



# RAG to Riches

*How to realize the full potential of GenAI*



Paul Moxon  
SVP Data Architectures & Chief Evangelist  
Denodo Technologies



# AI

is eating the world.

# The Potential of Generative AI

# \$15.7 trillion

## Game changer

*Sizing the prize: What is the real value of AI to your business?, PwC*

# 89%

rank AI and GenAI as a **top-three tech priority for 2024**, and 51% put it at the top of their list (cybersecurity and cloud computing are the other two top priorities)

*From Potential to Profit with GenAI, BCG, January 2024*

“Generative AI technology will substantially disrupt our industry over the next five years.”

# 62%



of poll respondents agree

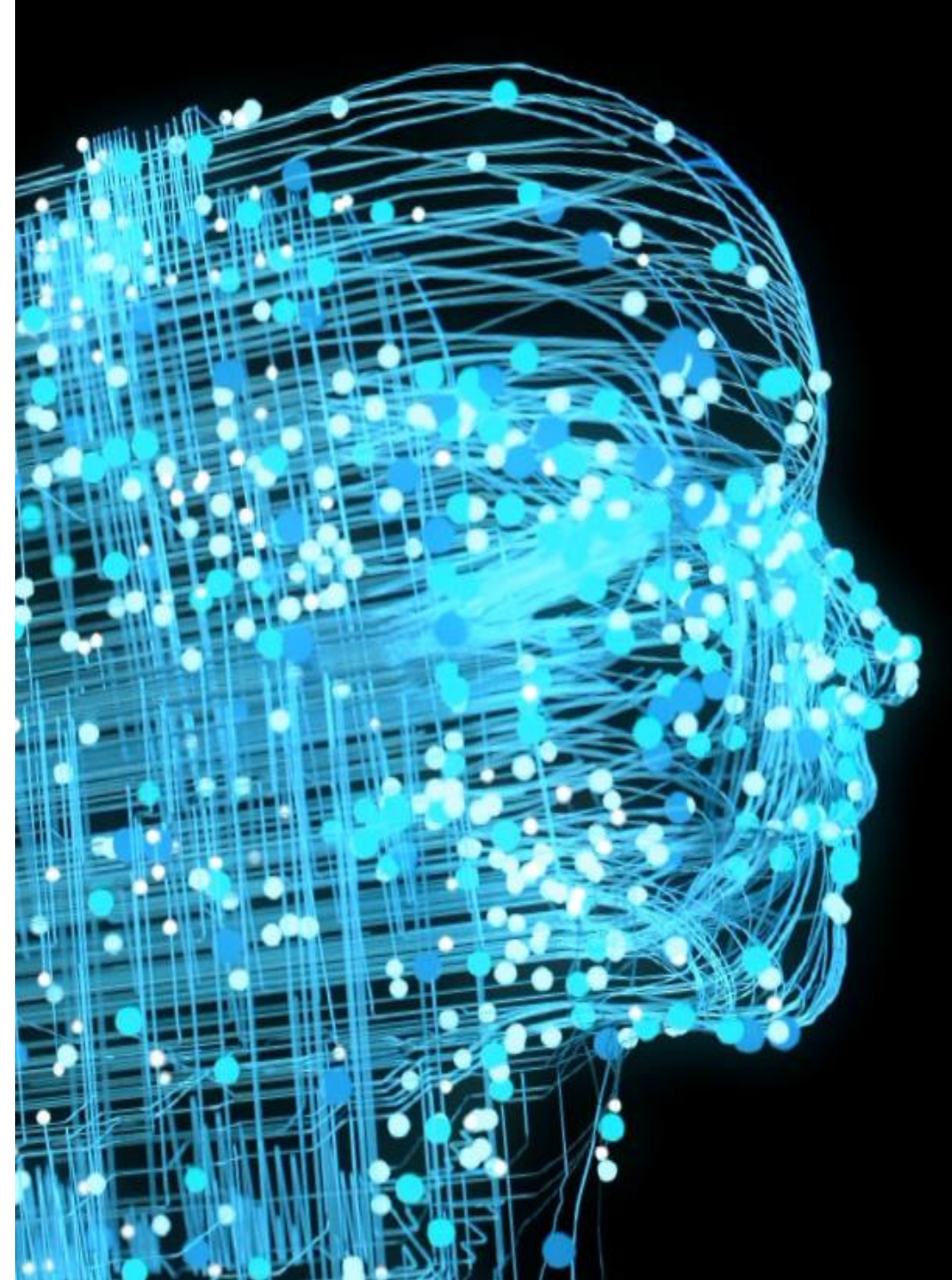
Source: Compiled by MIT Technology Review Insights survey, 2024

**Calling generative AI revolutionary is no hyperbole. Business leaders should view it as a general-purpose technology akin to electricity, the steam engine, and the internet.**

*How to Capitalize on Generative AI, Harvard Business Review, Nov-Dec 2023*

**“the most important advance in technology since the graphical user interface . . . as fundamental as the creation of the microprocessor, the personal computer, the internet, and the mobile phone.”**

