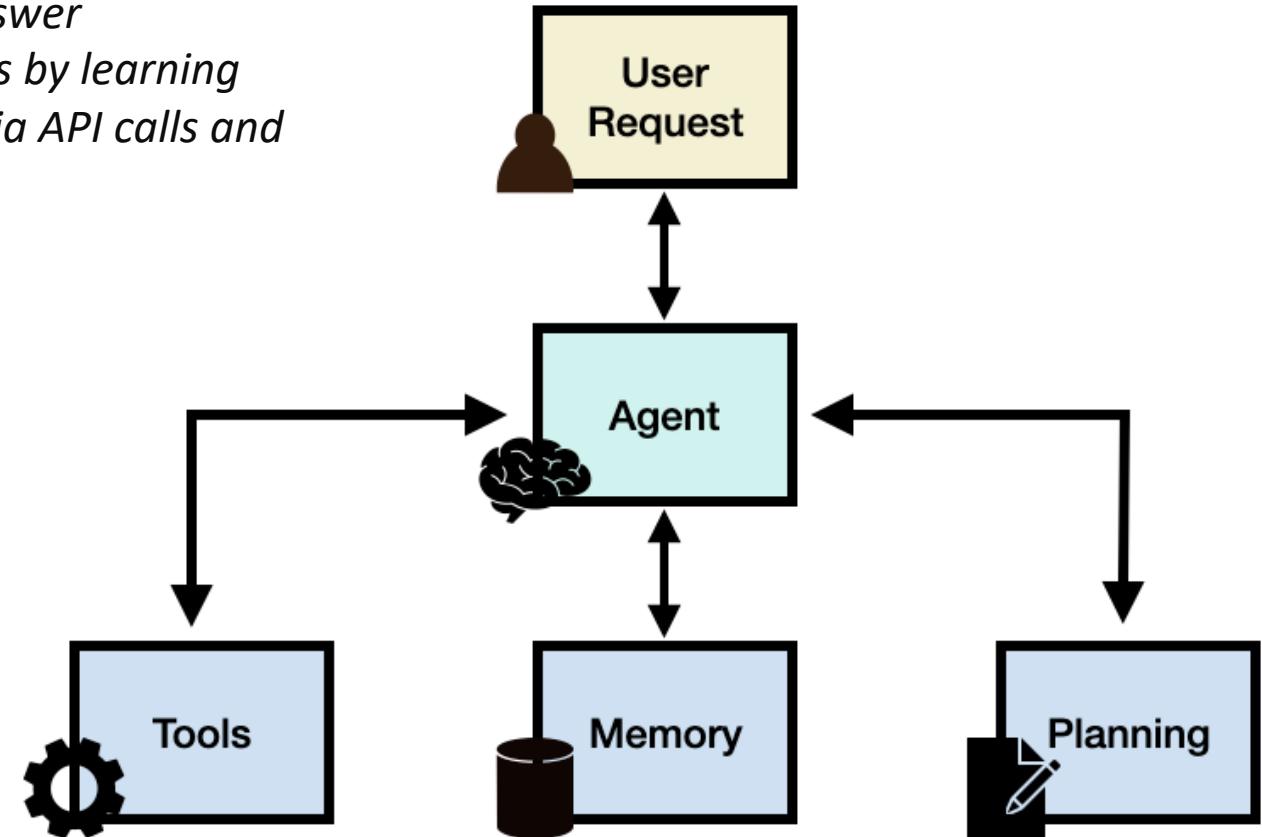
RAG, or Retrieval-Augmented Generation, is like a smart assistant that first finds relevant info from a big database, then uses it to craft detailed answers.

It combines quick research with creative writing, providing informed and engaging responses.



What is LLM an Agent ?

Very smart digital assistants that can write text, answer questions, and even create stories or solve problems by learning from vast amounts of information on the internet via API calls and work well with other software tools



CHALLENGES OF SILOED IMPLEMENTATION

Road to robust LLM Agentic systems

1

Unenhanced LLM Workflows

- Lack of fact fullness led to hallucination.
- Bias

SOLUTION 01

LLM with relevant context information helps to mitigate the hallucination.

2

RAG workflows

- Good at sharing the relevant answer to question.
- Lacks recent information and connectivity.
information.

SOLUTION 02

Equipped with tools and connectivity to internet and intranet to get the relevant information via API.

3

LLM Agent

- Complex system integration
- Quite hard to validate accuracy due to complex integration

SOLUTION 03

Ensure individual components are validated and tested as whole system.

