


AI / BI   
SYMPOSIUM

# MicroStrategy and ChatGPT

A Roadmap Discussion

# Agenda

## LLM Powered Application

- What is ChatGPT and LLM
- Breaking Down Barriers with LLM in BI
- Current Limitations of LLMs
- Overcoming Limitations with Semantic Graph Integration
- Deployment: Data Privacy & Data Capacity

## MicroStrategy AI Roadmap

- Enhancing BI Workstreams with AI
- Takeaways

## Q&A



# What is ChatGPT?



ChatGPT is an AI-powered chatbot that uses natural language processing (NLP) technology to generate human-like responses to user queries.

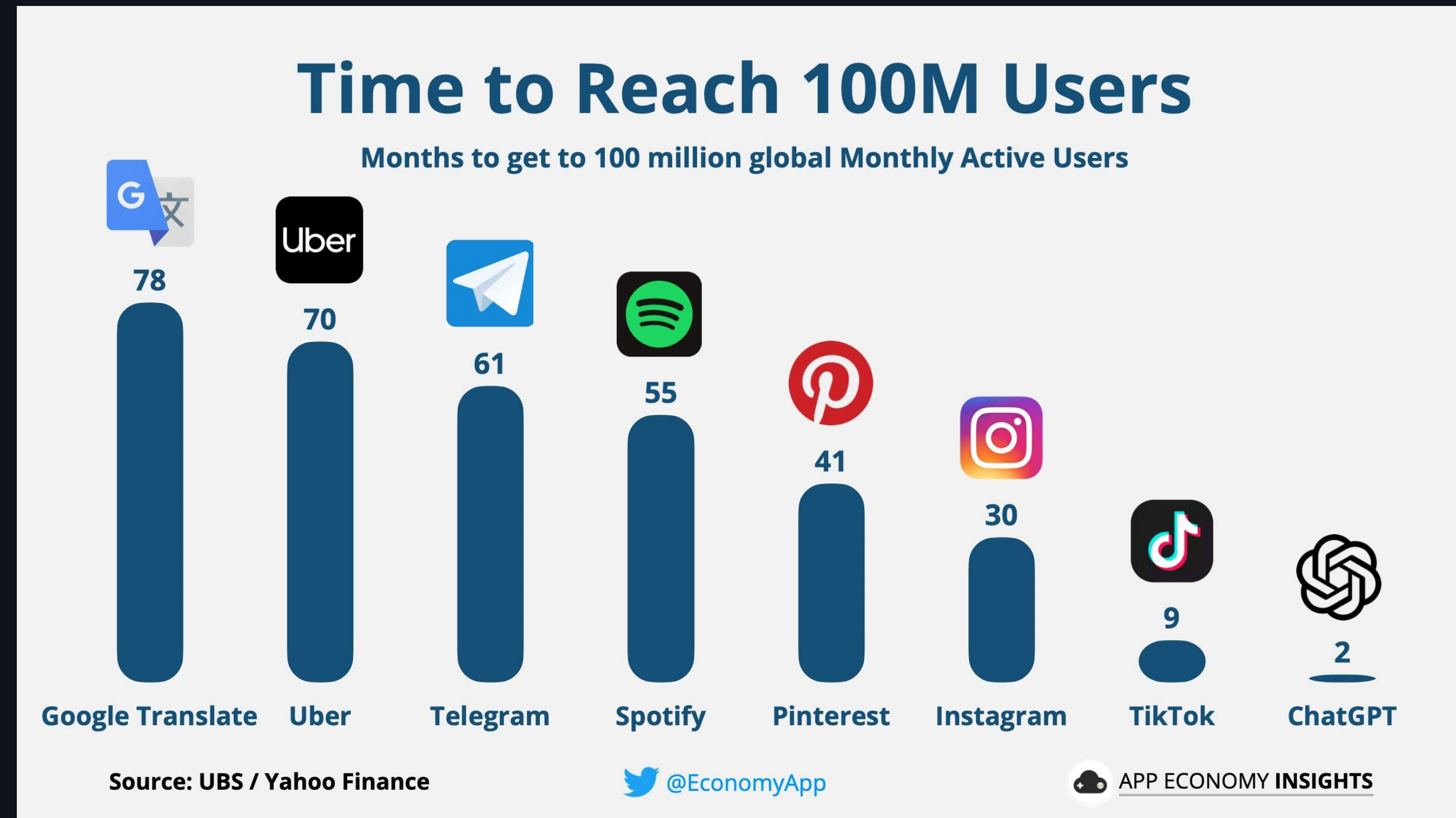


Image Source: Unsplash

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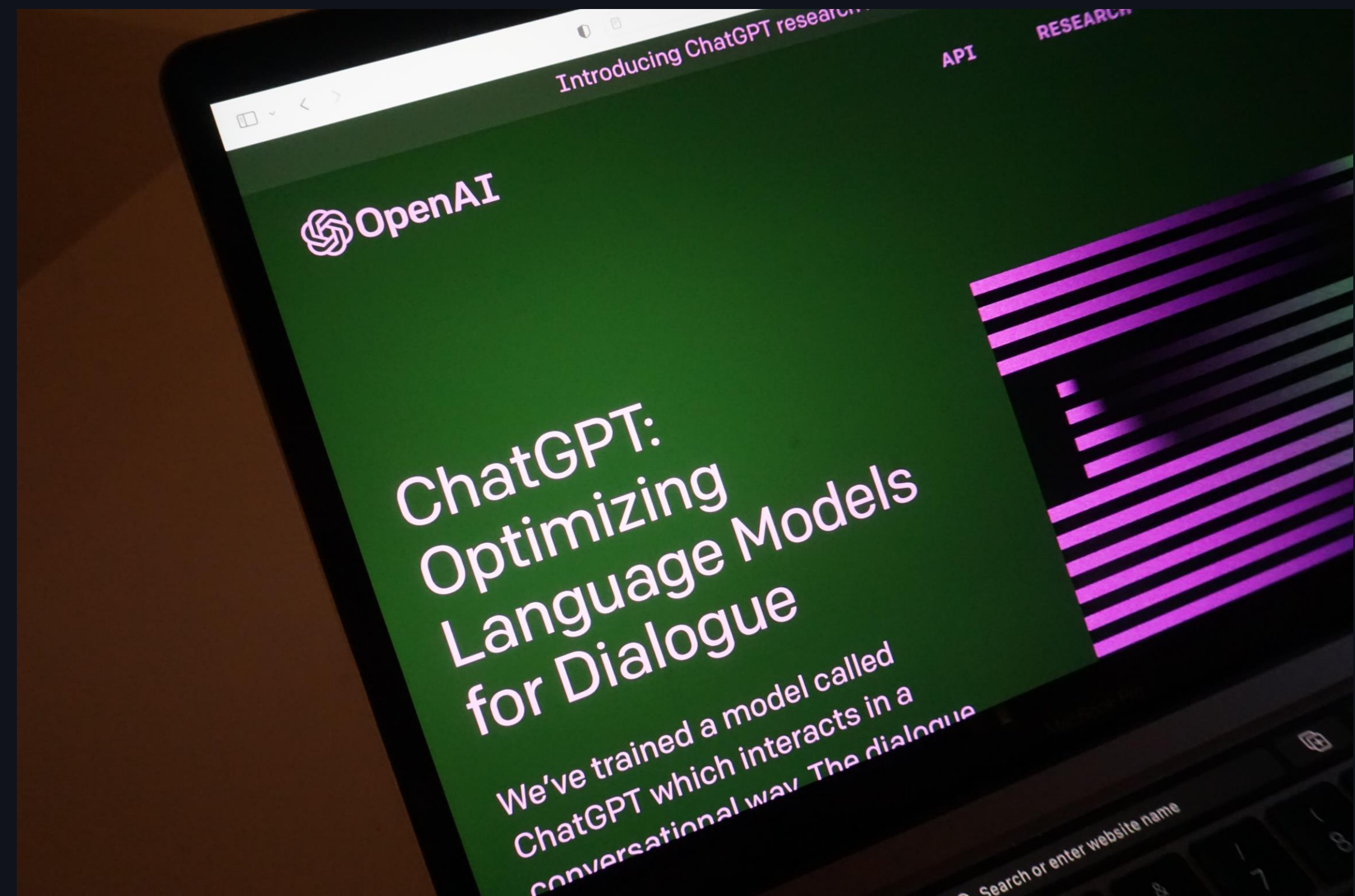


Image Source: Unsplash

# Chat GPT in Use



Generative AI is already strongly established in businesses

ZENJOB

- Provide an app to mediate jobs
- Using AI to qualify candidate`s CVs and match with the right jobs profile available



- The soft drinks giant has formed a partnership with Bain & Company, with the aim of using ChatGPT to assist with **marketing and creating personalized customer experiences** (personalized images, messaging)



- Expedia, one of the world`s most popular travel-planning platforms, has integrated conversational AI assistance into its services.
- Customers can plan their vacations as if they are chatting with a friendly, knowledgeable travel agent.