*Bill Gates, March 2023*

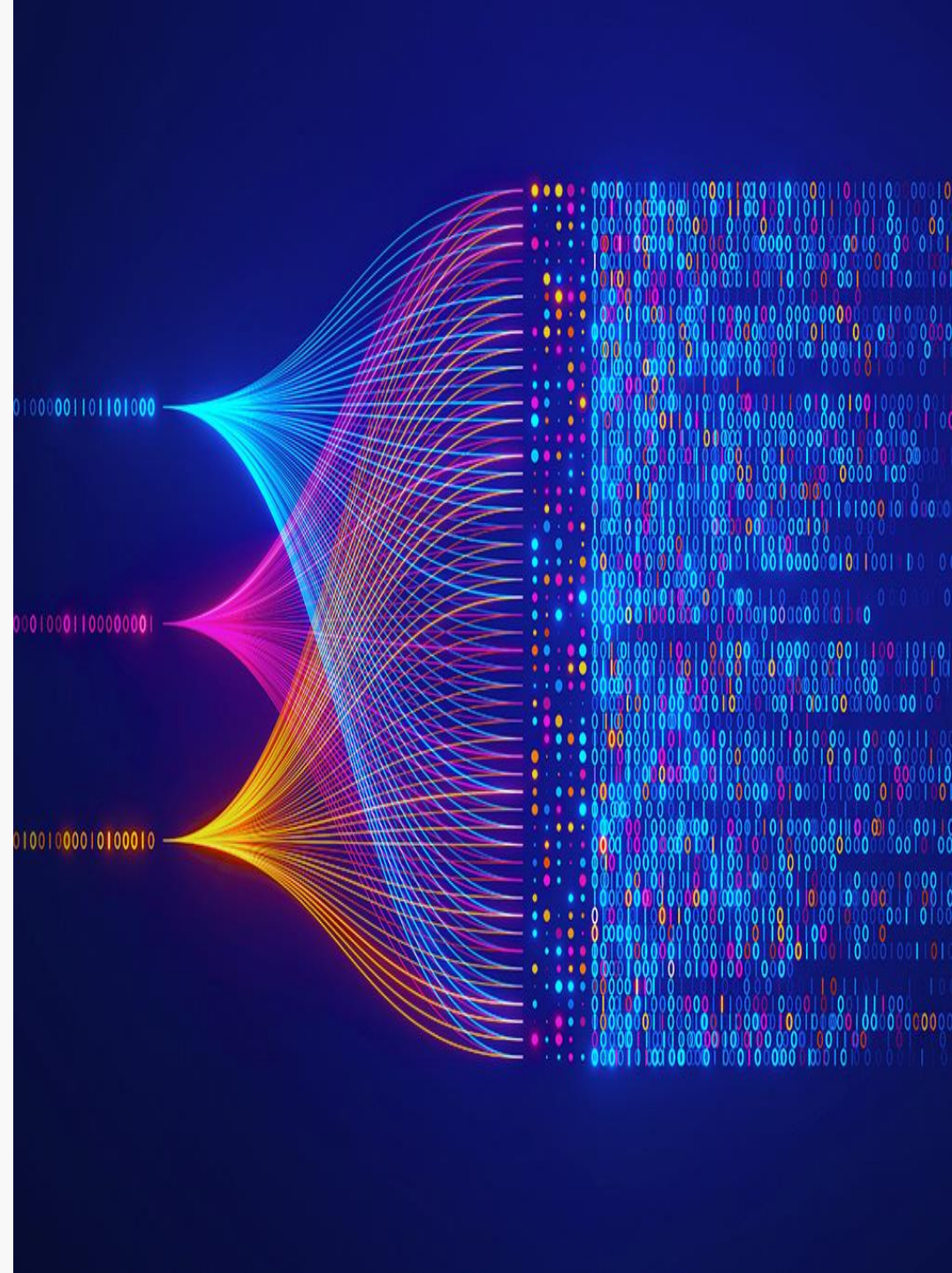




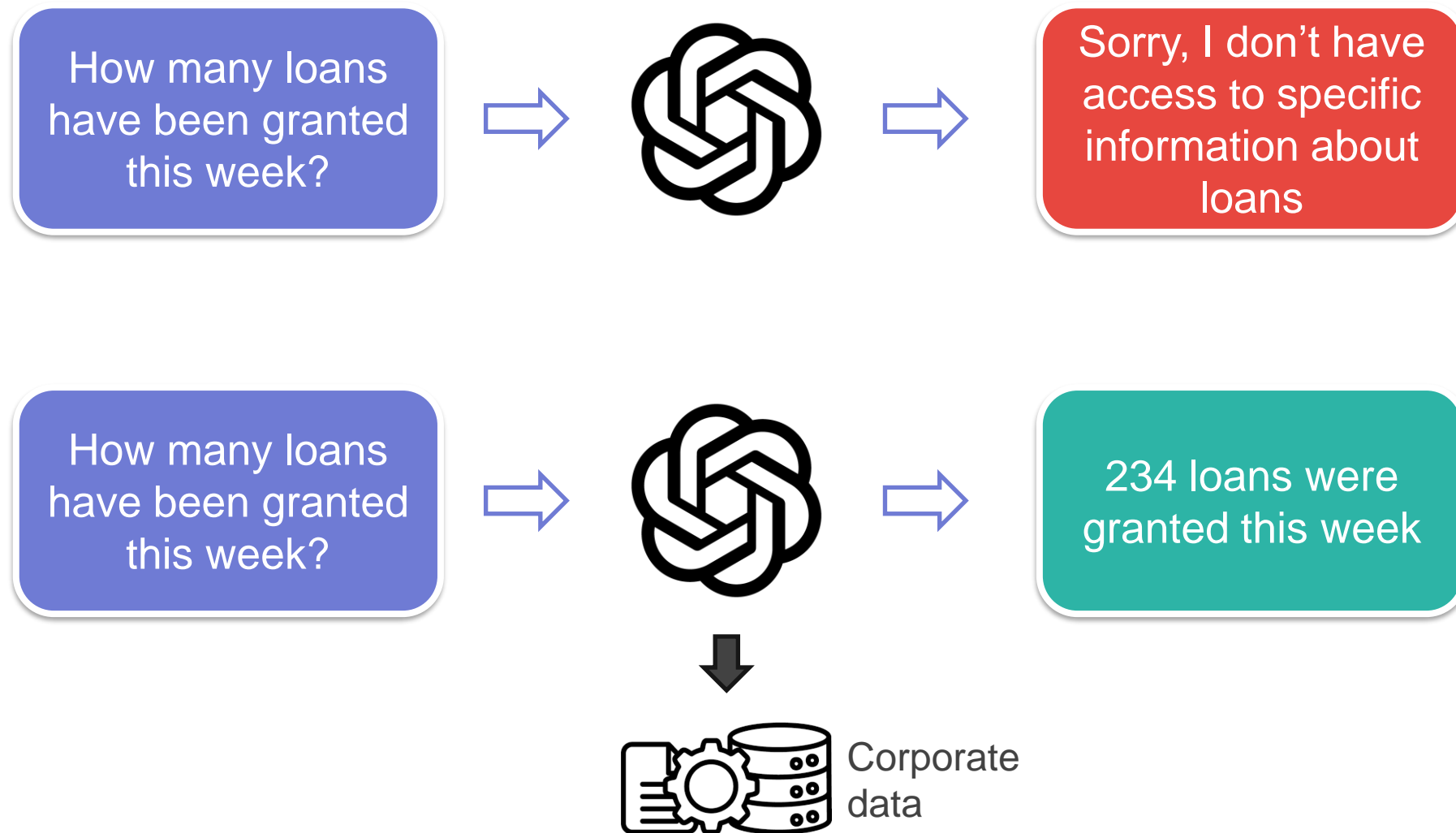
However...

66%

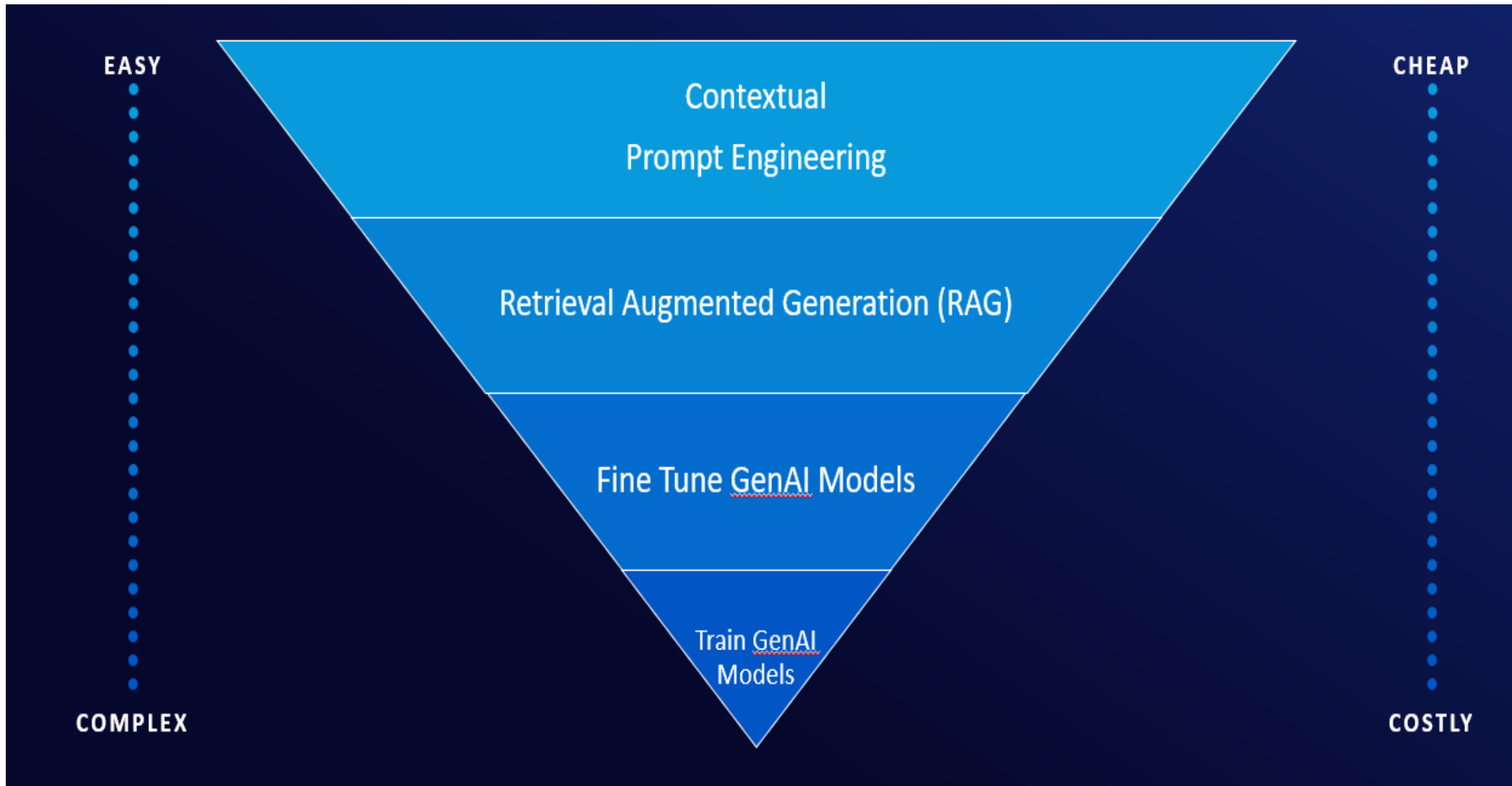
of executives are **ambivalent or outright dissatisfied** with their organization's progress on AI and generative AI so far.