Confluence of LLM , RAG and Agent

Collaborative Intelligence LLM,RAG and Agent Integration

LLM

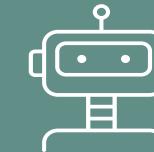
Large Language Models excel at generating relevant responses to prompts, possessing the capability to reason and reflect.



**LLM
RAG
AGENT**

RAG

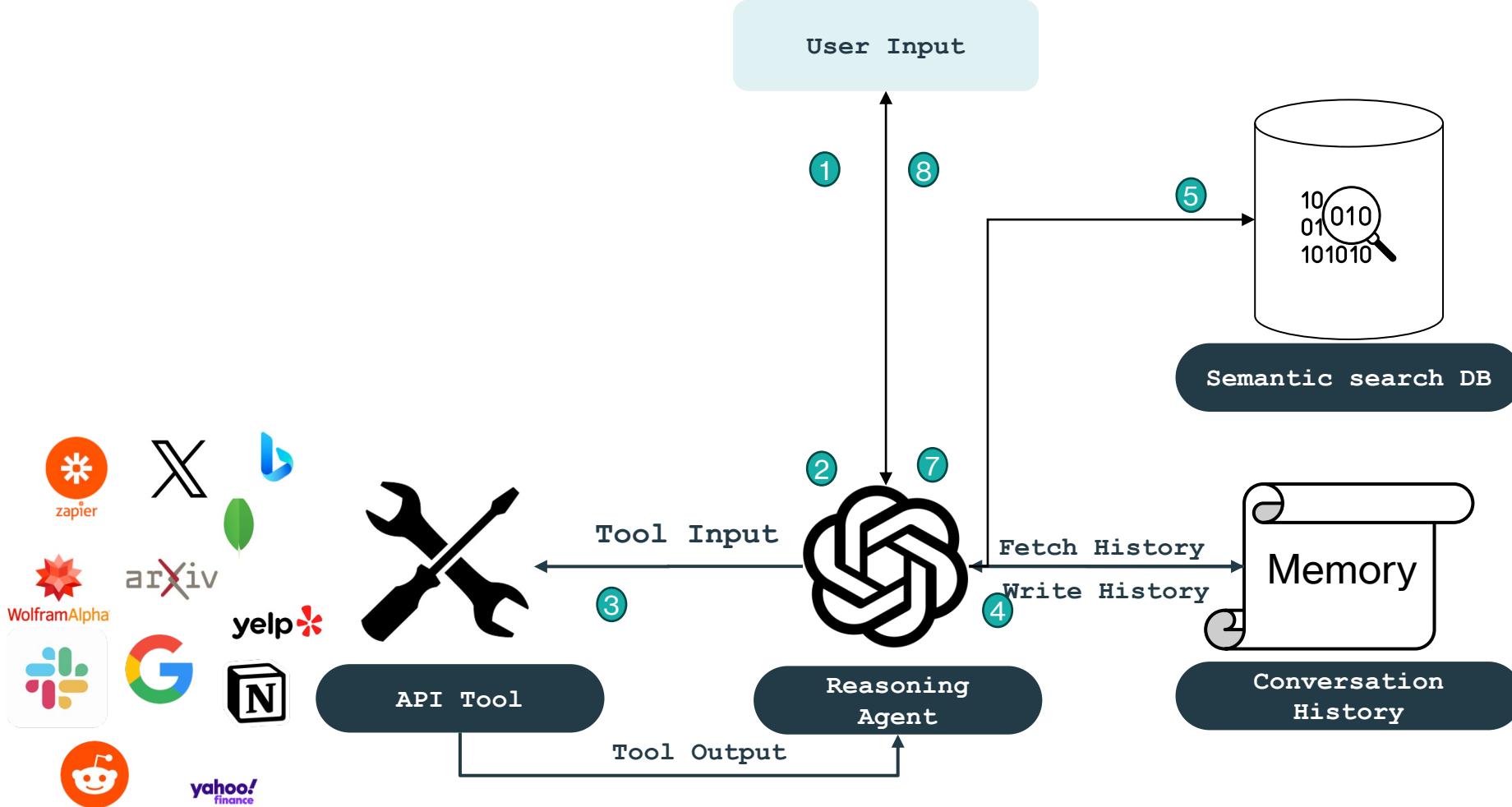
Enhance the performance of LLM by providing richer, more pertinent contextual information, thereby reducing the occurrence of inaccurate or fabricated responses.



