

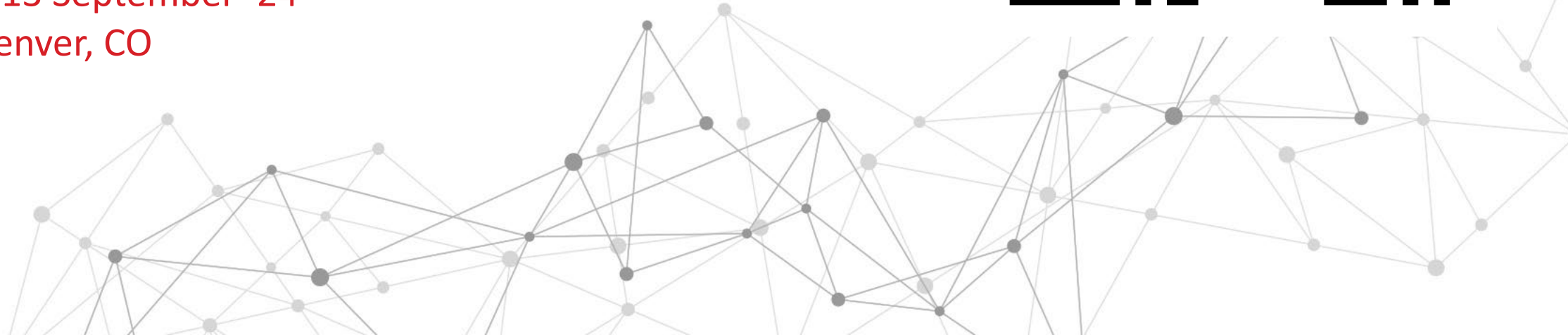
# AI Council Round Table

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Blennemann Family Office  
Heinz@Blennemann.com



9-13 September '24  
Denver, CO





# AI Council

1+

hour

30

slides

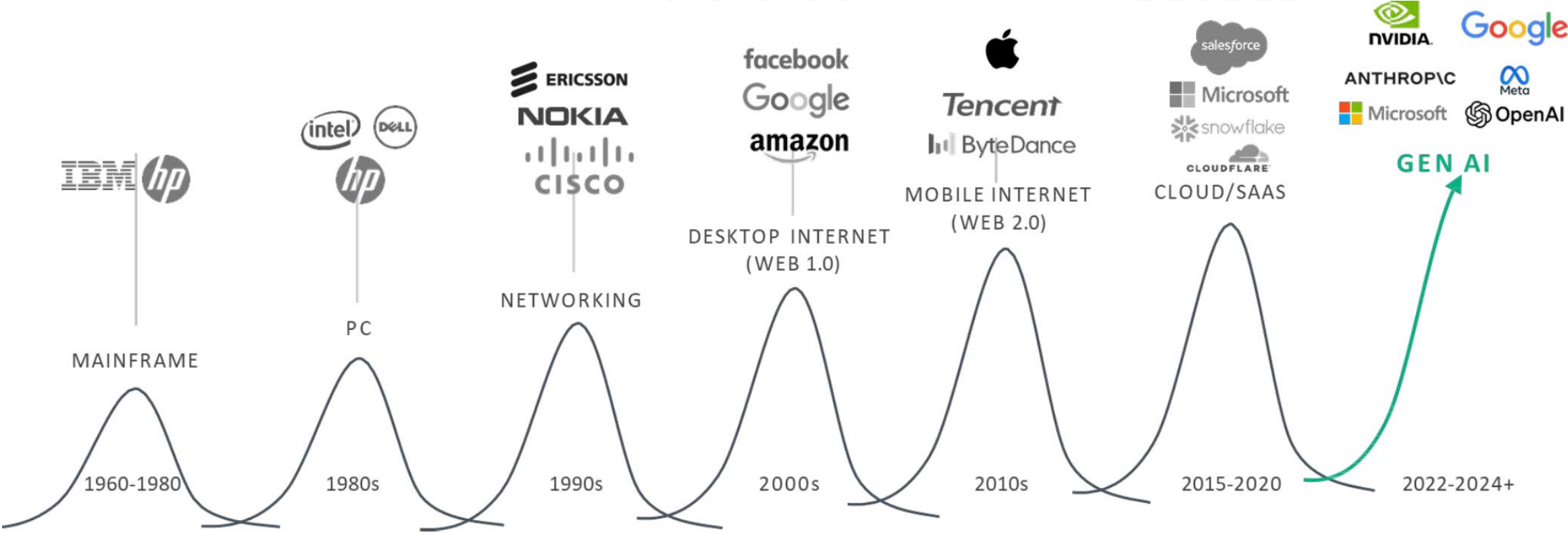
30+

Participants

## PRESENTATION OUTLINE:

- IPI Thematic Session: Best Practises on AI Investing
- Economic Value in Labor & Productivity Boom
- Impact on Industry Profitability
- Technology, Tech Stack & Segmentation
- Investment from Big Tech CVC and VC
- VC Market Data