# GenAI LLMs Need Context

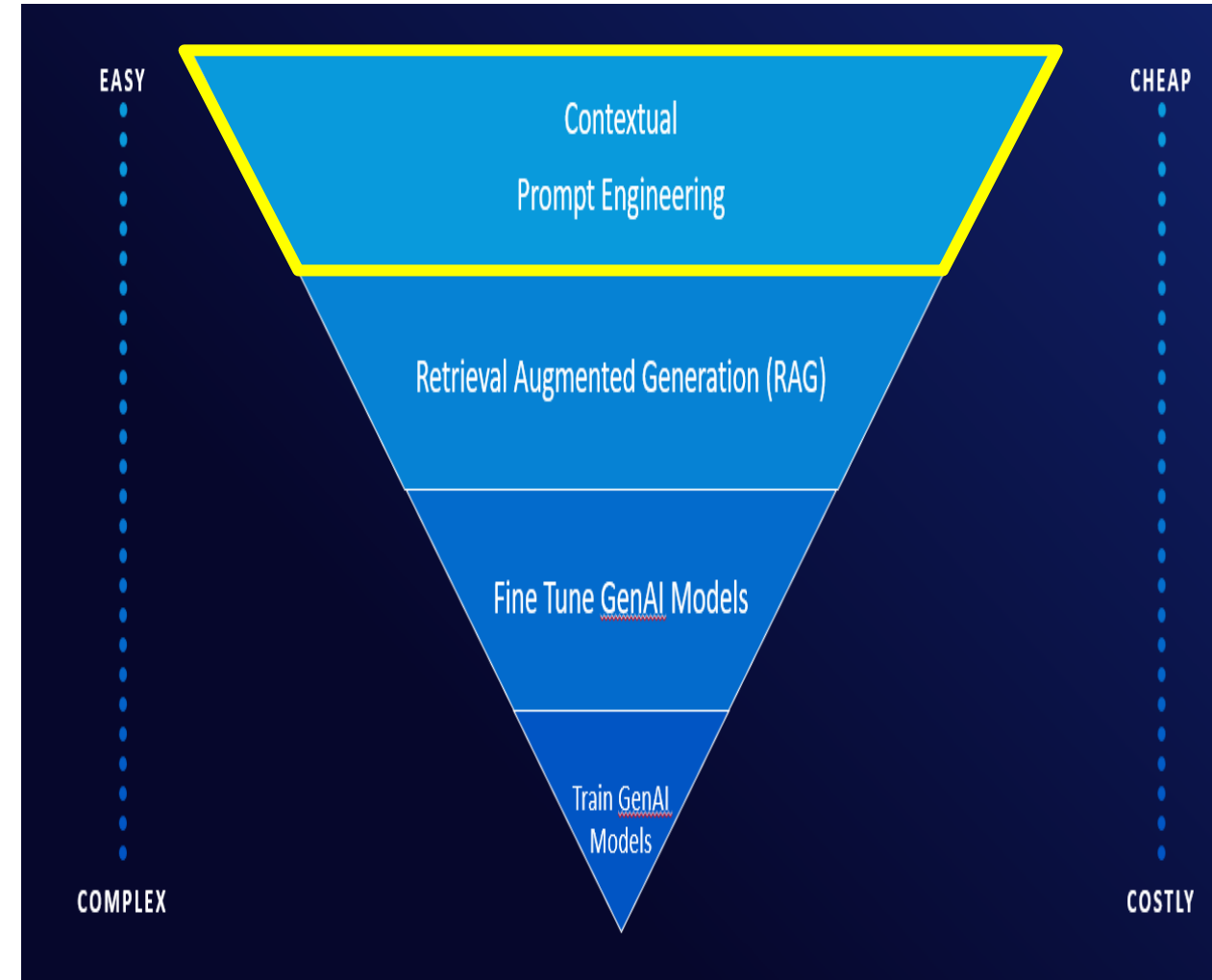


# Generative AI Usage Patterns



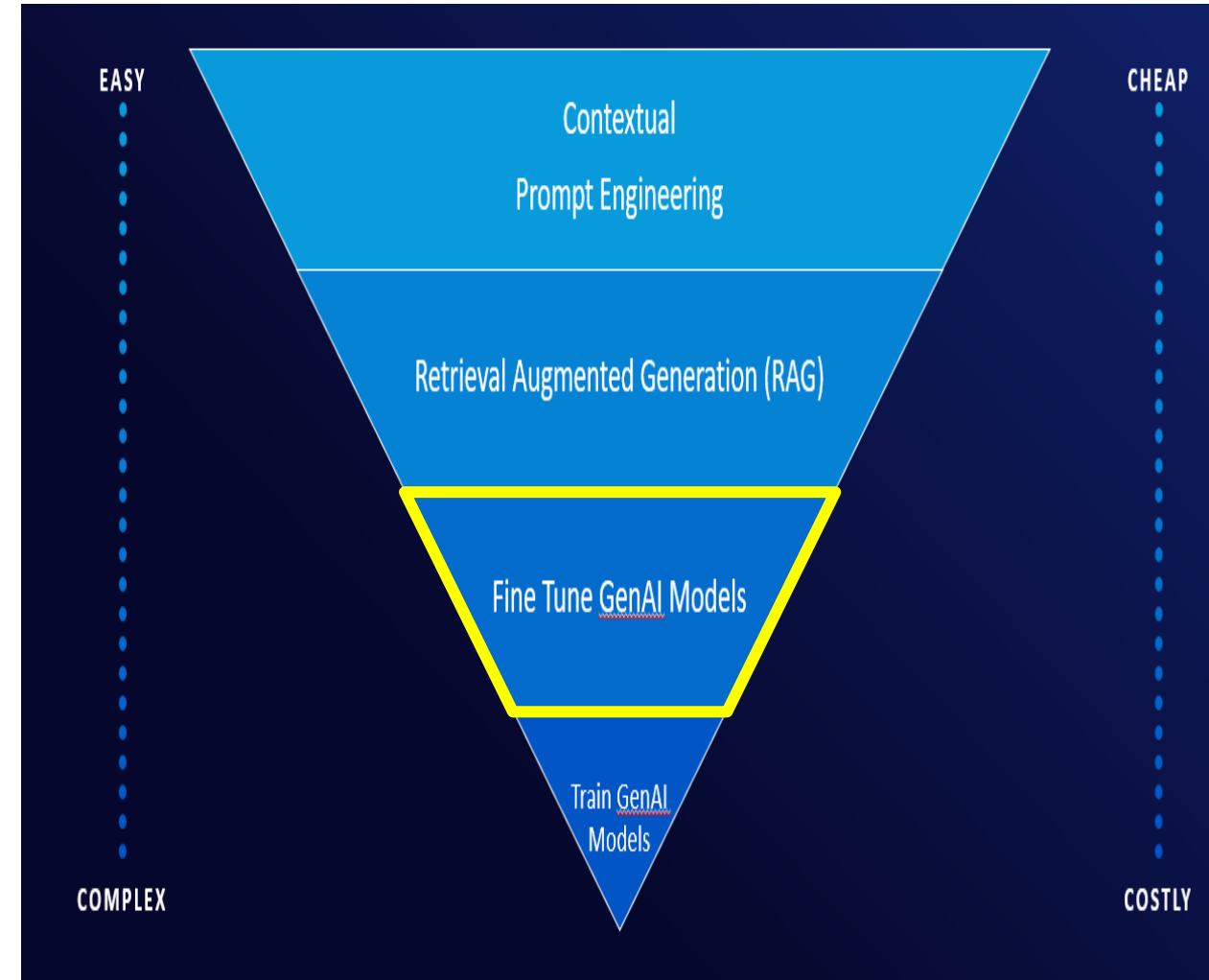
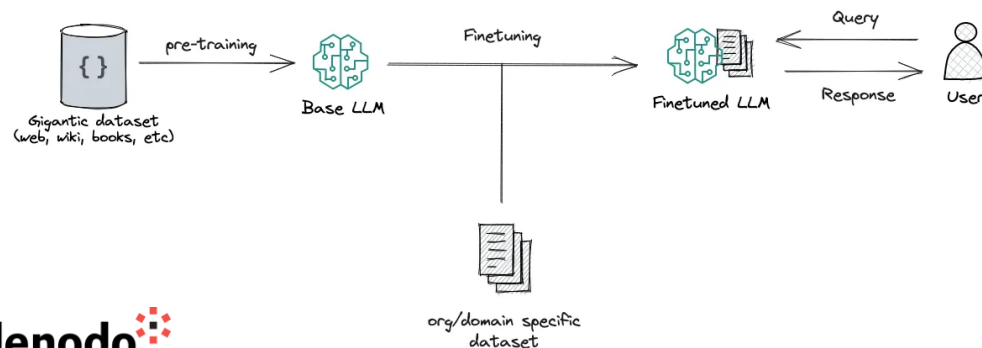
# Prompt Engineering