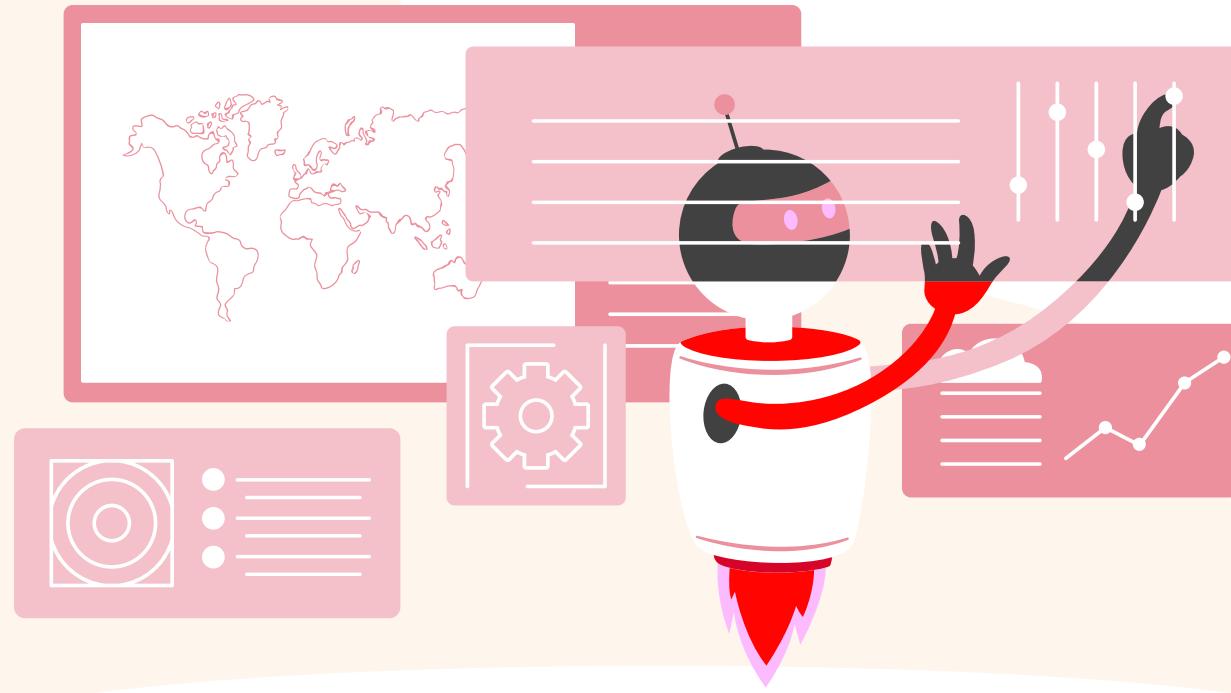
AGENT

It possesses tools, memory, and the ability to plan, enabling it to coordinate, plan, and execute tasks effectively.