# Innovation shift to AI centric automation

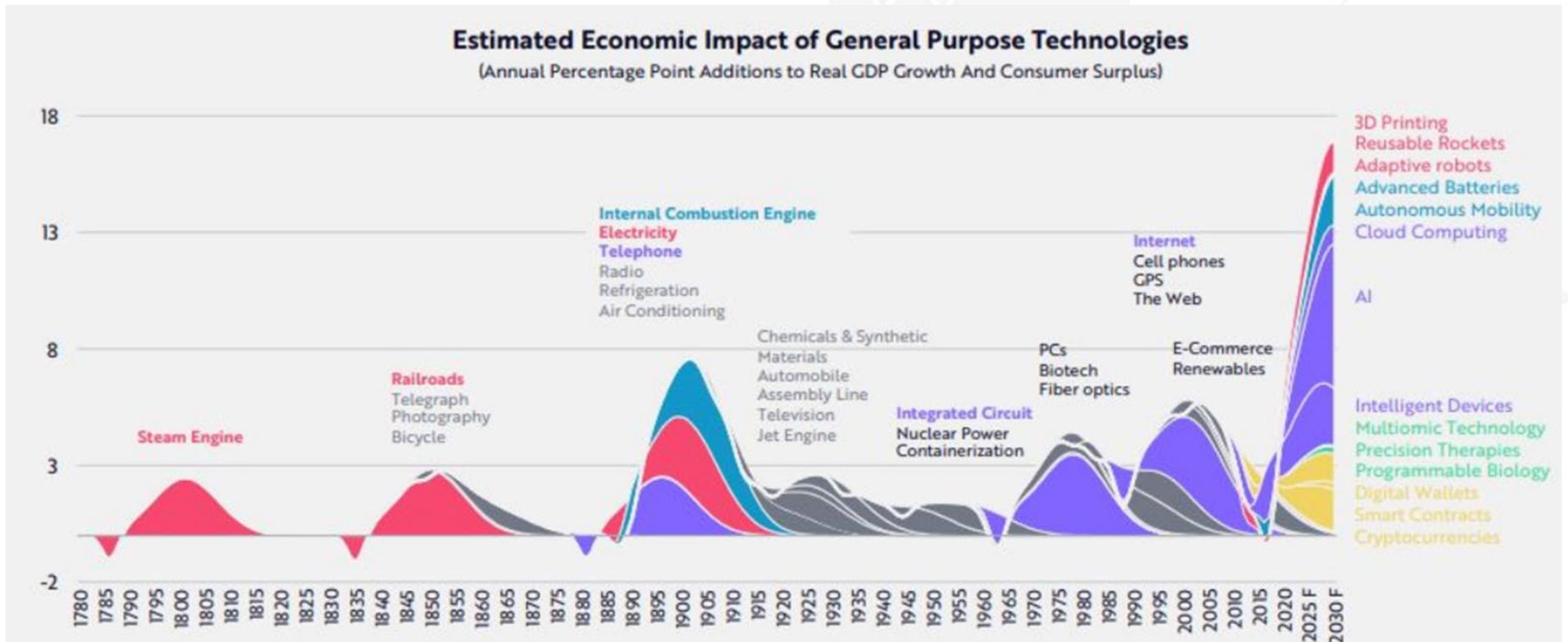


Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Tech Convergence generating historic wave

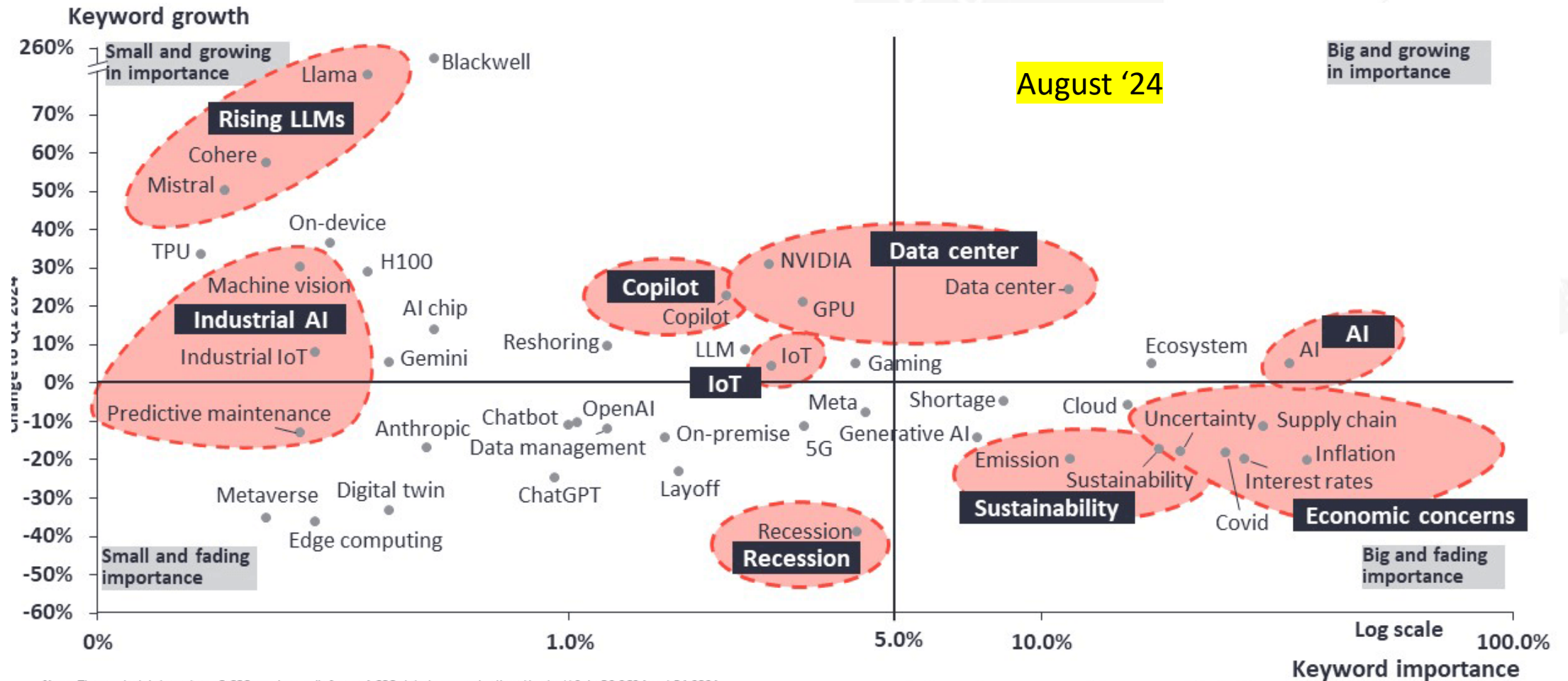


Source:

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Sentiment Analysis from 8,000 Earnings Calls with CEOs



Note: The analysis is based on ~8,000 earnings calls from ~4,000 global companies listed in the U.S. in Q2 2024 and Q1 2024. The mentions of the selected keywords in each call were counted in each quarter.

(Share of companies that mentioned the keyword in Q2 2024 at least once)

# Sentiment Analysis from 8,000 Earnings Calls with CEOs

## Key upcoming themes

- 1. AI.** AI moves to second-most discussed topic. In Q2 2024, discussions regarding AI rose 5% QoQ to 33.7% of earnings calls. This climb moved AI to the #2 spot of most-discussed topics, and as mentioned, it moved it closer to overtaking inflation as the leading topic.
- 2. Data center.** Data center(s) and related topics continue to rise. Riding on AI's wave is data center, which rose 24% to 11.4% of earnings calls. Associated terms like the US-based semiconductor giant NVIDIA and its core offering, GPUs, saw significant growth in Q2 2024 as well.
- 3. LLMs.** Three LLMs on the rise. In Q2 2024, CEOs appeared to turn their attention to three LLM providers or their products:
  - **Meta**, a US-based technology firm, offering its Llama series of LLMs
  - **Cohere**, a Canada-based AI company offering 3 flagship models : Command, Embed, and Rerank
  - **Mistral AI**, a France-based AI company offering 3 models: Mistral 7B, Mixtral 8x7B, and Mixtral 8x22B.

## Declining themes

- 1. Economic concerns.** Across the board, discussions related to economic concerns declined in Q2 2024:
  - Inflation: Down 20.3% QoQ to 36.6% of earnings calls
  - Supply Chain: Down 11.4% QoQ to 29.6% of earnings calls
  - Interest Rates: Down 20% QoQ to 27% of earnings calls
  - Uncertainty: Down 18% QoQ to 19.8% of earnings calls

In mid-June 2024, the US Federal Reserve board met to decide on an anticipated interest rate drop; however, it chose to keep the interest rate at 5.25%–5.5%—the same level since July 2023.
- 1. Sustainability.** In Q2, it slid 17.3% QoQ to 17.8% of earnings calls, as did a related term, emissions, which decreased 20% QoQ to 11.6%. Overall, sustainability-related topics are not growing in importance and appear to be trending downward.
- 2. Recession.** In Q2 2024, of the tracked keywords, recession had the biggest decline in mentions, dropping 39% QoQ to 4% of earnings calls. Since Q2 2023, recession has been a declining topic, eventually separating from its related economic concerns by a wide margin.