# LLM and ChatGPT

- GPT stands for generative pre-trained transformer which is a type of large language model (LLM) neural network.
- A Large Language Model is a deep-learning algorithm trained on enormous amounts of text data.
- LLM has billions of parameters



## What is Deep Learning?

**ARTIFICIAL INTELLIGENCE**  
Any technique that enables computers to mimic human behavior

**MACHINE LEARNING**  
Ability to learn without explicitly being programmed

**DEEP LEARNING**  
Extract patterns from data using neural networks

Teaching computers how to **learn a task** directly from **raw data**

MIT Massachusetts Institute of Technology  
MIT Introduction to Deep Learning  
introtodeeplearning.com @MITDeepLearning

1/9/23

# LLM and ChatGPT: Current Competitive Landscape



**BARD AI**



- Accelerating Innovation
- Reducing Costs

**AI**

stability.ai

**mosaic<sup>ML</sup>**

Meta AI

And many more...



# Breaking Down Barriers with LLM in BI



**“ChatGPT is a powerful language model that has the potential to revolutionize the way we interact with and utilize artificial intelligence in our daily lives.”**

- ChatGPT when asked to make a quote about itself

## Why it matters:

- The Power of Questioning: At the core of BI is the ability to ask powerful questions of your data to gain insight and make informed decisions.
- Frictionless Data Interaction: AI language models helps to reduce the friction between users and data.

# Current Limitations of LLMs



SH

can you help analyze the data below, list out the total profit for each subcategory



```
"Category","Subcategory","Quarter","Profit","Cost"
"Electronics","Audio Equipment","2016 Q4","24557","136934"
"Electronics","Audio Equipment","2016 Q3","6539","32785"
"Electronics","Audio Equipment","2016 Q1","6440","27290"
"Electronics","Audio Equipment","2015 Q4","6412","41322"
"Electronics","Audio Equipment","2016 Q2","5522","27144"
"Electronics","Audio Equipment","2015 Q3","3899","20094"
"Electronics","Audio Equipment","2015 Q1","1481","6359"
"Electronics","Audio Equipment","2015 Q2","1477","6143"
"Electronics","Audio Equipment","2014 Q4","872","6674"
"Electronics","Cameras","2016 Q4","61506","326765"
"Electronics","Cameras","2016 Q3","33718","158769"
"Electronics","Cameras","2016 Q2","29184","144870"
"Electronics","Cameras","2015 Q3","15855","72713"
```

## Response from GPT 3.5

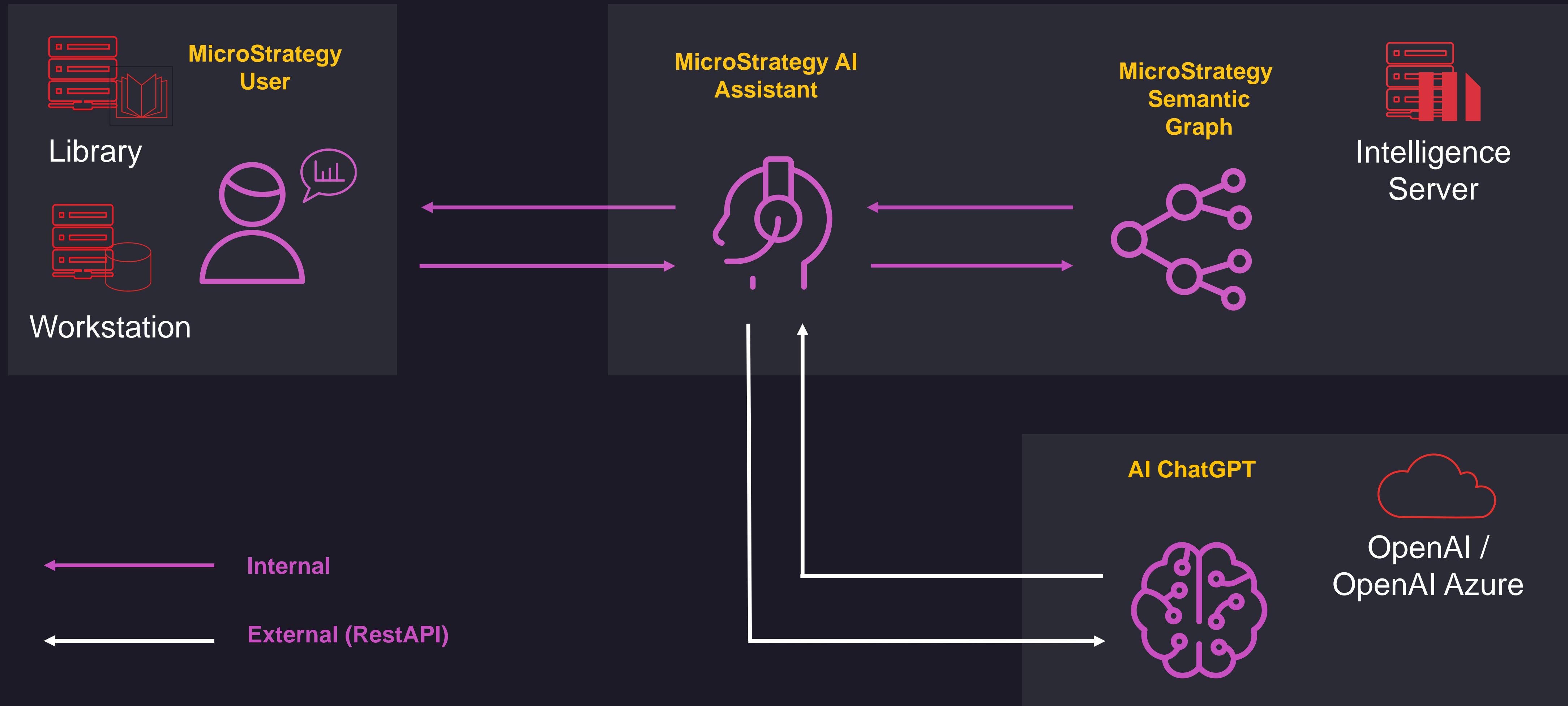
Here are the profit figures for each subcategory:

- Audio Equipment: **\$51,349**
- Cameras: **\$205,012**
- Electronics - Miscellaneous: **\$139,653**
- TV's: **\$41,562**
- Video Equipment: **\$212,789**

## Response from GPT 4

1. Audio Equipment: **\$56,719**
2. Cameras: **\$186,826**
3. Electronics - Miscellaneous: **\$123,370**
4. TV's: **\$44,557**
5. Video Equipment: **\$187,530**