Typical LLM Data Agent

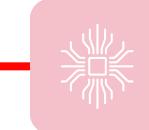


B2C use case in Telco industry



Telco Customer Support

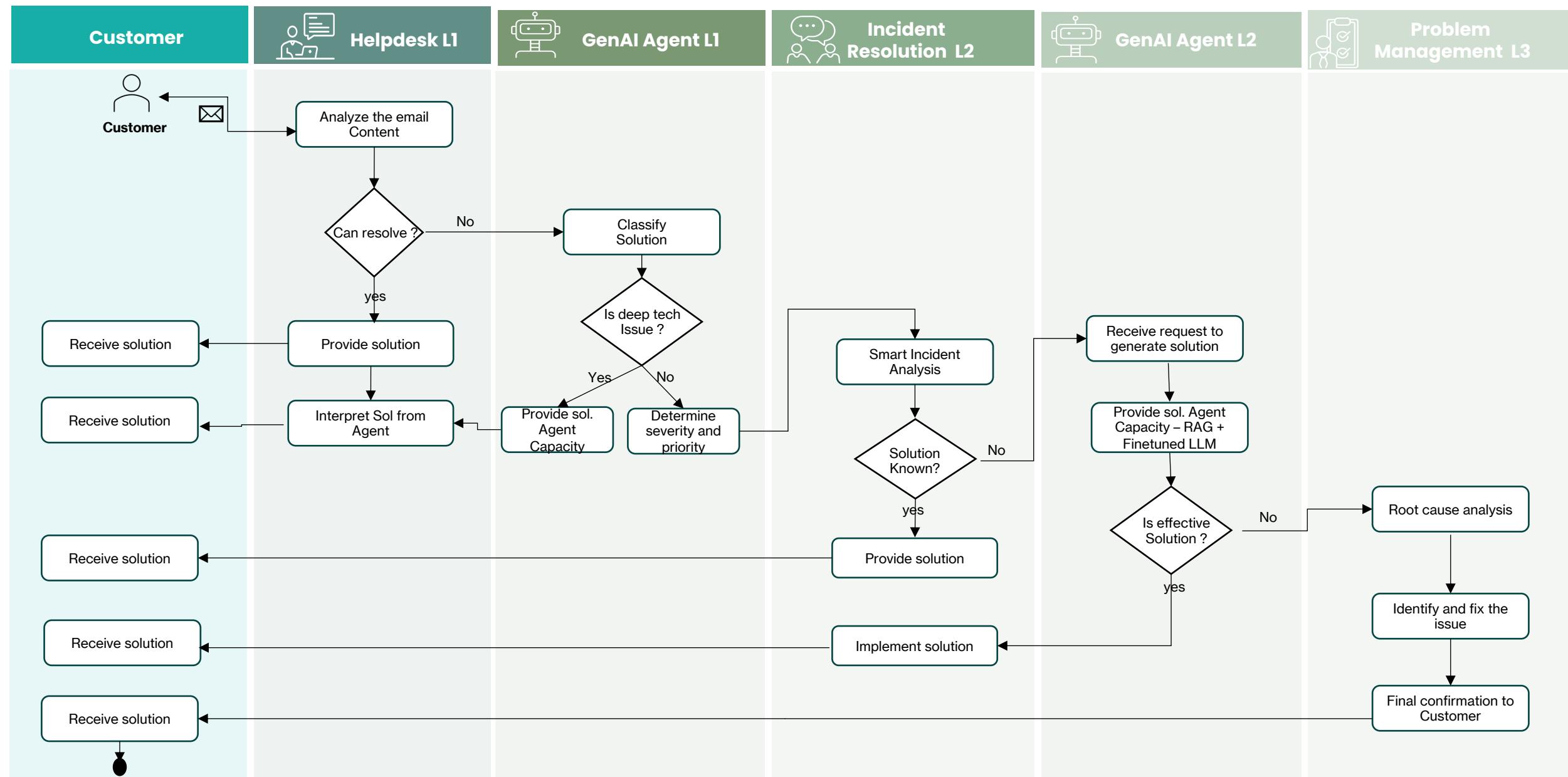
How GenAI Agents helps the Customer support at L1 , L2 and L3.



Telco Network Management

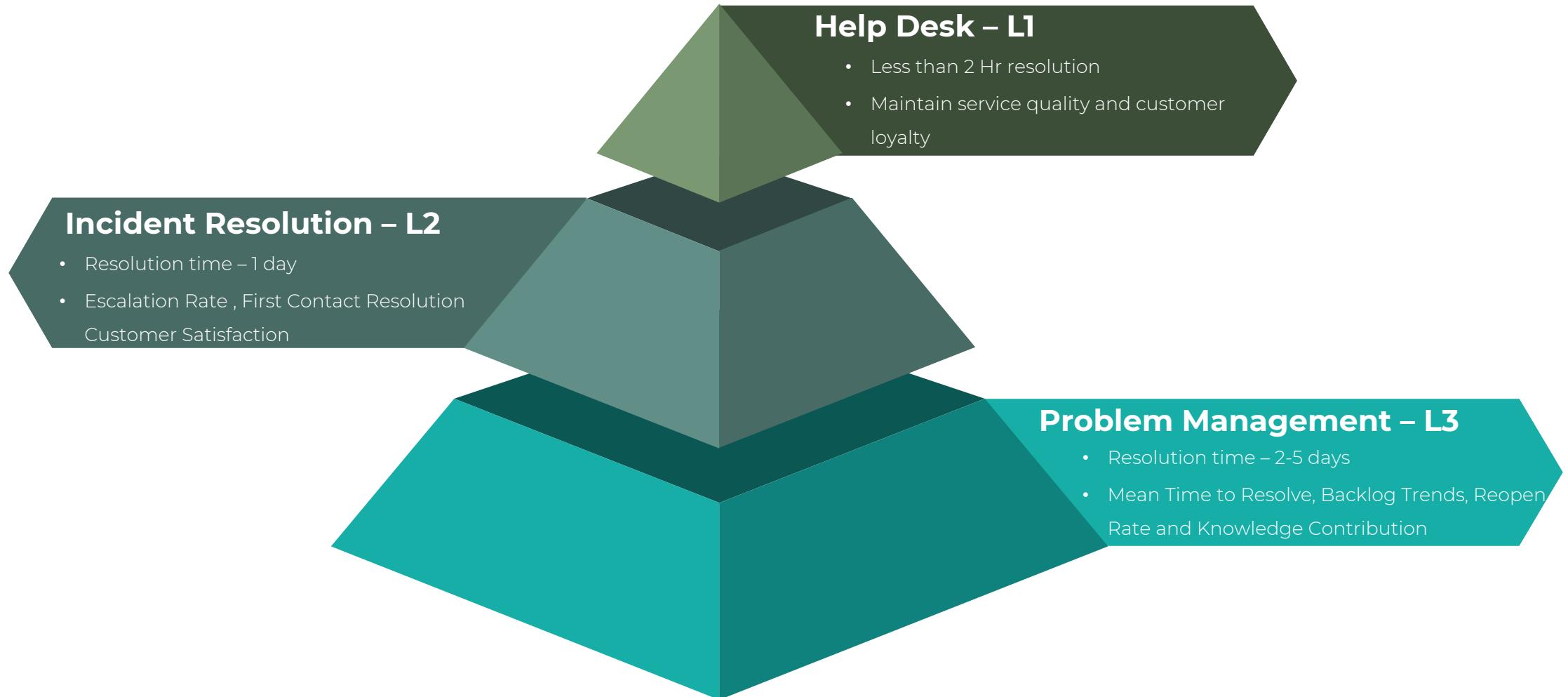
How LLM agents helps in managing the networks by predicting the potential issues , enhance performance and operational strategies.