Source: IOT Analytics

# Emergence of tough questions



ARTIFICIAL INTELLIGENCE

## Will the \$1 trillion of generative AI investment pay off?

August 5, 2024 Share

ARTIFICIAL INTELLIGENCE

## AI is poised to drive 160% increase in data center power demand

May 14, 2024 Share

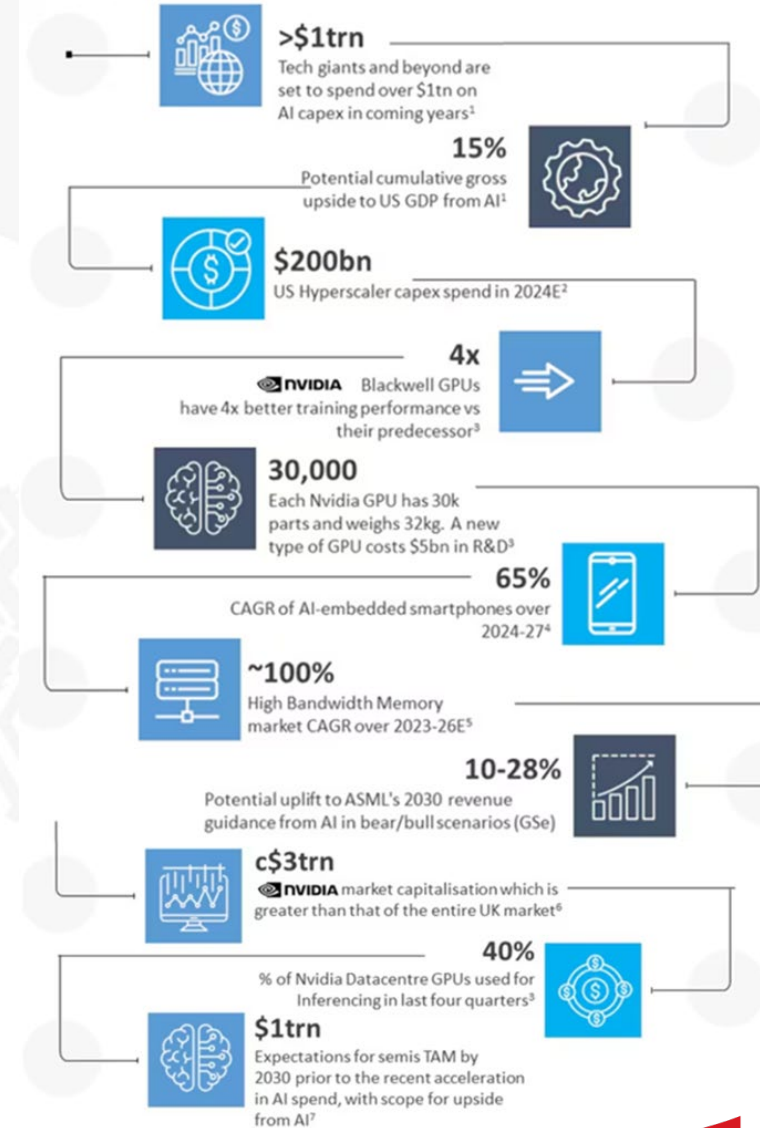
Source: Goldman Sachs

ARTIFICIAL INTELLIGENCE

## AI may start to boost US GDP in 2027

November 7, 2023 Share

### AI in numbers



# Value creation across industries

## AI's potential annual impact across sectors

\$ in billions



Source: McKinsey: Economic Potential of Generative AI – June 2023

AI technologies and techniques have the potential to create between **\$3.5-\$5.8 trillion** in annual value across various sectors



# Two lens to view Gen AI impact

## Lens 1: Targeted Uses Cases for Gen AI

- Definition: Applying generative AI to specific business “use cases” to biz challenges to achieve value outcomes.
- Example: In marketing, using generative AI to create personalized emails, leading to reduced costs and increased revenue through high-quality content at scale.
- Impact: Potential to unlock **\$2.6 to \$4.4 trillion** annually across 16 business functions, enhancing the \$11.0 to \$17.7 trillion from non-generative AI and analytics by 15-40%.

## Lens 2: Labor Productivity on Work Activities:

- Scope: Affects around 2,100 detailed work activities across 850 occupations...communication about operational plans.
- Productivity: Estimates show generative AI could significantly boost labour productivity globally.
- Economic Benefit: Excluding overlaps from use case analysis, the broader application could generate **\$6.1 to \$7.9 trillion** annually in economic benefits.

### Lens 1

Total economic potential of 60-plus organizational use cases<sup>1</sup>

### Lens 2

Labor productivity potential across ~2,100 detailed work activities performed by global workforce

Cost impacts of use cases

Revenue impacts of use cases<sup>1</sup>

<sup>1</sup> For quantitative analysis, revenue impacts were recast as productivity increases on the corresponding spend in order to maintain comparability with cost impacts and not to assume additional growth in any particular market

# Productivity Boom for AI Automation

### Economic Benefits of Generative AI

- Annual Impact: Estimated at \$6.1 to \$7.9 trillion from major use cases and productivity increases among knowledge workers.

### Future of Generative AI

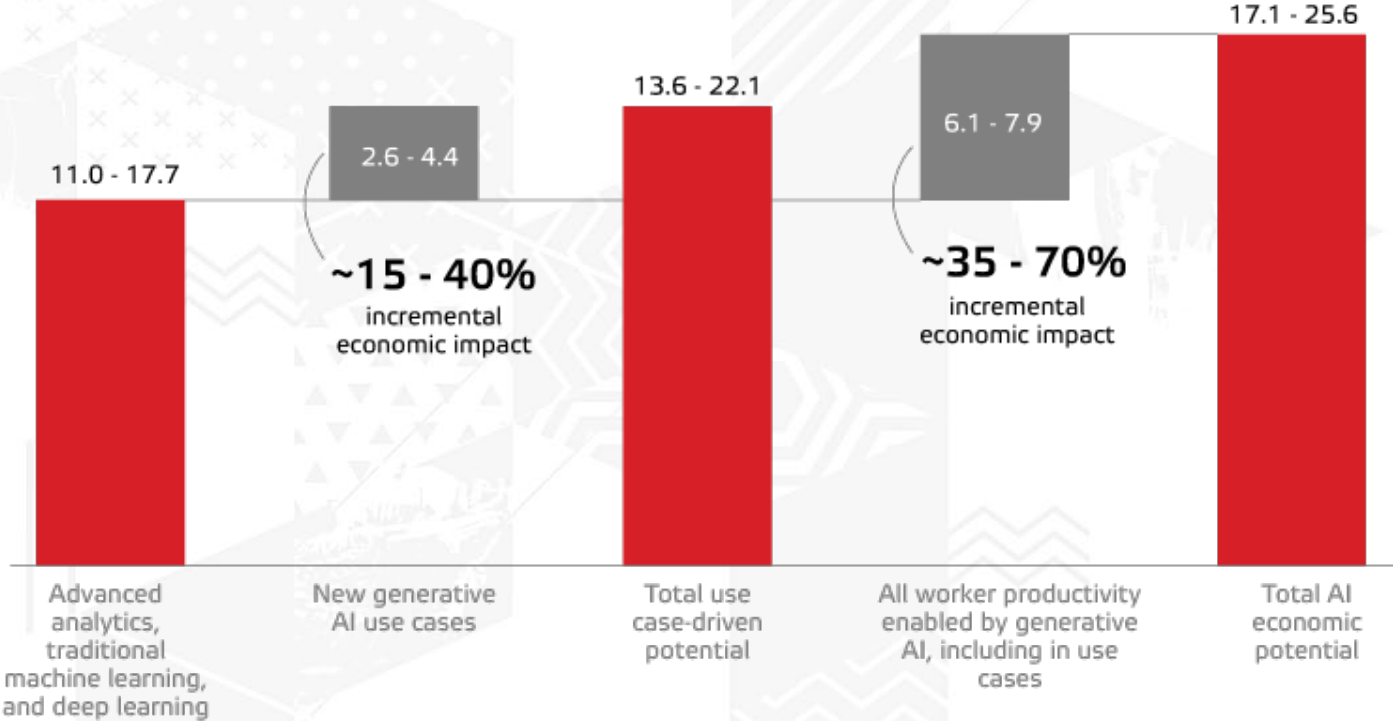
- Potential: Poised to unlock new creative and innovative frontiers.
- Achievements: Already broadening AI's capabilities and potential impacts.