# MicroStrategy OpenAI Integration Architecture Workflow

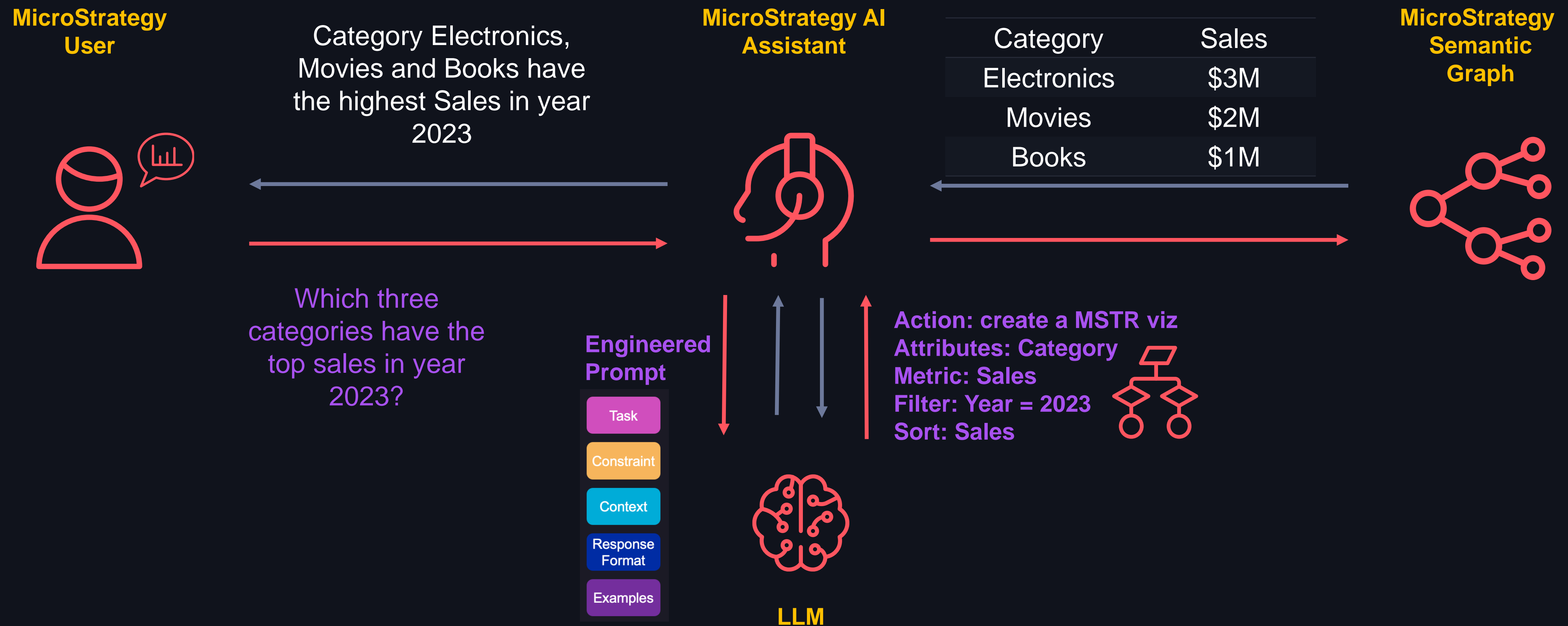


# Overcoming Limitations with Semantic Graph Integration



AI + Semantic Graph = Trust

## Example: OOTB MicroStrategy AI Assistant For Library Dossier Consumption



# Deployment: Data Privacy

Data Privacy on OpenAI and Azure OpenAI



- On April 25, 2023 OpenAI provided an option to turn off chat history in ChatGPT
- ChatGPT Business subscription will be released for professionals to provide greater control over enterprise data and end users



- No prompts or completions are stored in the model during these operations
- Prompts and completions are not used to train, retrain or improve the models.

# Deployment: Capacity



How many concurrent requests can GPT-4 handle?

Model	Provider	Tokens-Per-Minute (TPM)	Requests-Per-Minute (RPM)	Estimated Average Token Size Per Real Use Case	Actual RPM
GPT-4	OpenAI	40k	200	2k	20
GPT-4	Azure OpenAI	20k	N/A	2k	10
GPT-4 32k	Azure OpenAI	40k	N/A	2k	20

- 1000 users
- 30 requests per hour
- $30000/60 = 500$  requests per minute  $\gg 20$