LLM Data Agent in Customer Support



Telco's Customer Support KPI

Support levels and their metrics



Demo



Business Value



How it Agent helps in L1 Support

Enhanced Efficiency and Reduced Resolution Time

Consistency in Customer Service

Rapid Onboarding and Support for New Personnel

Data-Driven Insights for Continuous Improvement



How Agent helps in L2 Support

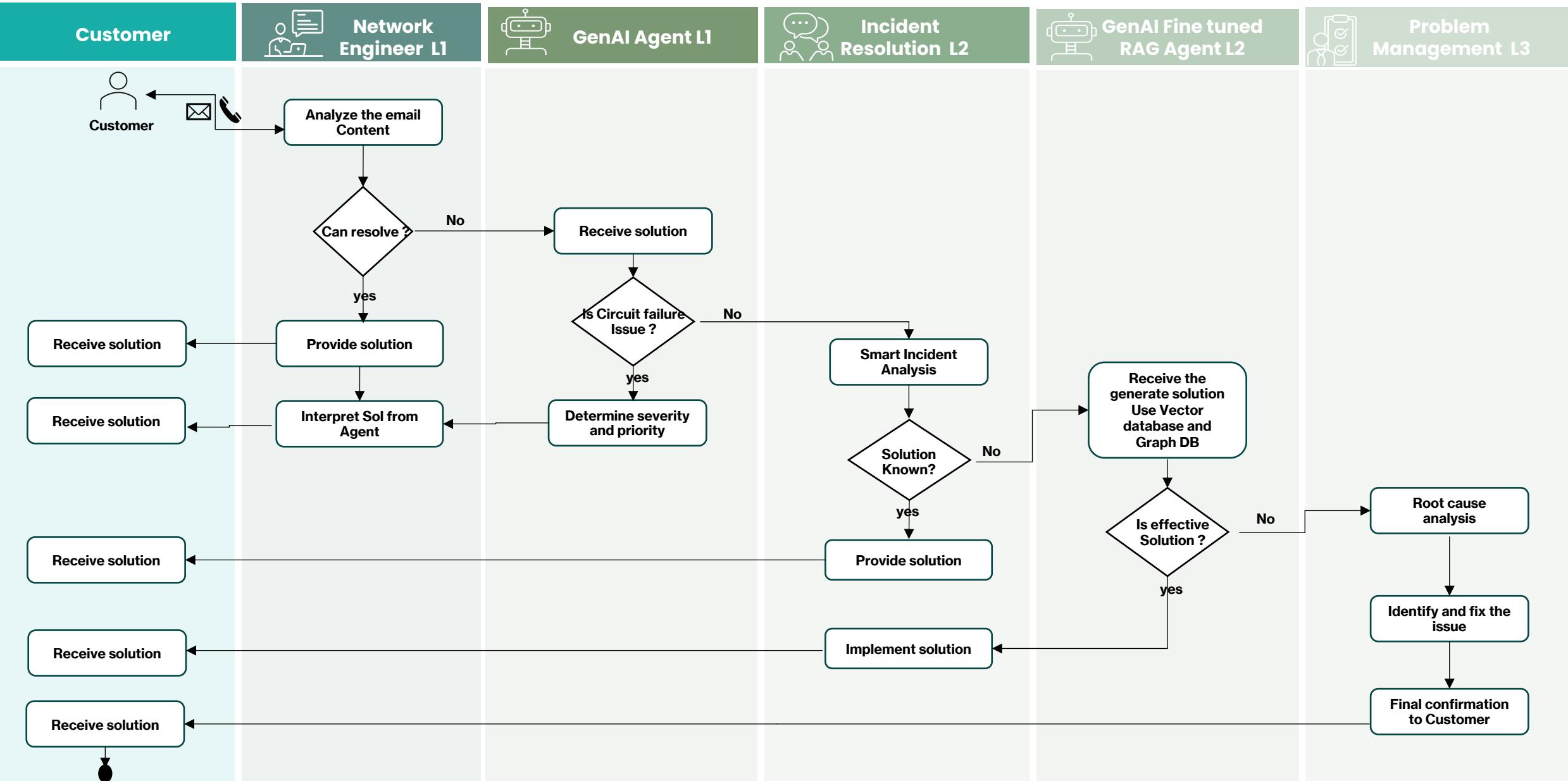
Advanced Problem-Solving Capabilities

Customized Learning and Knowledge Sharing

Enhanced Incident Prioritization and Management

Streamlined Communication and Escalation Processes