### Context on AI Value

- Dominance: Traditional AI applications still hold the majority of AI's potential value.
- Strengths: Advanced-analytics and machine learning excel in numerical tasks and predictive modelling, continually expanding across industries.

### Generative AI could create additional value potential above what could be unlocked by other AI and analytics

AI's potential impact on the global economy, \$ trillion



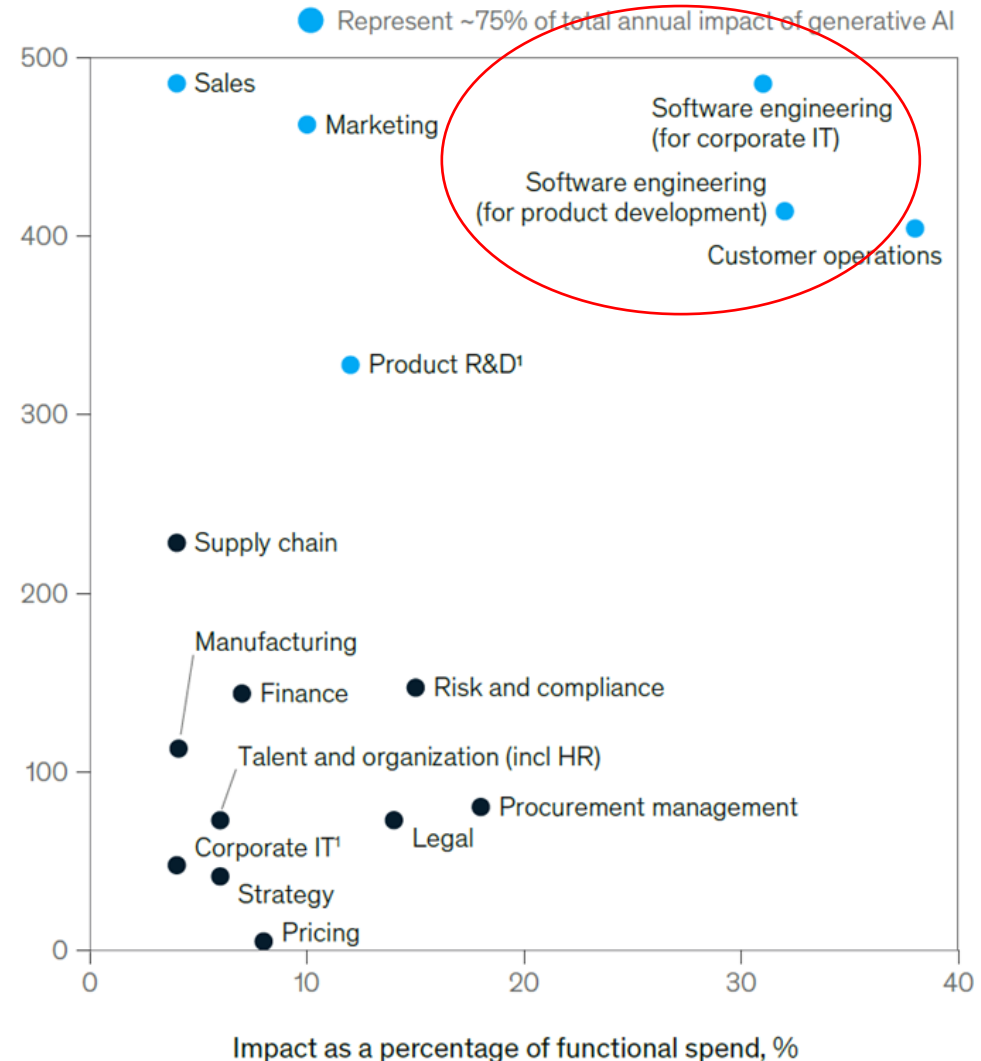
Source: McKinsey

# Market Outlooks

Using generative AI in just a few functions could drive most of the technology's impact across potential corporate use cases.

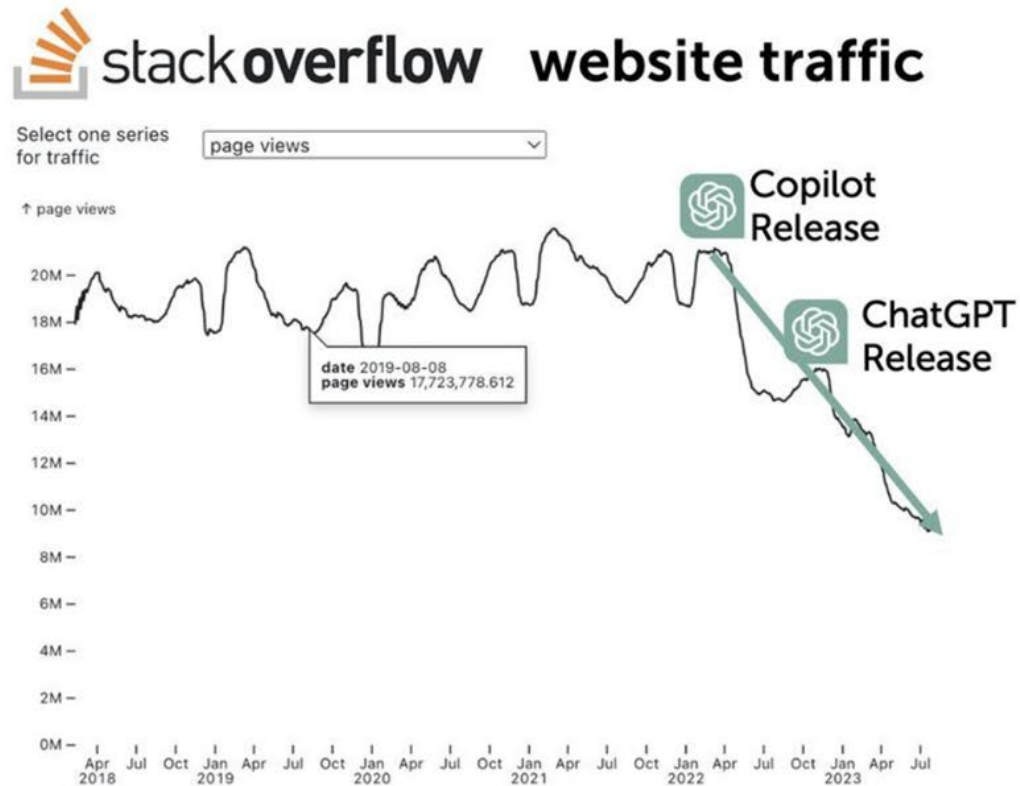
## Generative AI Impact by Function:

- Key Areas: Customer operations, marketing and sales, software engineering, research and development—account for ~75% of generative AI's annual value.
- Lesser Impact: Manufacturing and supply chain functions show reduced potential value compared to prior estimates.
- Reason: Generative AI's focus excludes many numerical and optimization tasks that drove value in traditional AI applications.