- Crafting prompts to get better outputs from the LLMs
- Various techniques can be used
  - Chain-of-Thought
  - Generated Knowledge prompting
  - Self-refine
  - Directional Stimulus prompting
- Becoming obsolete?
- Still relevant for understand 'thought process' of LLM



# Fine Tune GenAI Models

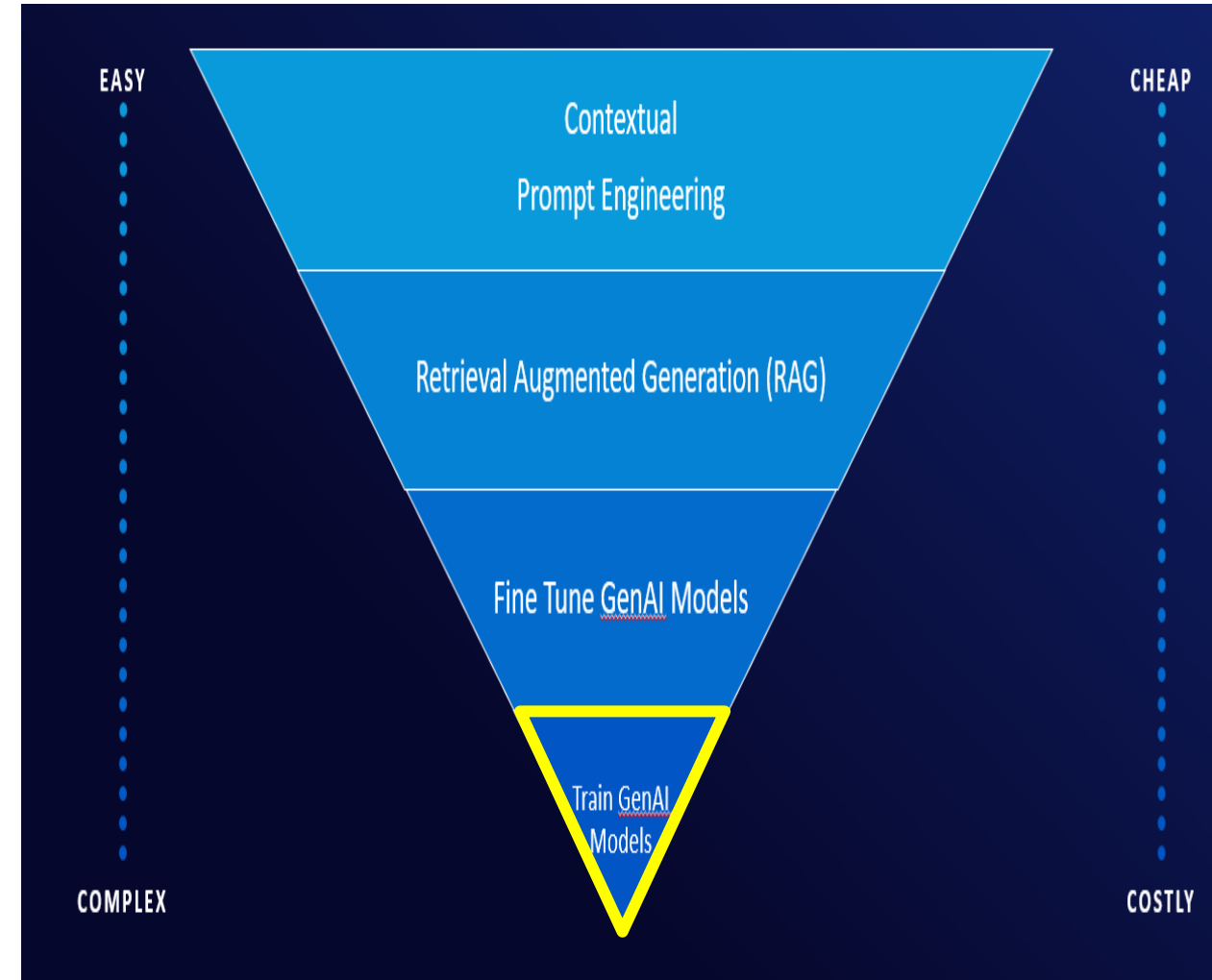
- Further training the LLM on information specific to your organization
  - SOPs, manuals and documentation, coding standards, etc.
- Time consuming and costly
- Requires high level of understanding of LLM workings
- Useful for 'static' information