LLM Data Agent in Network Management

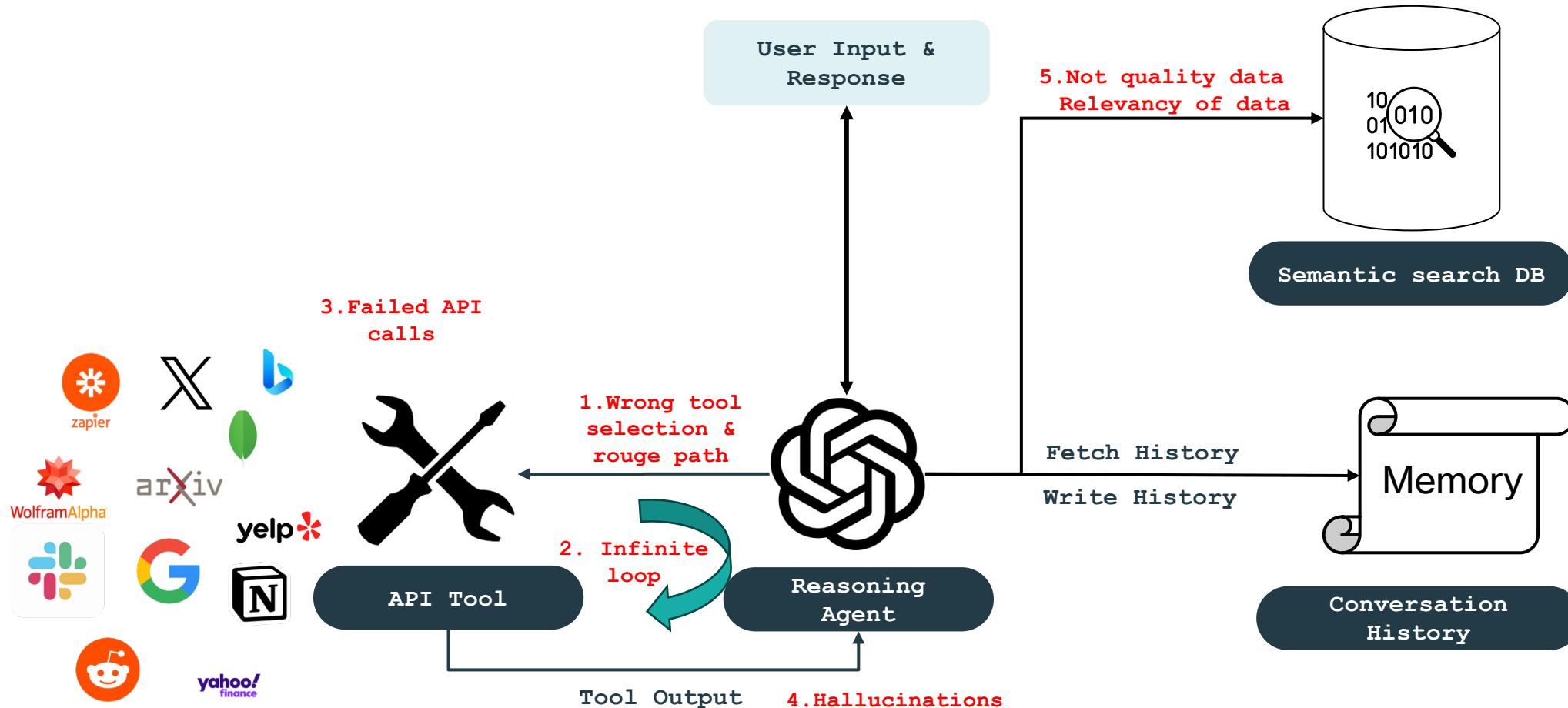


Evaluating LLM Agents



LLM Data Agents Antipatterns

LLM Data Agents – Anti patterns



LLM Data Agents – Anti patterns (1/2)

Better architecture for sustainable outcomes



Anti pattern # 01

Wrong tool selection and rogue path

Solution 01

The selection of tools and API agents is rigorously verified and standardized.

Anti pattern # 02

Agent is repeatedly using tools such as internet search without exit criteria

Solution 02

Ensure that the exit criteria for tool searches are clearly defined, including a specified iteration limit.

Anti pattern # 03