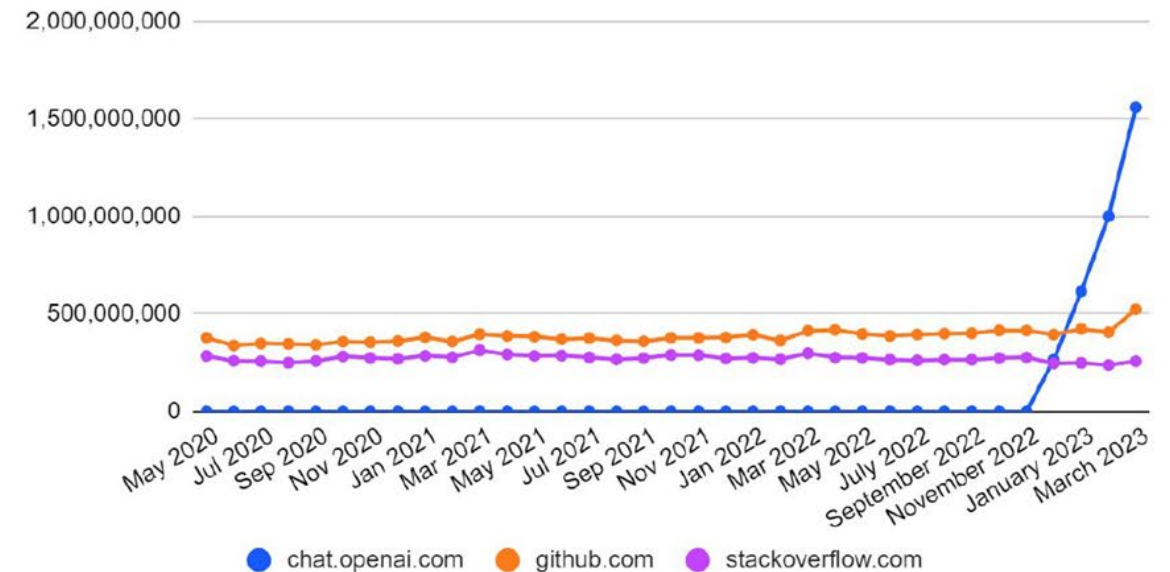
# Software industry is a first bullseye for disruption

- ▶ **Stack Overflow, a (pre-AI) de facto source for developer's to find solutions to their coding problems, placed a ban on responses generated by ChatGPT and has suffered traffic losses as a result of ChatGPT's popularity.**