# Enhancing BI Workstreams with AI

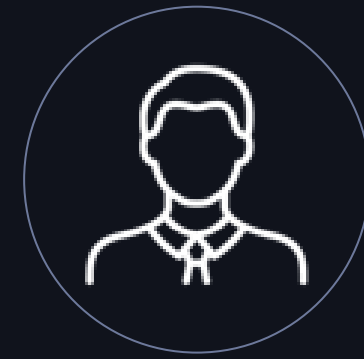


Elevating the user experience and analytics



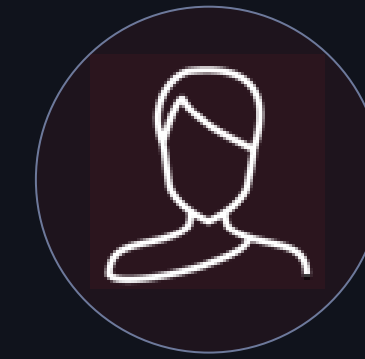
**BUSINESS USERS**

Deeper Insights



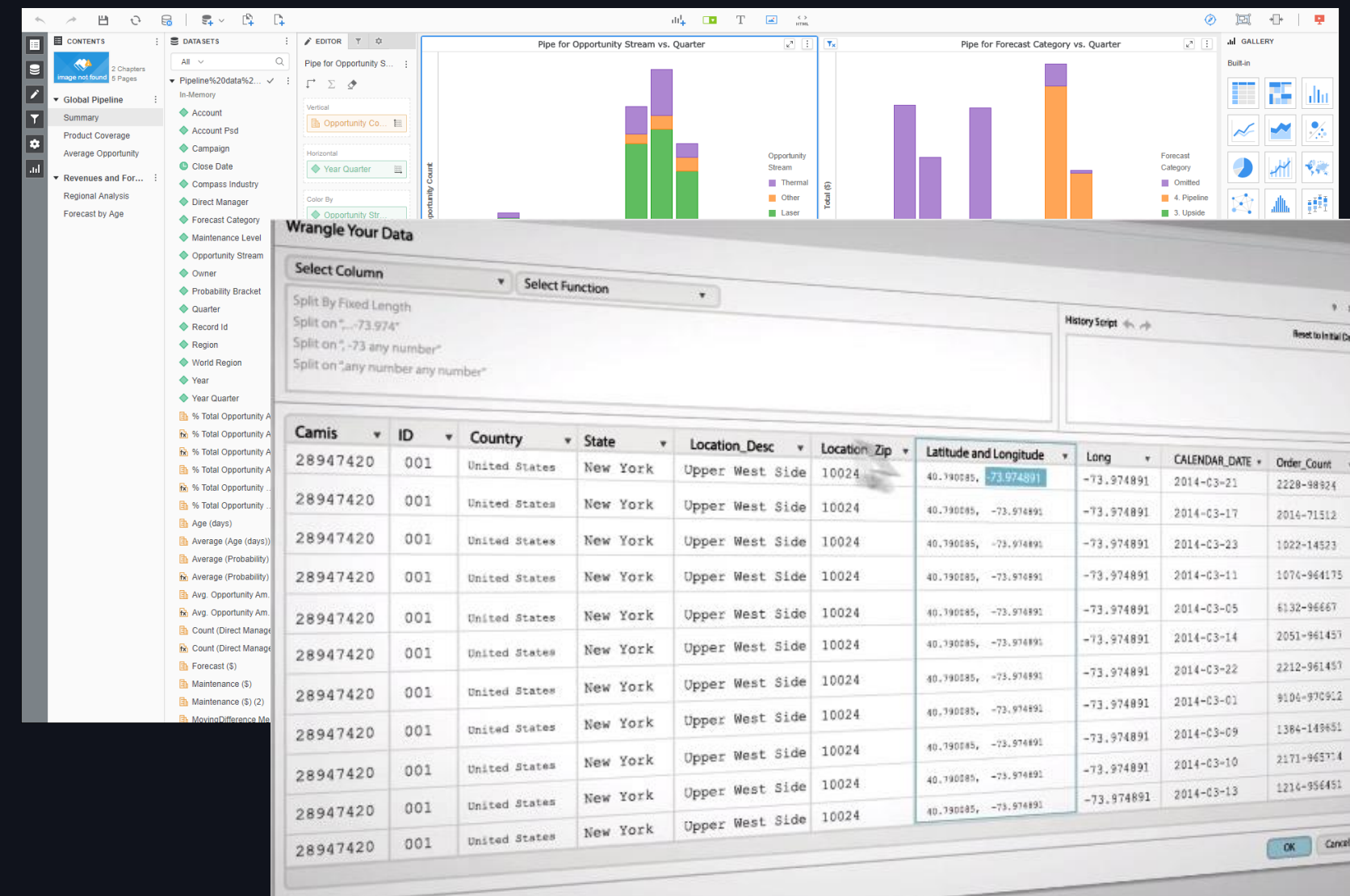
**ANALYSTS**

Advance data exploration  
and ease of authoring



**ADMIN/ARCHITECT**

Efficient platform management and  
ease of Semantic Graph design



A screenshot of a user management interface. The top part shows a "user mgmt" window with a "Save" button and a "Run" button. The middle part shows a script editor with a script for managing users. The bottom part shows a gallery of user management tools.

```
1 ""This is the demo script to show how administrator can manage users and
2 user groups.
3
4 This script will not work without replacing parameters with real values.
5 Its basic goal is to present what can be done with this module and to
6 ease its usage.
7
8 import csv
9 from code_snippets.document import USER_ID
10
11 from mstrio.users_and_groups import (
12     create_users_from_csv, list_user_groups, list_users, User, UserGroup
13 )
14
15 from mstrio.connection import get_connection
16
17 # Define a variable which can be later used in a script
18 PROJECT_NAME = $project_name # Project to connect to
19
20 conn = get_connection(workstationData, project_name=PROJECT_NAME)
21
22 # Define variables which can be later used in a script
23 USERNAME_1 = $username_1
24 FULLNAME_1 = $full_name_1
25 USERNAME_2 = $username_2
26 FULLNAME_2 = $full_name_2
27 USERNAME_3 = $username_3
28 FULLNAME_3 = $full_name_3
29 USERNAME_4 = $username_4
30 FULLNAME_4 = $full_name_4
31 USERNAME_5 = $username_5
32 FULLNAME_5 = $full_name_5
33
34 # Note: To create user with no password you must set minimum password length as
35 # 0 in environment security settings
36 # create multiple users
37 users_array = [
38     {
```

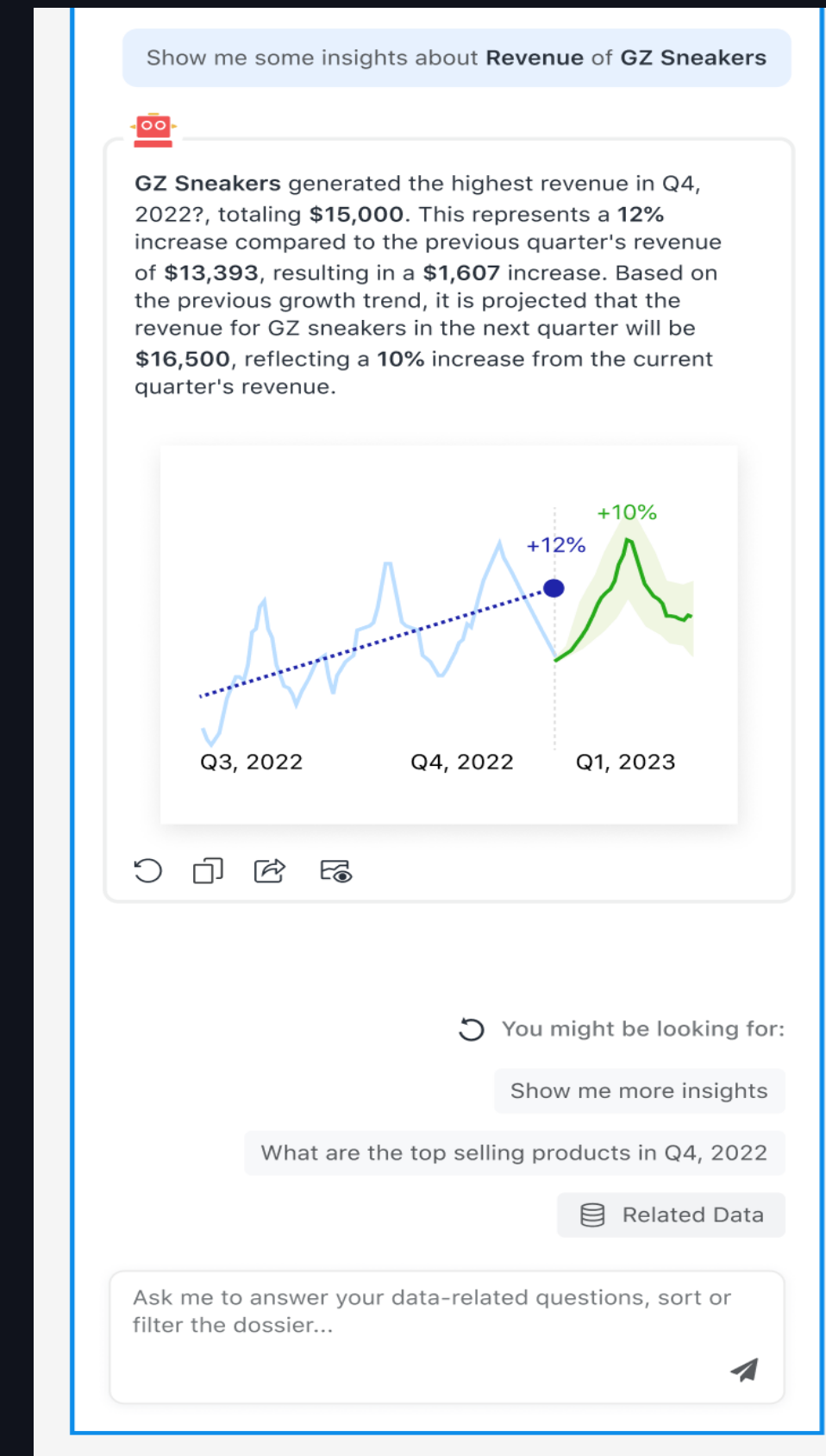
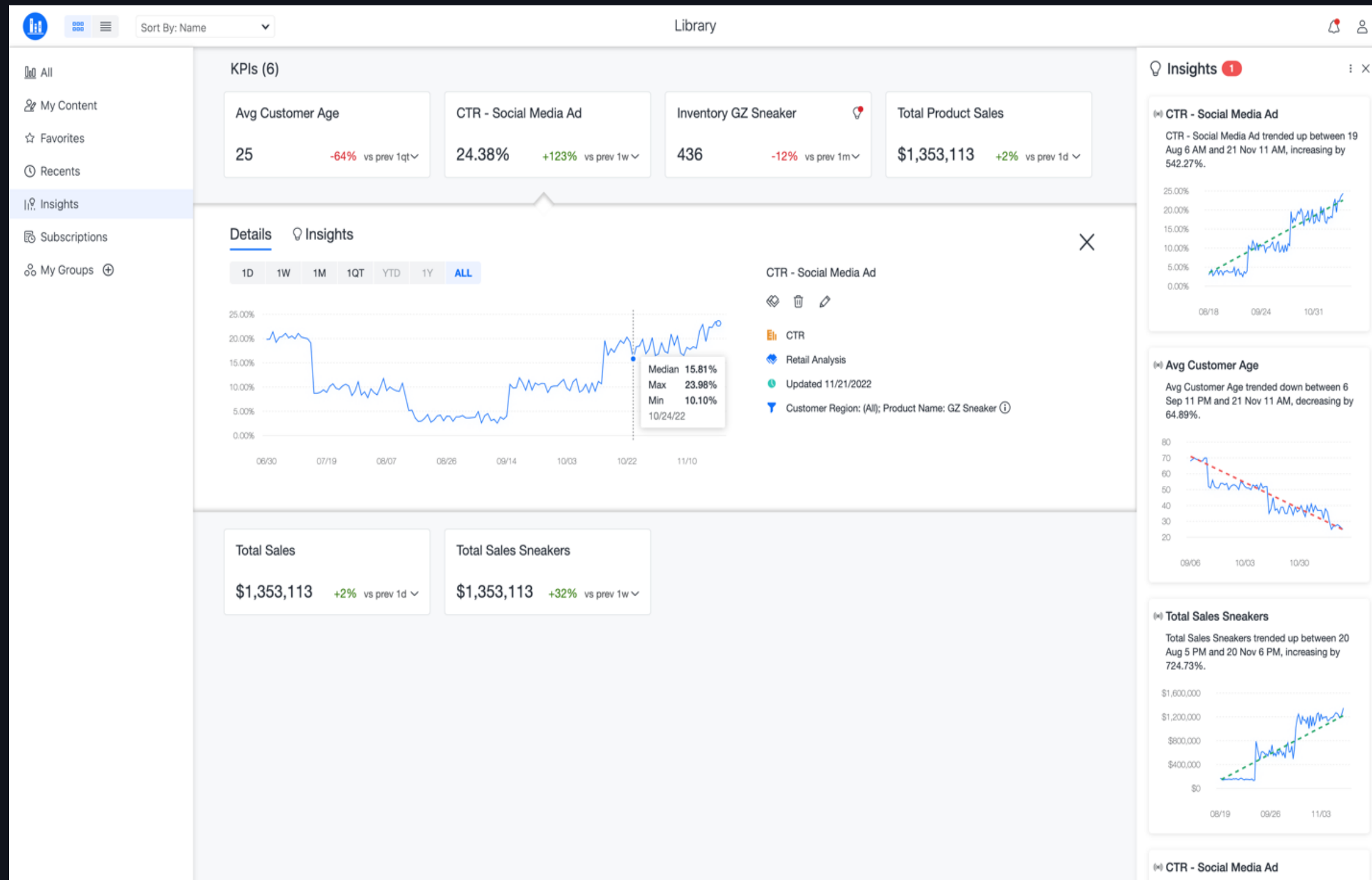
# Enhancing BI Workstreams for Business Users