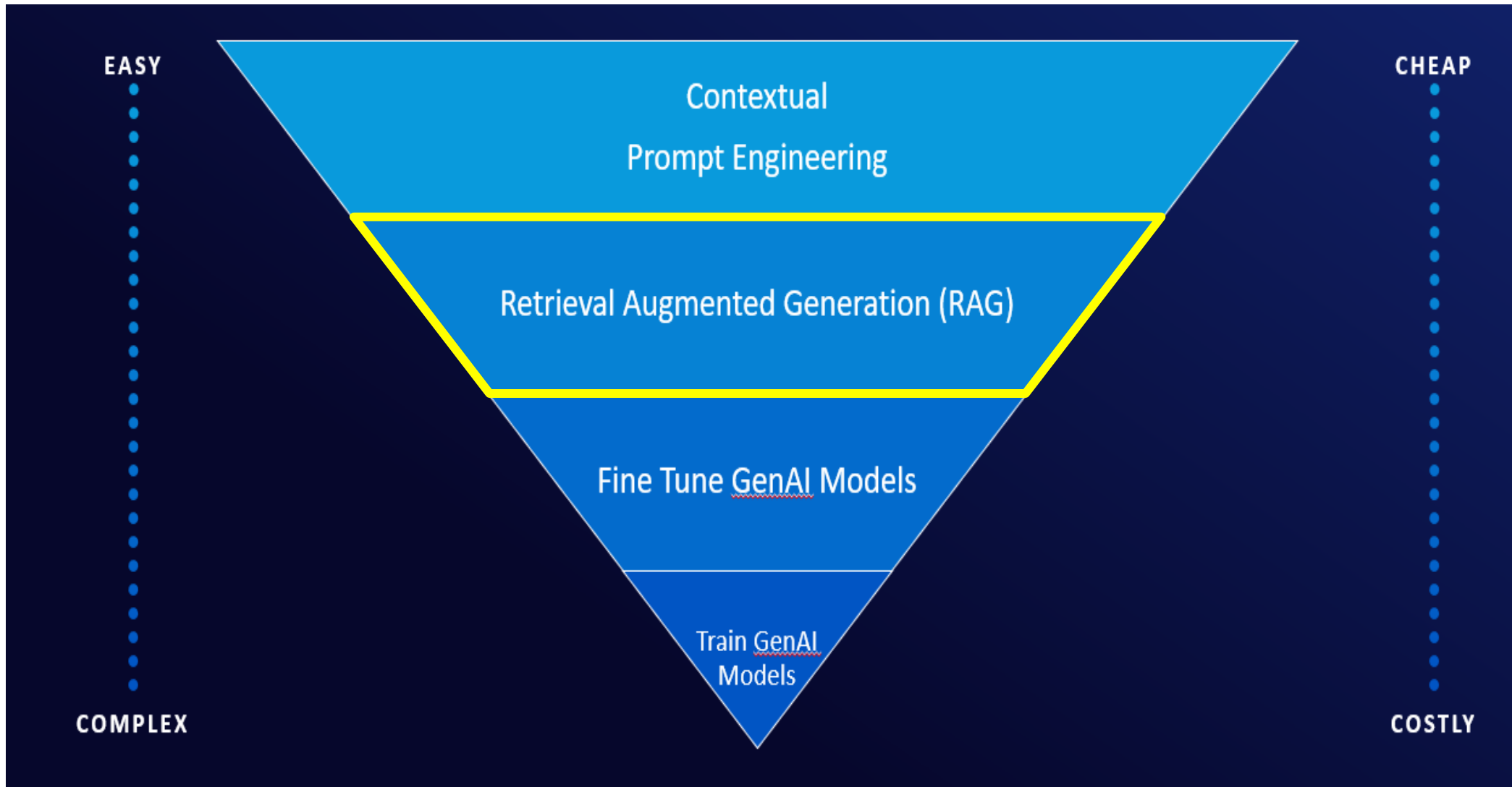


# Train GenAI Models

- Train a LLM from scratch
- Very few organizations can – or desire – to do this

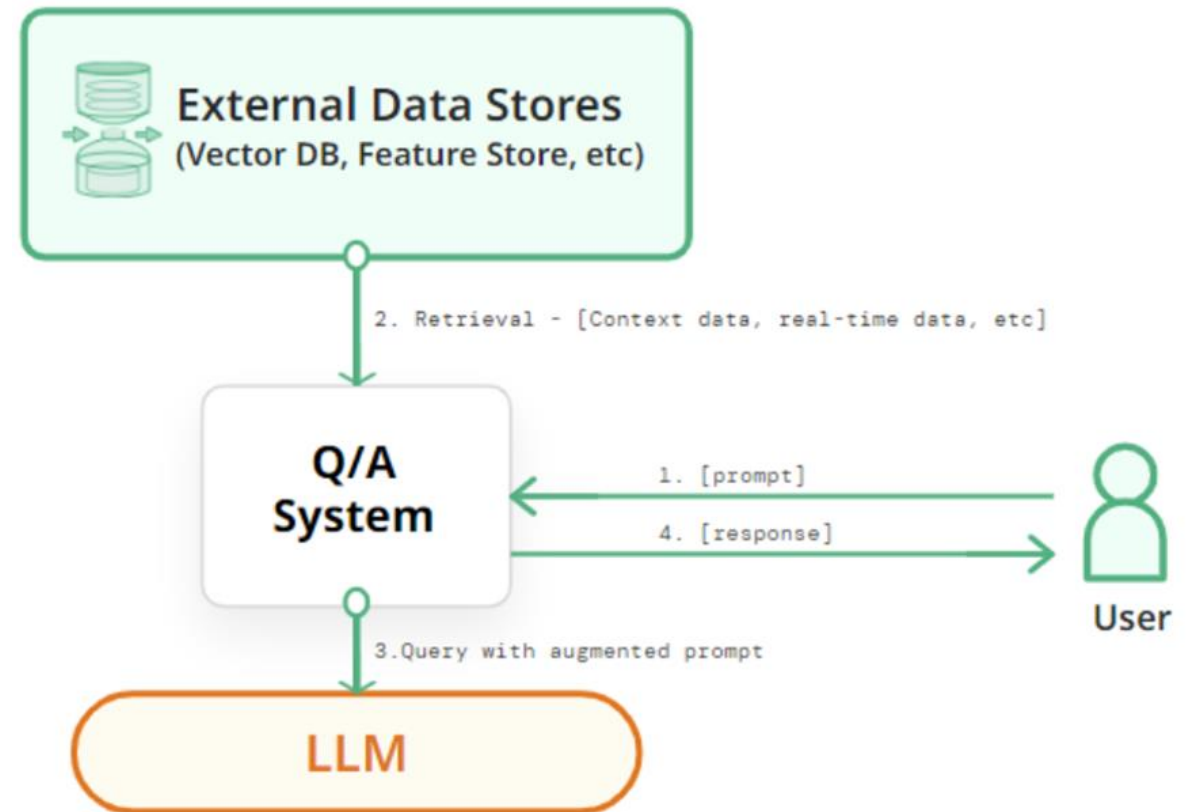


# Retrieval Augmented Generation (RAG)

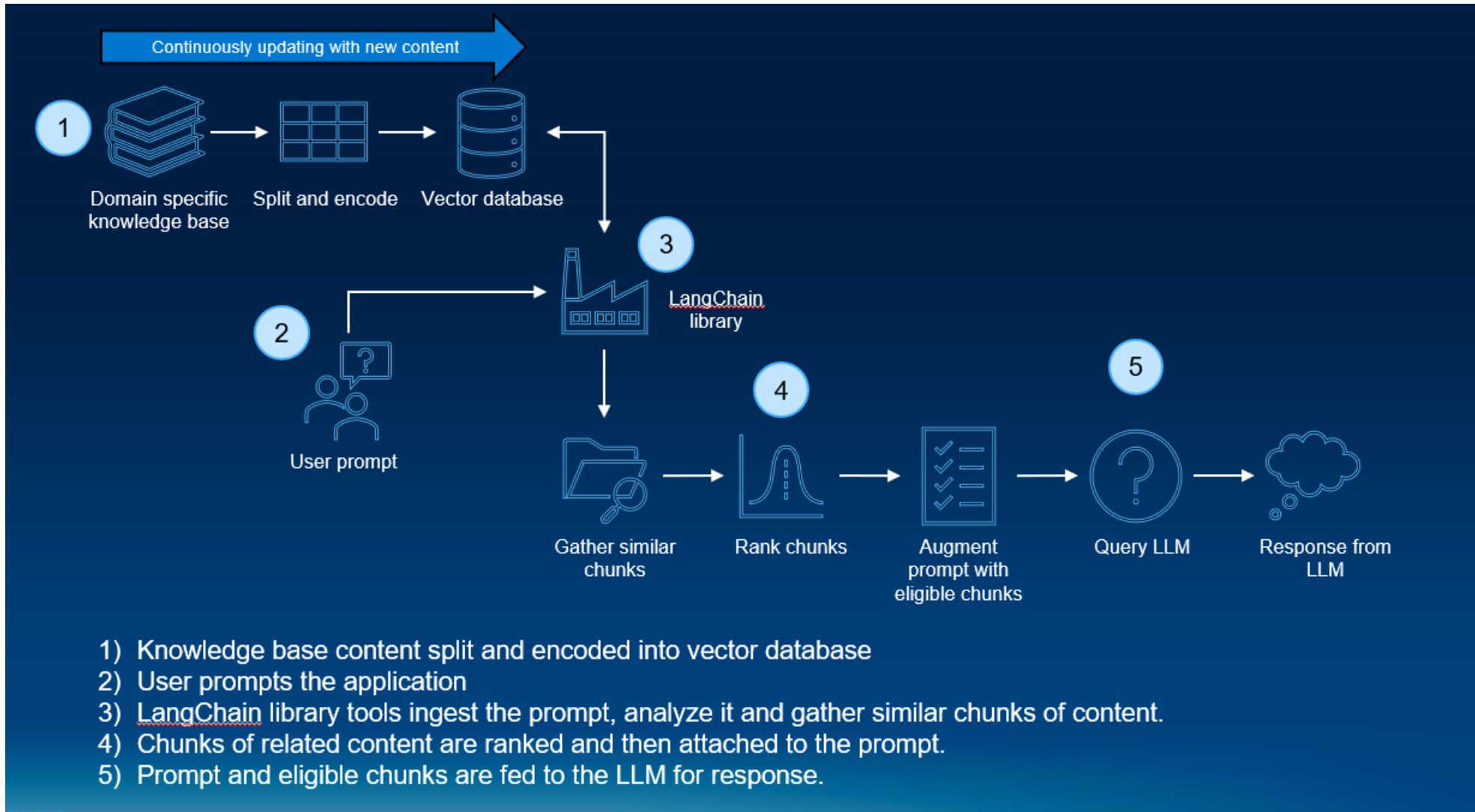


# What is Retrieval Augmented Generation?

- Additional retrieval step in Q/A process
- Use initial prompt [*Step 1*] to retrieve relevant data from 'external data stores' [*Step 2*]
- Provide augmented prompt to LLM
  - Augmented with context to direct the response
- Google 'RAG LLM'