Stack Overflow vs. ChatGPT and GitHub

Monthly Visits Desktop & Mobile Web Worldwide



Source: AI Indices '23 + McKinsey

# Software Development market is ground zero

## Adoption of AI tools in development tasks, 2023

Source: Stack Overflow Developer Survey, 2023 | Chart: 2024 AI Index report

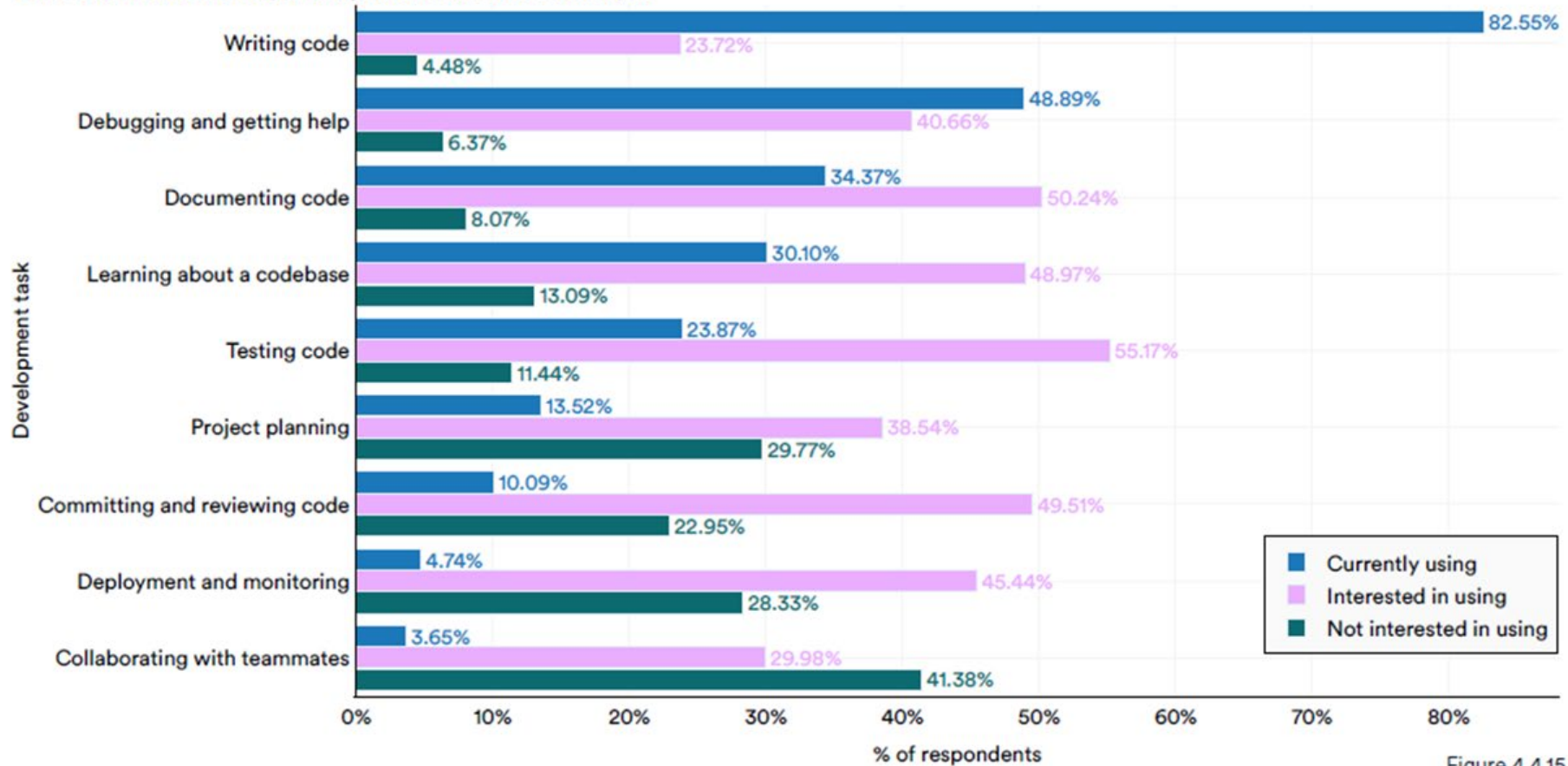


Figure 4.4.15

Source: Stanford

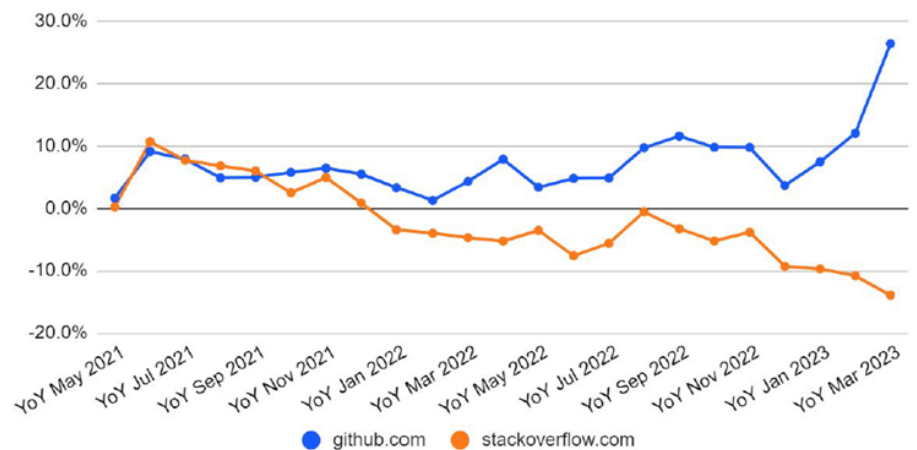
# GitHub CoPilot drives significant productivity gains for developers

► **If it's meant to be, it will be (no matter how long it takes). GitHub has finally launched their coding assistant, CoPilot, to hugely positive reception. The system is trained on billions of lines of code.**

- In Sept 2022, GitHub ran an experiment with 95 professional developers, split them randomly into two groups, and timed how long it took them to write an HTTP server in JavaScript. This found significant productivity gains.
- In June 2023, GitHub reported data from 934,533 CoPilot users. Interestingly, productivity dips a little bit before significantly increasing as Copilot users get acquainted with the tool, and the less experienced users are the ones who benefit the most (~32% productivity gain).

Stack Overflow vs. GitHub

Monthly Visits Desktop & Mobile Web Worldwide YOY

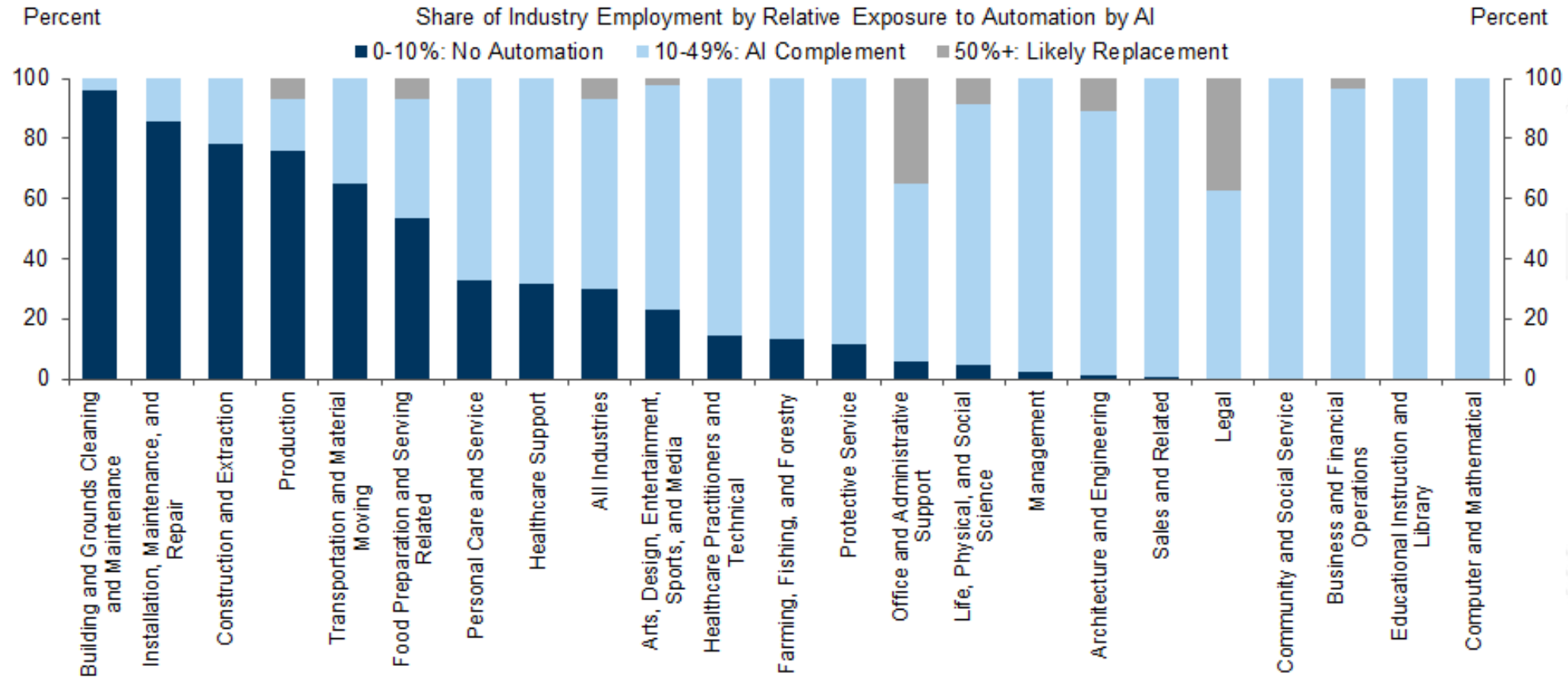


The screenshot shows the GitHub Copilot product page. It features the GitHub Copilot logo, the text "Your AI pair programmer", and a prominent red-bordered box highlighting "8,362,988 installs". Other details include the GitHub logo, "github.com", a 4.5-star rating with "(923)" reviews, and a "Free Trial" button.