Deeper Insights

**Automated Insights:** With *MicroStrategy Insights*, it's now easy to track data points, runs advanced models to spot outliers and trends to deliver useful insights

**User-Prompted Insights:** Leverage Generative AI to help deliver deeper insights, enabling users to ask questions about their data views and receive responses in easy-to-understand natural language.







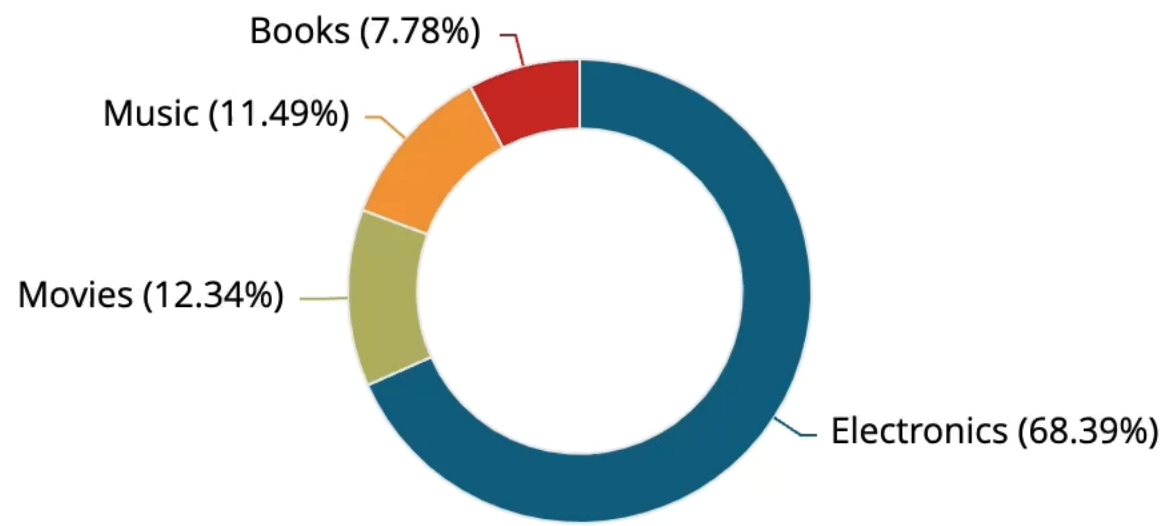
Released: June 2023 (Preview)

# Data Whisperer

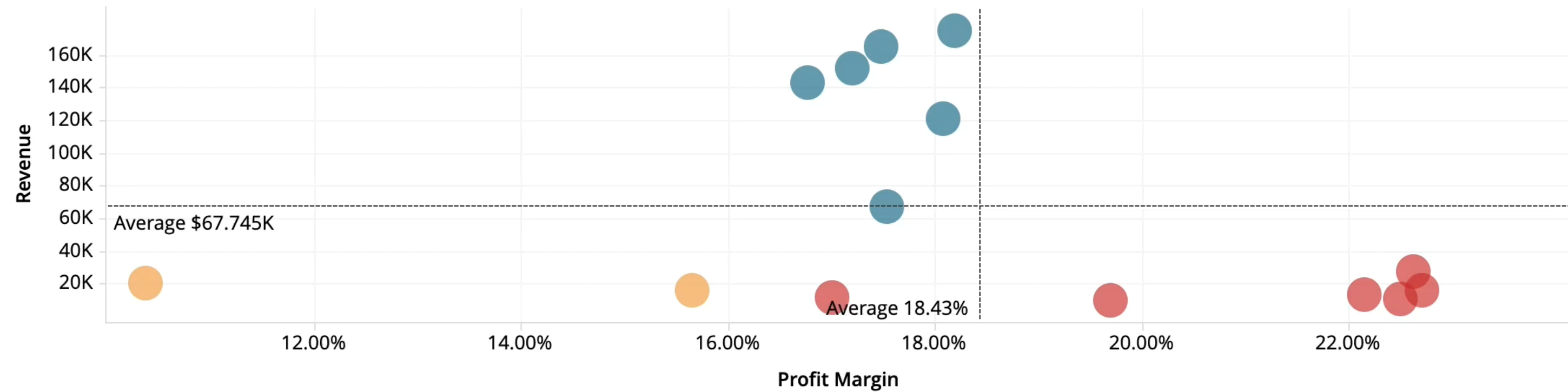


<p>QTD REVENUE</p> <p><b>\$136.767K</b></p> <p><i>vs. Last Quarter: \$106.477K (+28.4%)</i></p>	<p>QTD PROFIT</p> <p><b>\$18.718K</b></p> <p><i>vs. Last Quarter: \$15.518K (+20.6%)</i></p>	<p>QTD PROFIT MARGIN</p> <p><b>13.69%</b></p> <p><i>vs. Last Quarter: 14.57% (-6.1%)</i></p>
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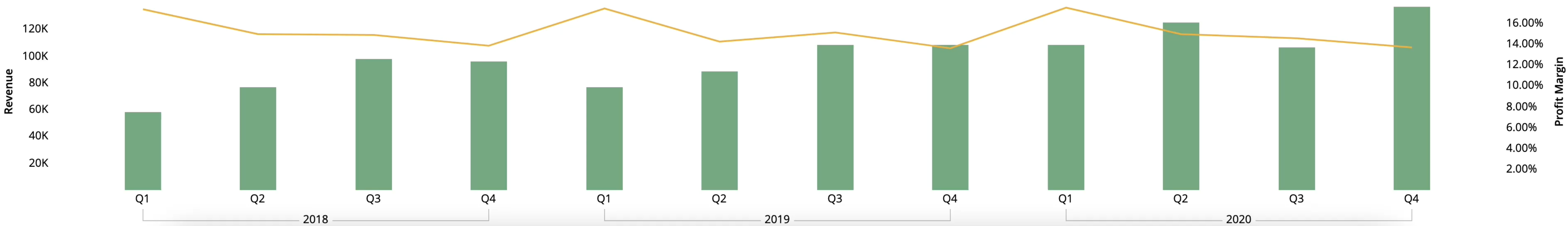
CATEGORY PERFORMANCE