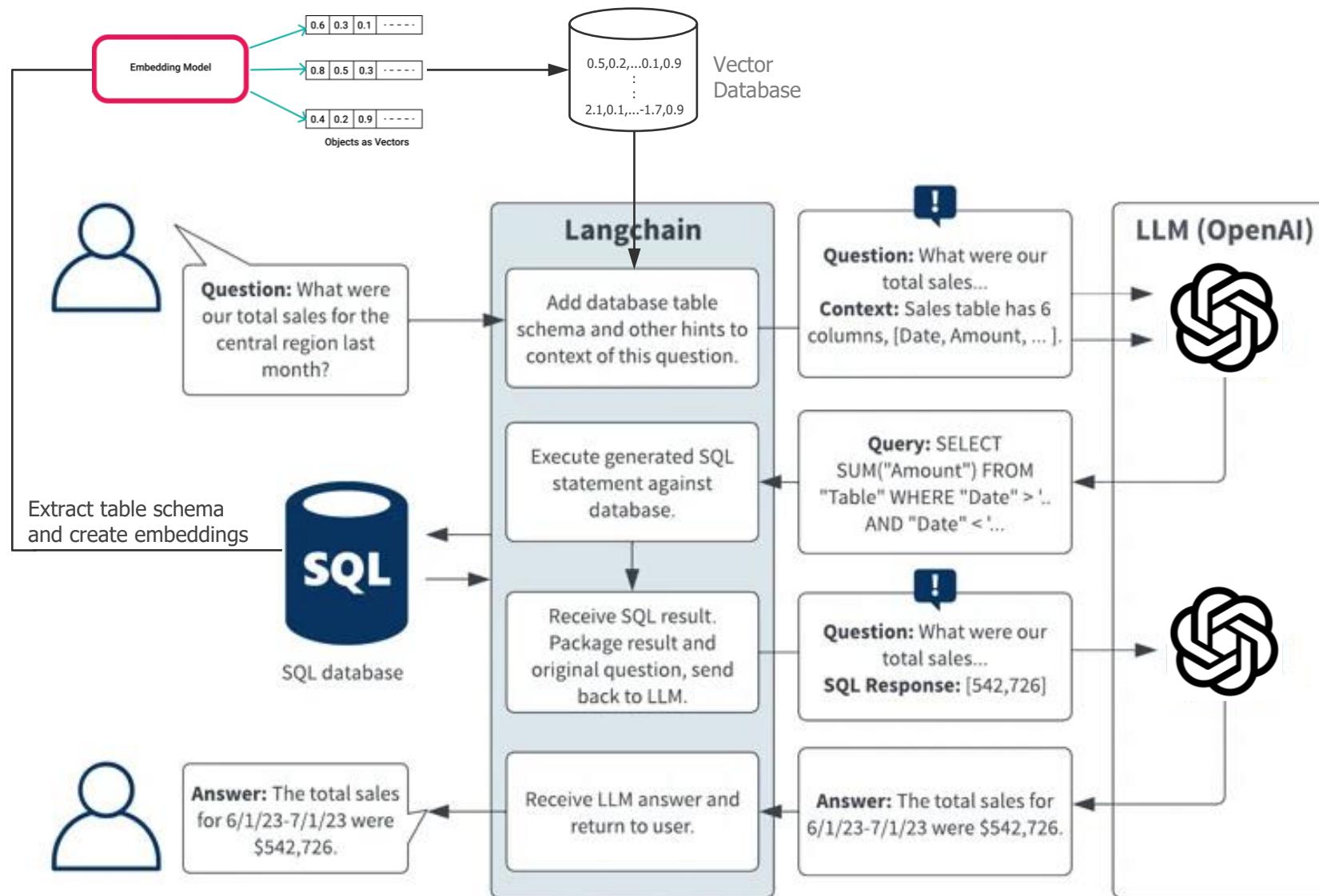


# RAG in More Detail

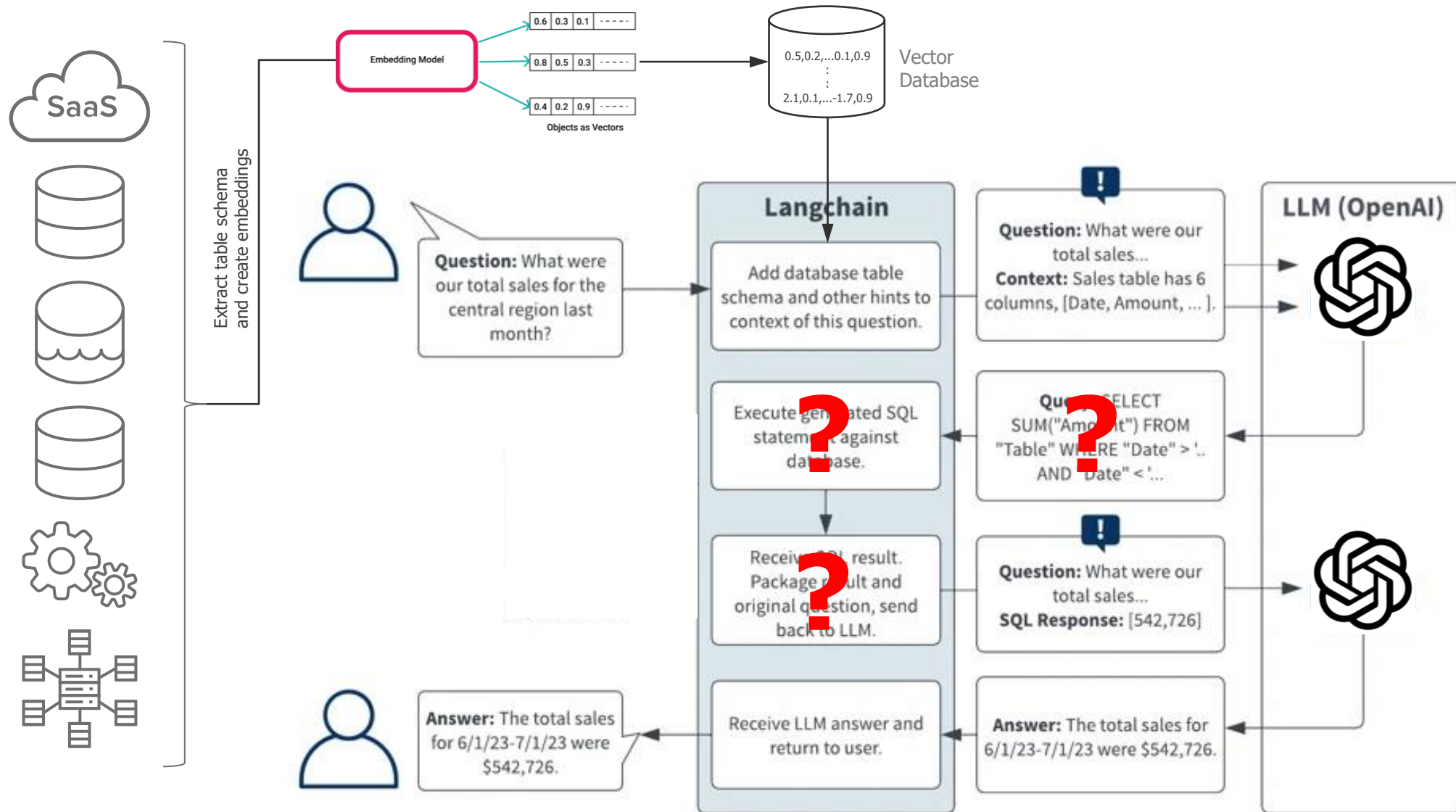




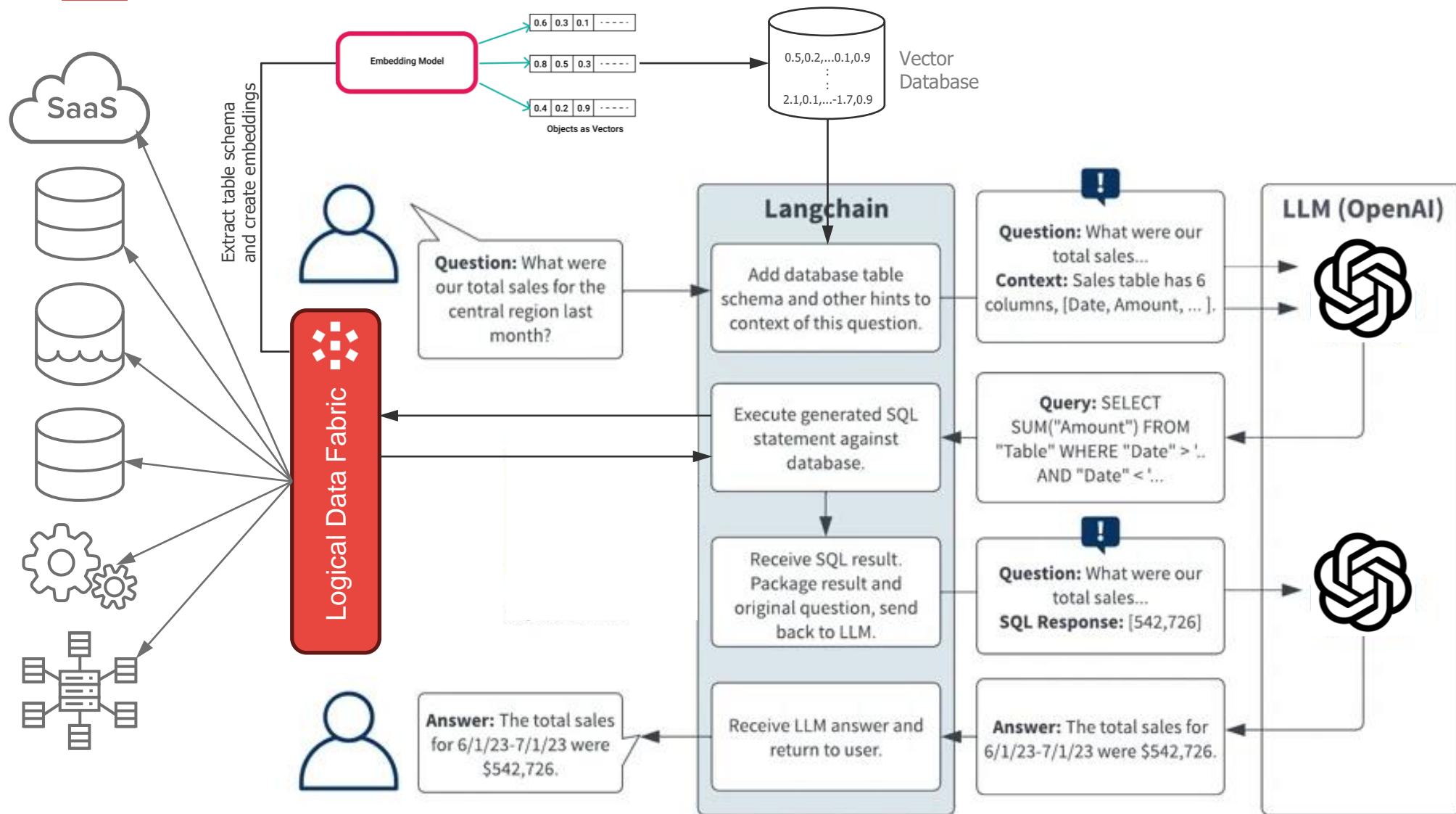
# RAG for Dynamic Data