Source: McKinsey

# Industry Automation and Replacement Estimates

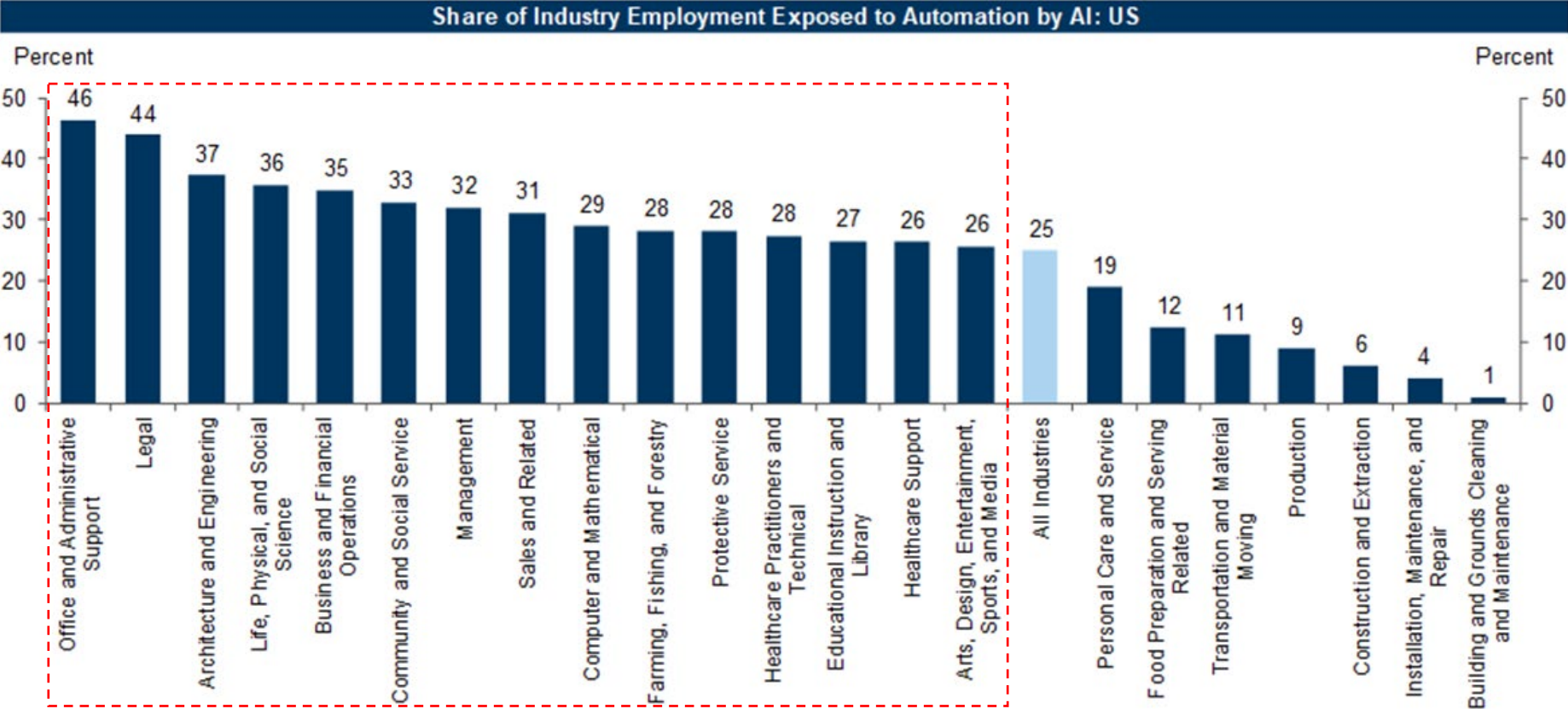


Source: McKinsey

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Industry Labor Exposure



Source: McKinsey

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others







# AI Council

1+

hour

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slides

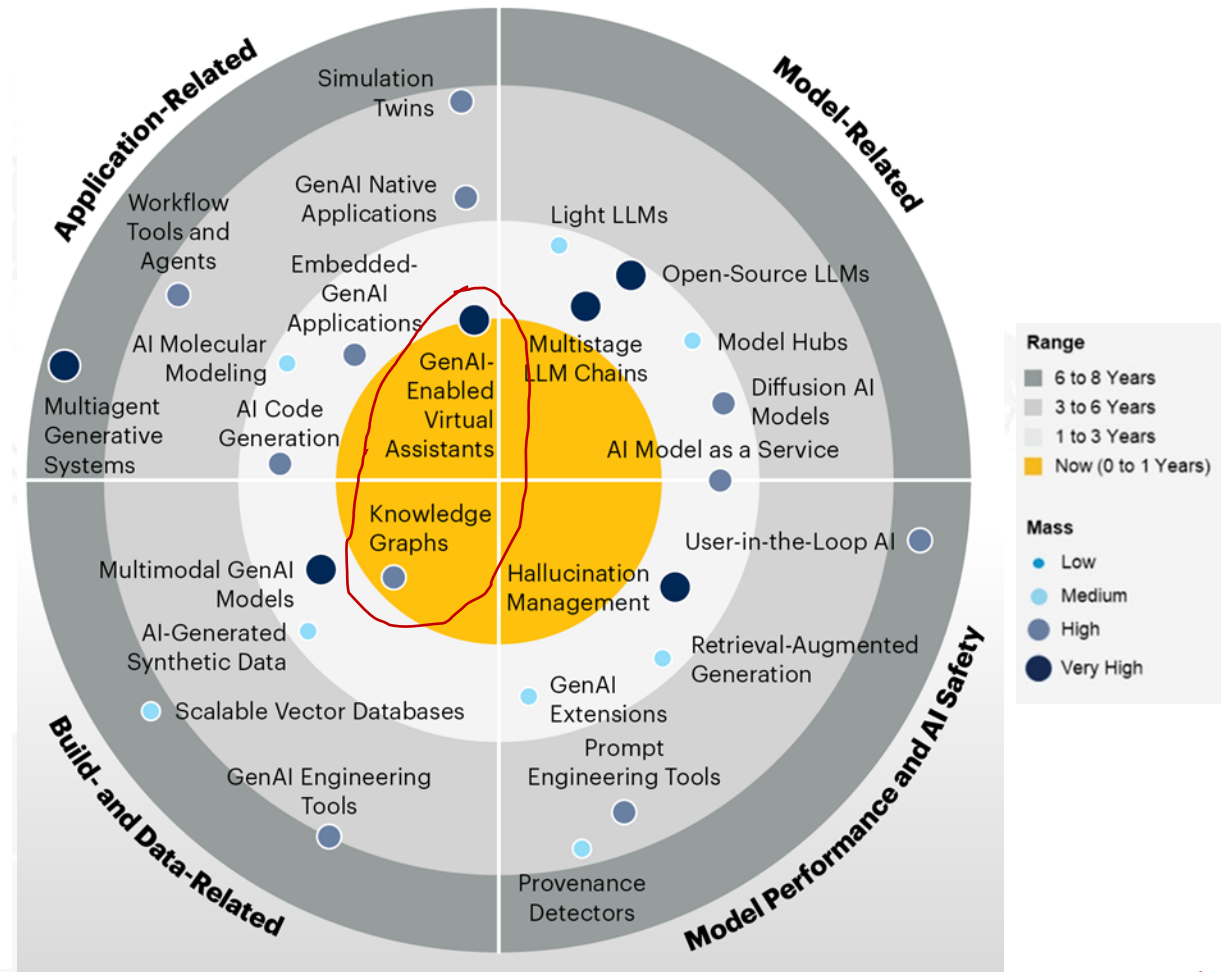
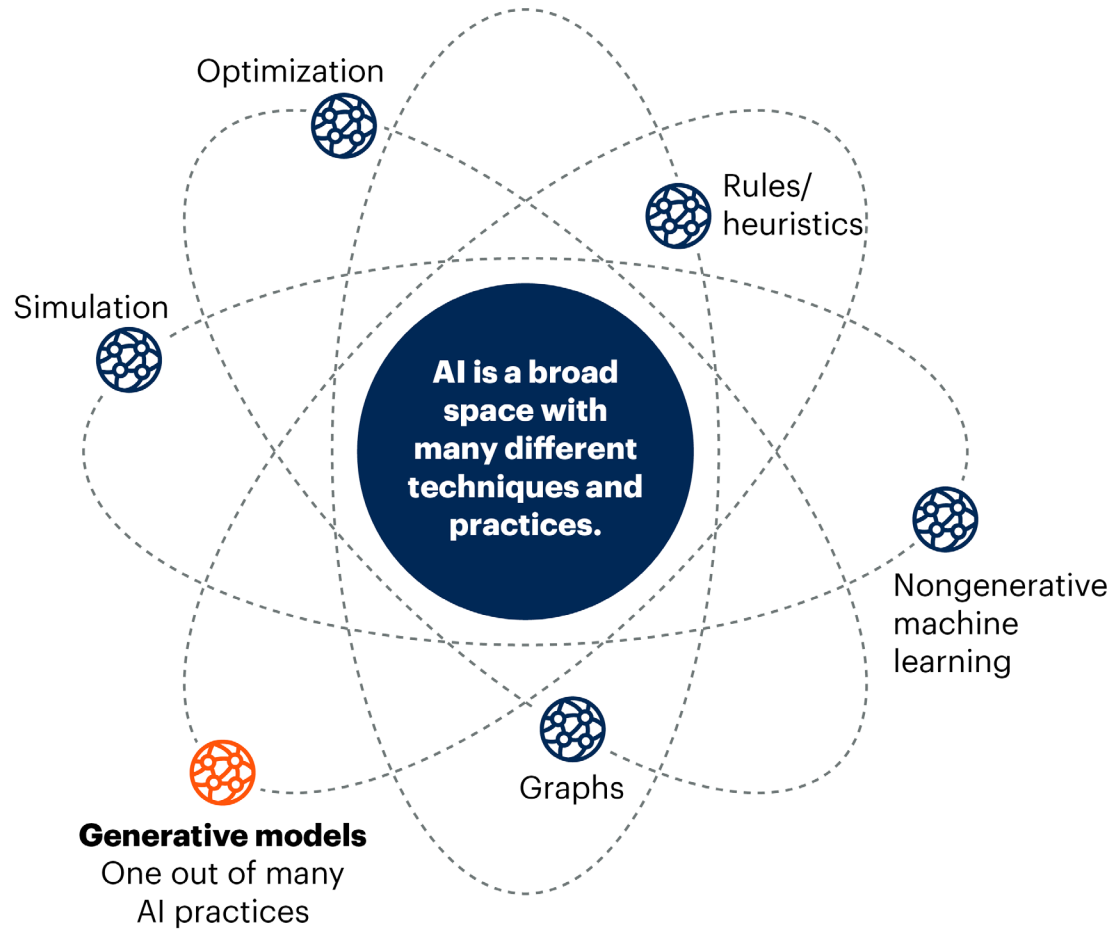
30+