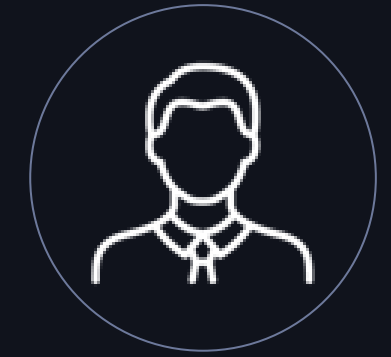
SUBCATEGORY PERFORMANCE



TIME ANALYSIS

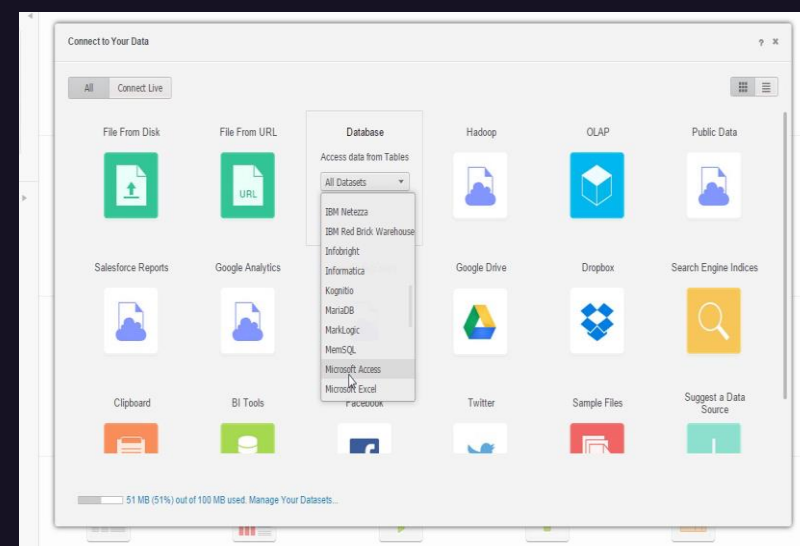


# Enhancing BI Workstream for Analysts

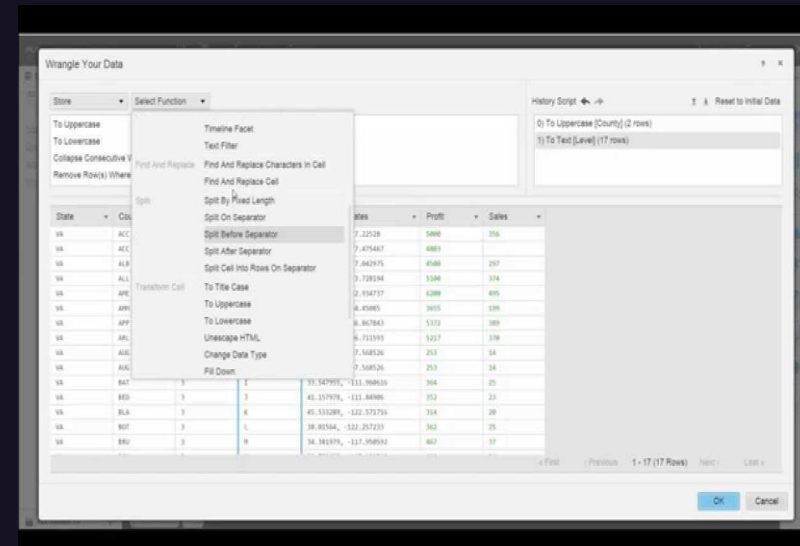


Advance data exploration and ease of authoring

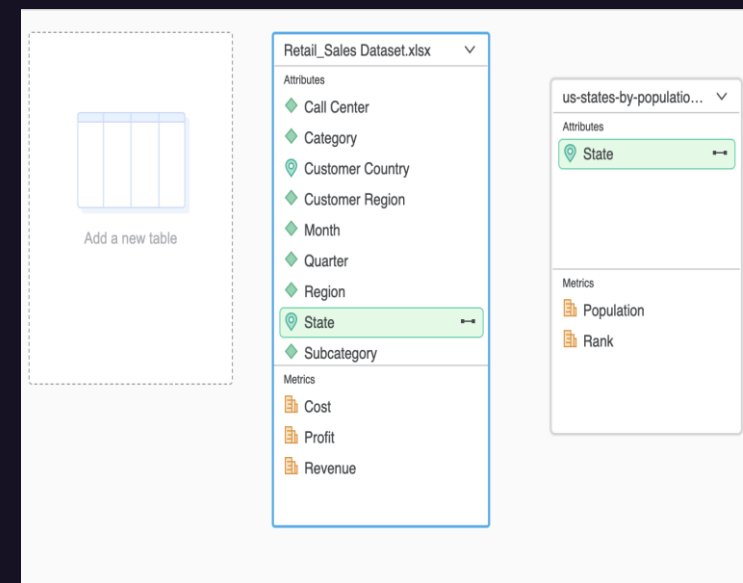
Typical Self-Service / Data Exploration Process in MicroStrategy:



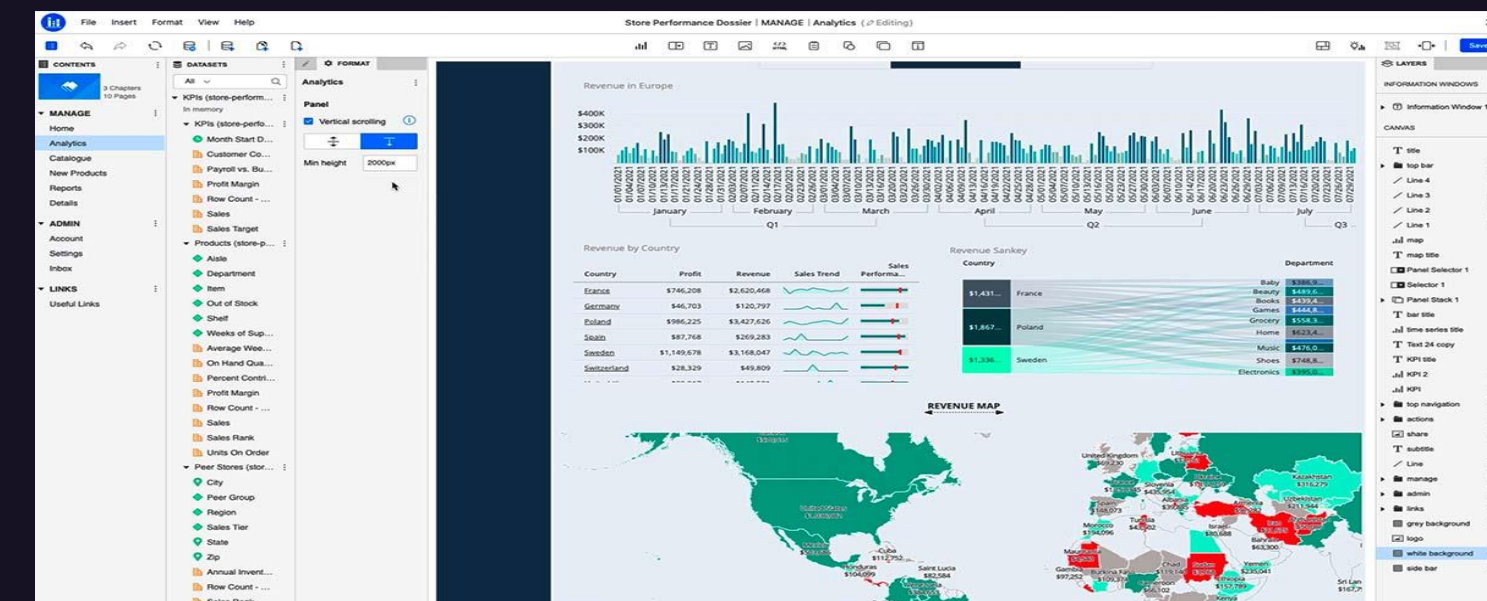
Data Connection



Query & Refine



Model



Dataset

Visualization

**Leverage AI to accelerate time-to-value and improve every aspect of data exploration!**



Project:

# Data Forge

- All
- My Content
- Favorites
- Recents
- Insights
- Subscriptions
- Content Discovery
- Default Groups
  - Sales Analysis
  - Sales Development
- My Groups
  - Daily Reports
  - Weekly Reports

All (14)



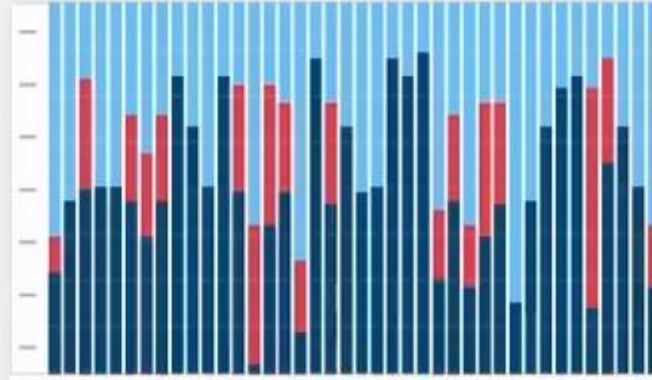
**Tec Vitara Coffee Caculator**  
mstr • Updated 5d ago



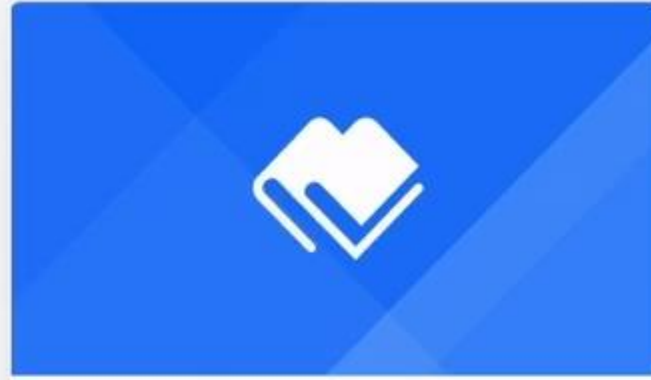
**Tec NLG Sales Performance**  
mstr • Updated 5d ago



**Sales Analysis**  
mstr • Updated 5d ago




**Tec Info Graphic**  
mstr • Updated 5d ago




**Customer Analysis**  
mstr • Updated 5d ago



**What's New**  
mstr • Updated 5d ago




**Tec Art of the Possible**  
mstr • Updated 5d ago



**Retail DC General Store**  
mstr • Updated 5d ago



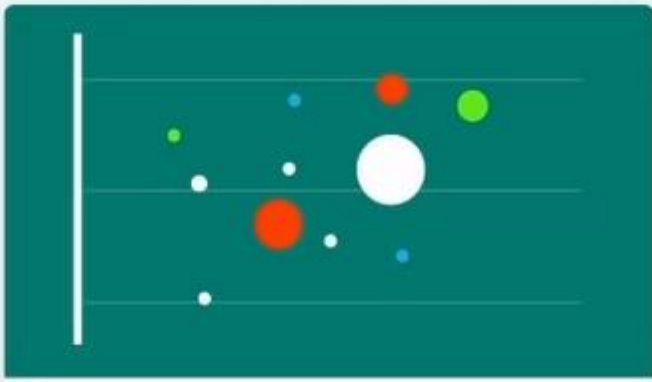
**Regional Sales**  
mstr • Updated 5d ago




**Employee Performance**  
mstr • Updated 5d ago




**Bitcoin Analysis**  
mstr • Updated 5d ago




**Tec Accessibility**  
mstr • Updated 5d ago



**Manufacturing CPG Realtime**  
mstr • Updated 5d ago



**Pharma Representatives Hypern...**  
mstr • Updated 5d ago



**Retail Insights**  
mstr • Updated 5d ago





Released: June 2023 (Preview)

# SQL Scribe

 **Data Catalog**

All ▾

-  Customer Analysis Warehouse
-  Financial Reporting Analysis Ware...
-  Human Resources Analysis Ware...
-  Operational Datamart
-  Sales Analysis
-  Sales and Distribution Analysis W...

 **Schema Tables**

Warehouse Table	Primary Data Source	Secondary Data Sources	Logical Table	
-----------------	---------------------	------------------------	---------------	---