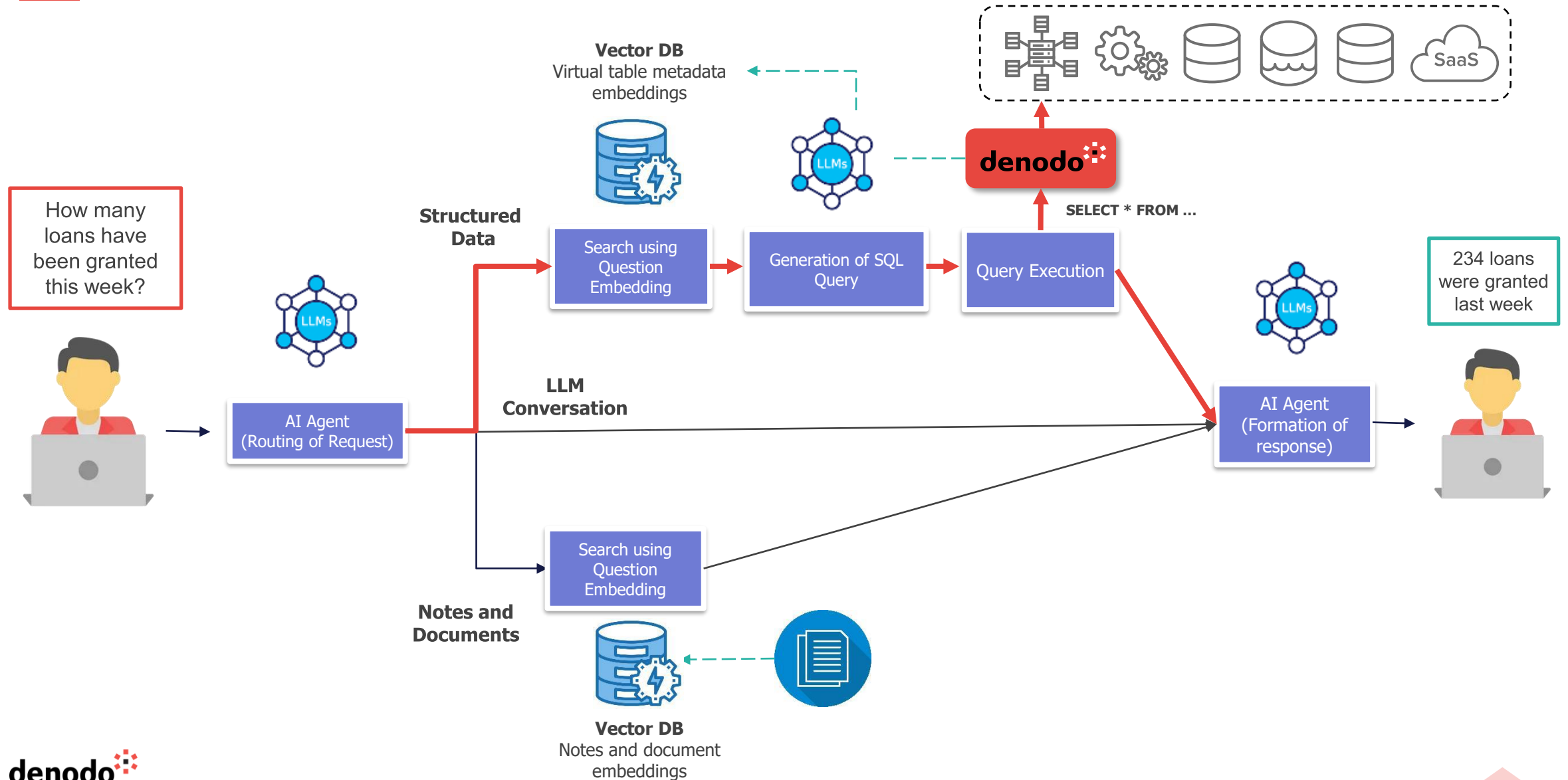
# RAG for Dynamic Data



# RAG for Dynamic Data



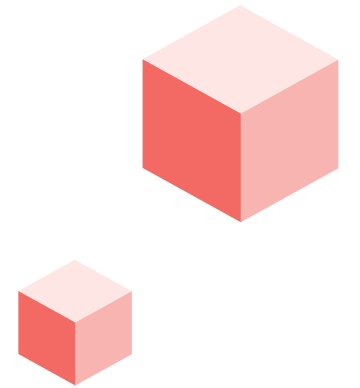
# AI Agent Enabled by RAG and a Logical Data Fabric