Failed API Calls

Solution 03

Implement retry mechanisms and manage exceptions appropriately within the workflow.

LLM Data Agents – Anti patterns (2/2)

Better architecture for sustainable outcomes



Anti pattern # 04

Occurrence of inaccurate or fabricated responses from LLM. i.e. Hallucination

Solution 04

Align LLM with specific goals based on business needs. i.e. Finetuning

Anti pattern # 05

Not good quality of data and relevancy of data

Solution 05

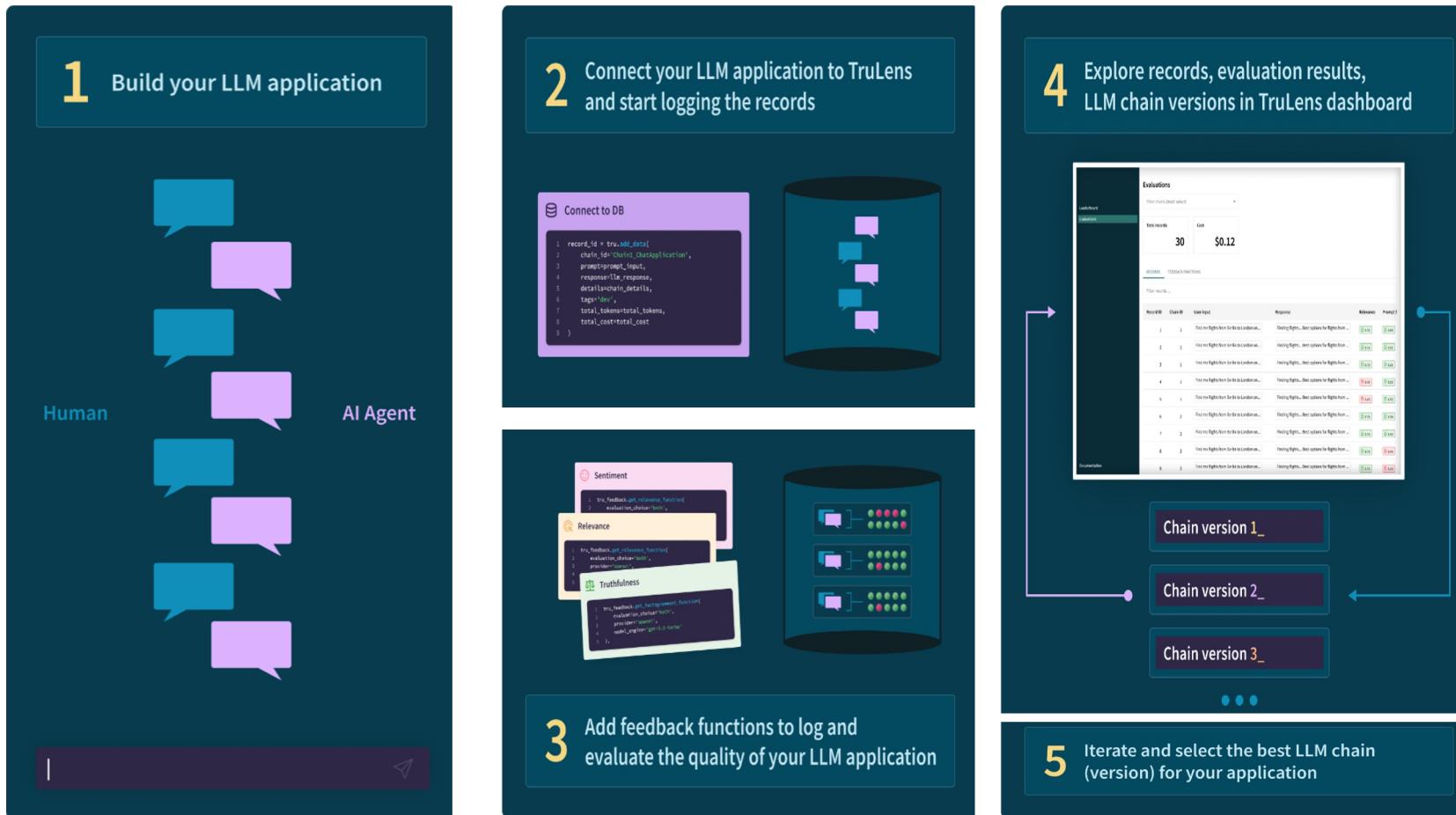
Ensure the data within the vector store is of high quality and regularly updated in a timely manner.