Project:  
**AI Canvas**





FORMAT

Rectangle

Style

Fill 100%

Border

Weight 1

Radius



Position And Size

X Y

20.89% x 0.73%

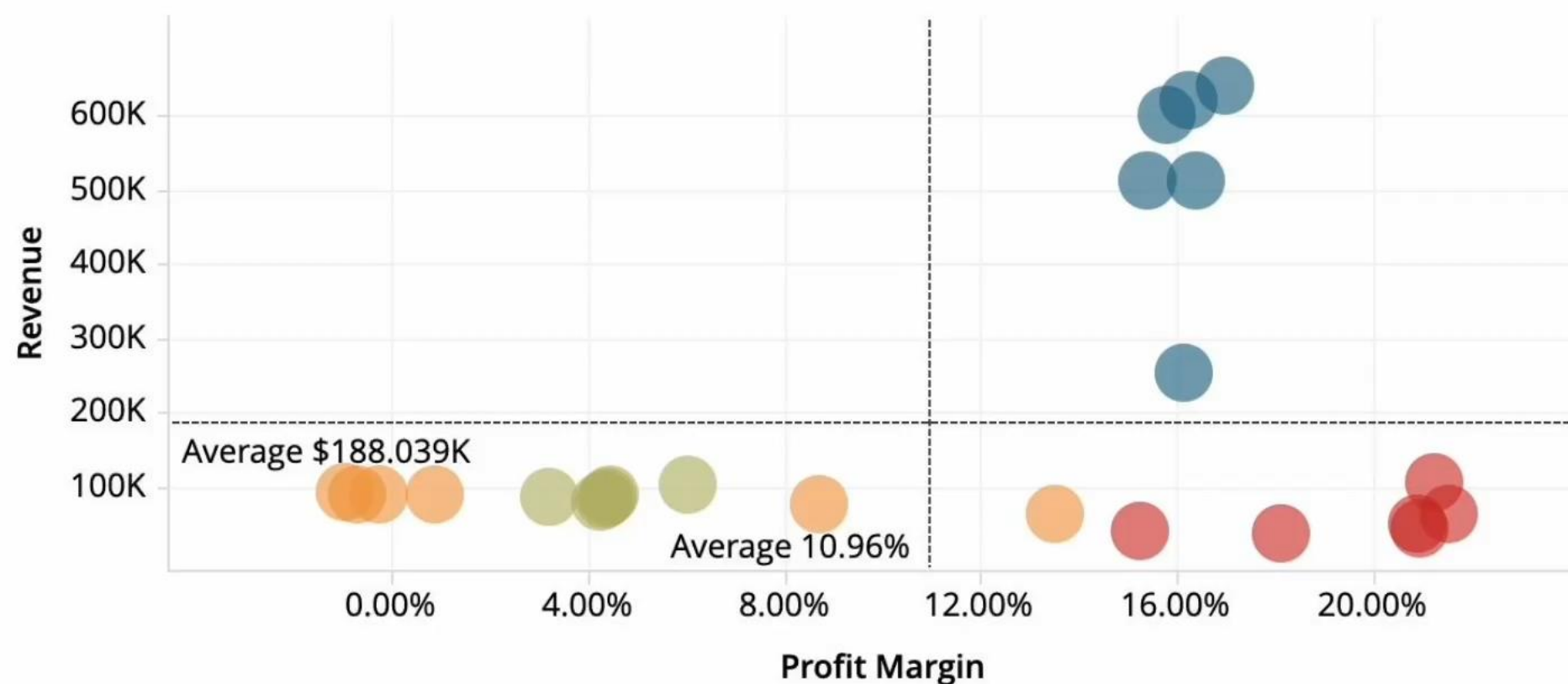
Width Height

79.02% x 17.22%

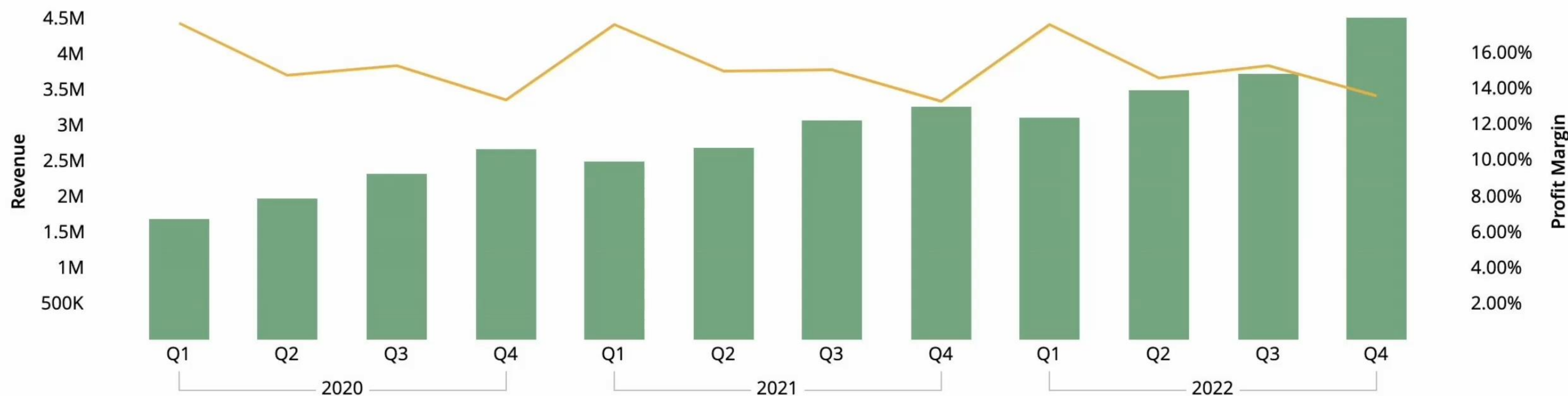


<p><b>QTD REVENUE</b></p> <p><b>\$2.665M</b></p> <p><i>vs. Last Quarter: \$2.314M (+15.1%)</i></p>	<p><b>QTD PROFIT</b></p> <p><b>\$357.607K</b></p> <p><i>vs. Last Quarter: \$354.875K (+0.8%)</i></p>	<p><b>QTD PROFIT MARGIN</b></p> <p><b>13.42%</b></p> <p><i>vs. Last Quarter: 15.33% (-12.5%)</i></p>
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SUBCATEGORY PERFORMANCE



TIME ANALYSIS



Quarter of Year | Month | Revenue | Cost | Profit

AI ASSISTANT

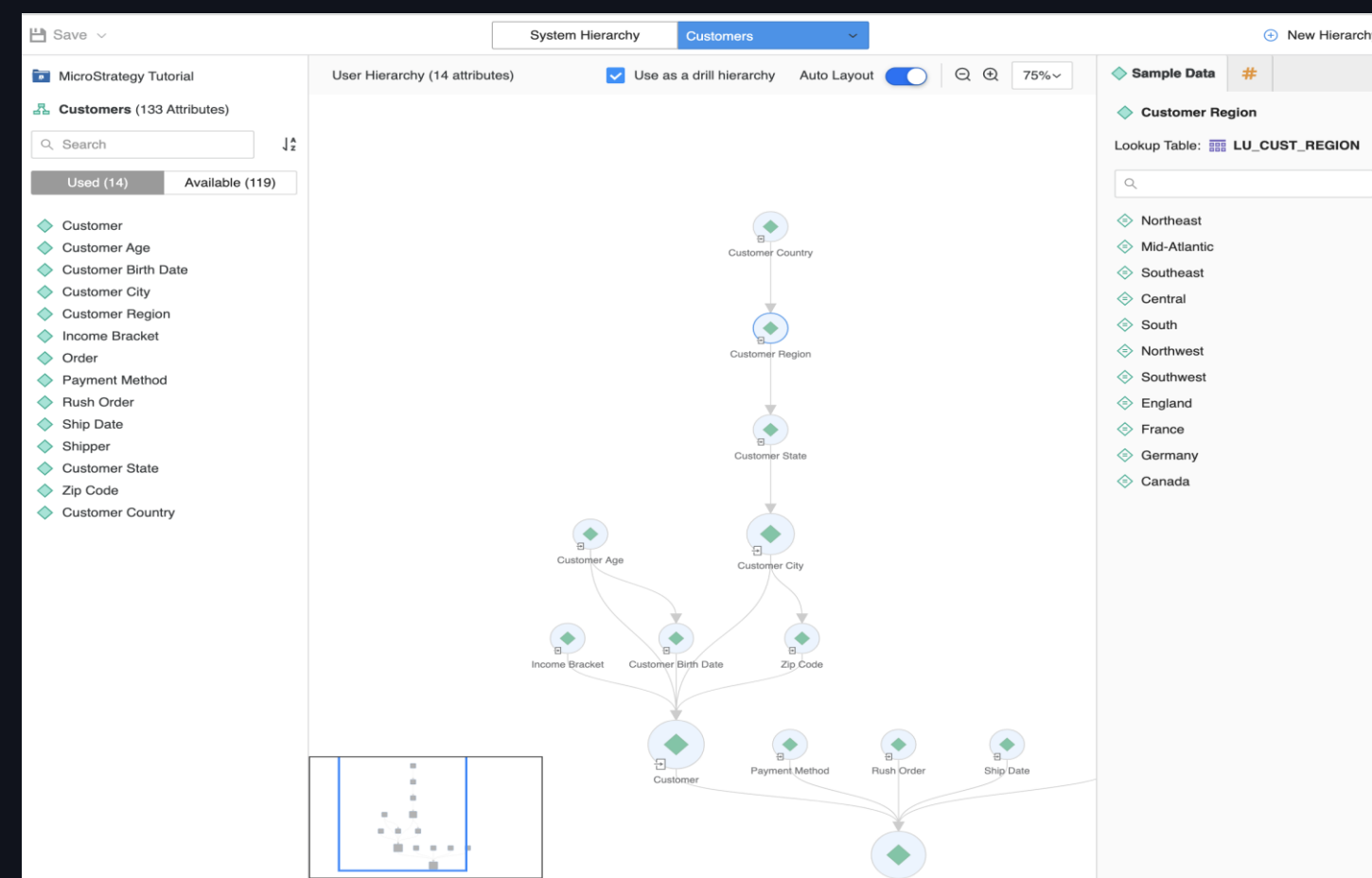
AI Assistant interface with a search bar and a large empty text area for chat interaction.

# Enhancing BI Workstream for Admins/Architects

Efficient platform management and ease of Semantic Graph design



## MicroStrategy ONE





Project:

# Schema Builder

Save ▾



**Data Catalog**



Search

- Customer Analysis Warehouse
- Financial Reporting Analysis Ware...
- Human Resources Analysis Ware...
- Operational Datamart
- Sales Analysis
- Sales and Distribution Analysis W...

**Schema Tables**

Search

Warehouse Table



Primary Data Source



Secondary Data Sources



Logical Table



# Conclusion



**“Any sufficiently advanced technology is indistinguishable from magic.”**

-Arthur C. Clarke

# Q&A

**Thank you**