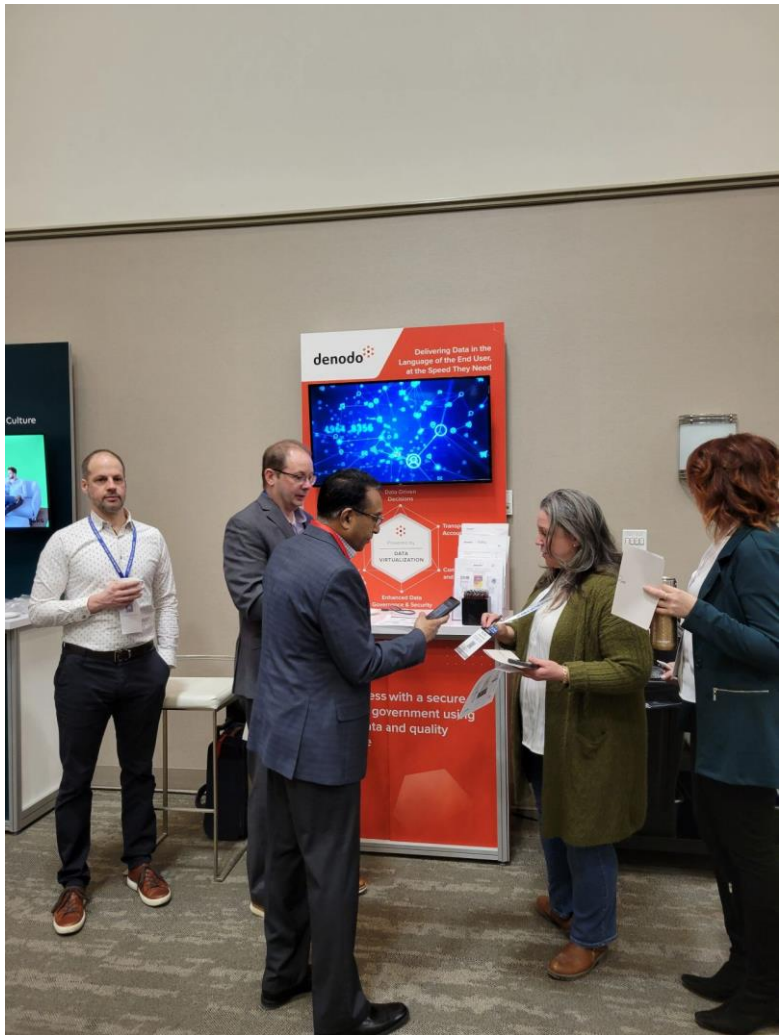


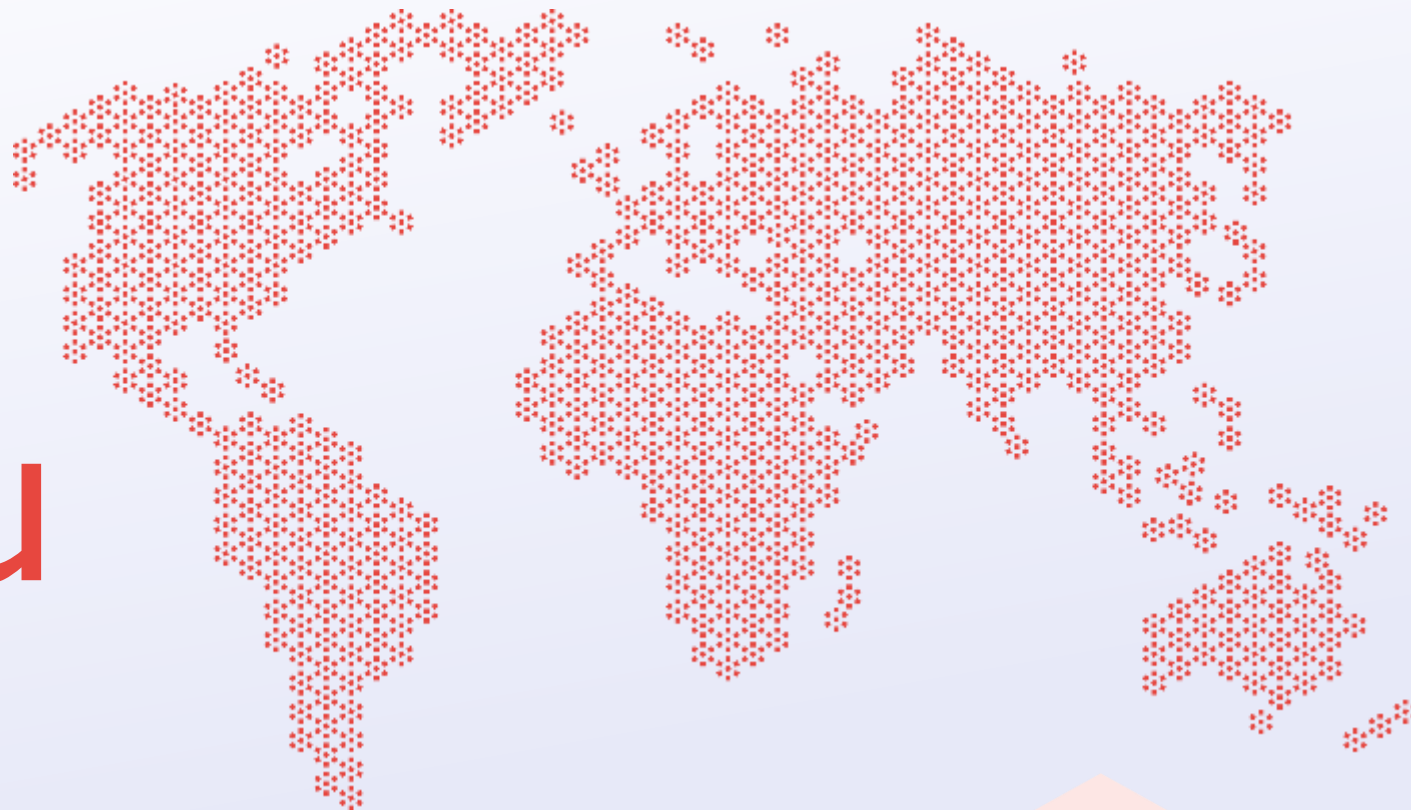
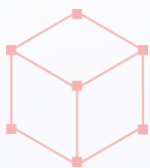
# KEY TAKEAWAYS

- Generative AI **is** transformational
- Retrieval Augmented Generation (RAG) will enable you to realize the full potential of GenAI
- You need to get your data 'AI ready'
- A logical data architecture is the quickest and easiest way to get 'AI ready'



# Visit the Denodo Booth





# Thank You



[www.denodo.com](http://www.denodo.com)

[info@denodo.com](mailto:info@denodo.com)

© Copyright Denodo Technologies. All rights reserved