Evaluation criteria for Agents

- Query Translation
- Context
- Groundedness
- Question Answer Relevance



Track and Evaluate LLM agents with Truelens



github.com/truera/trulens

Demo

[Link](#)



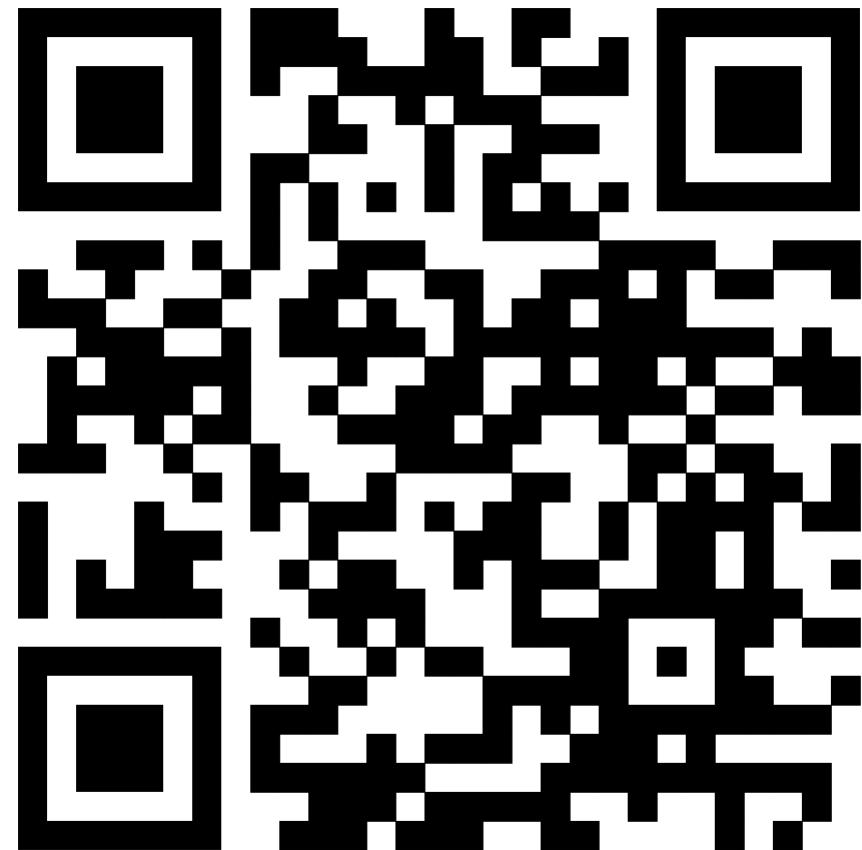
Take away

- RAG ARCHITECTURE
- LLM AGENTS
- B2C USE CASES WITH LLM AGENTS
- AGENT EVALUATION



Thank you

Presentation materials



Appendix