Participants

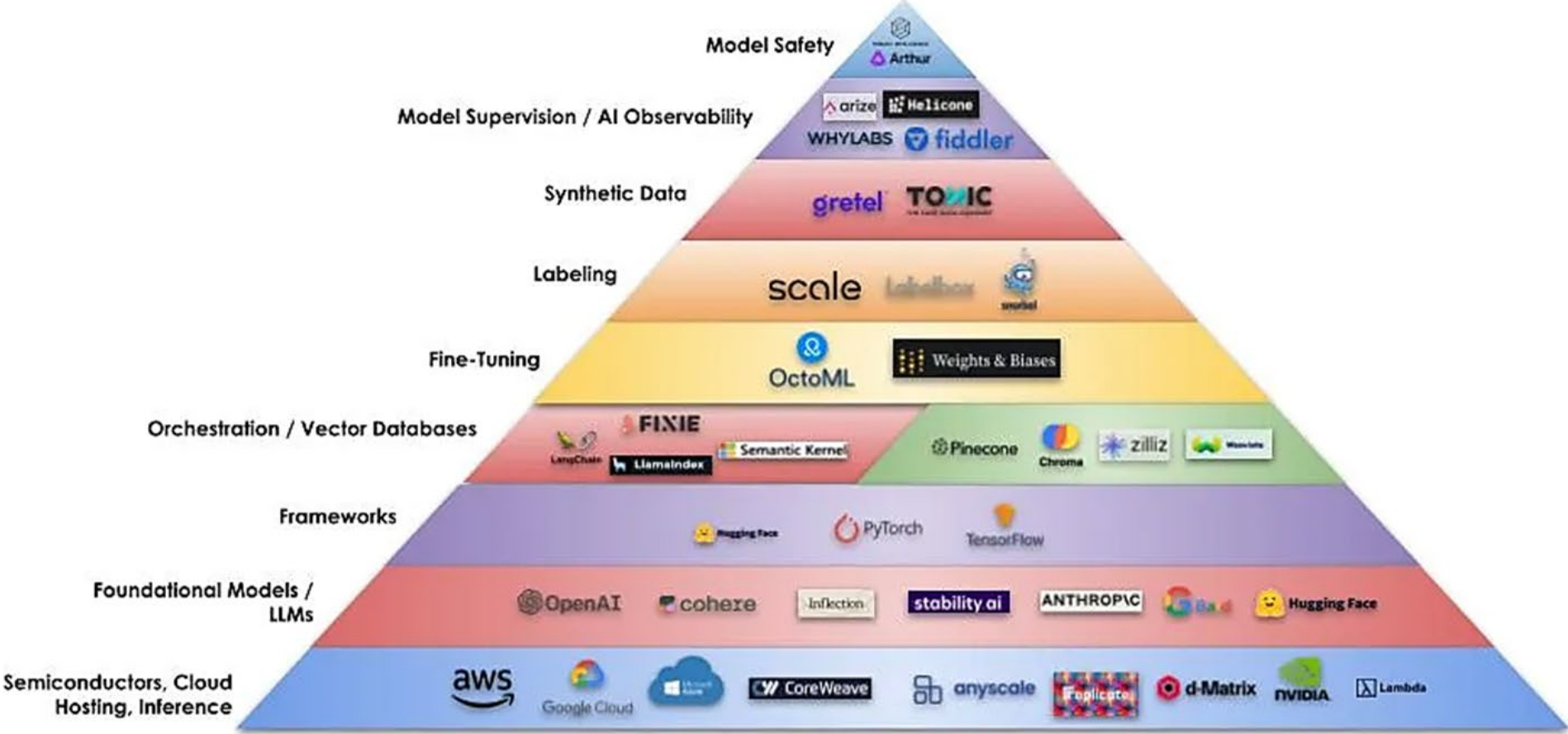
## GENERAL PURPOSE TECHNOLOGY LANDSCAPE

- AI Technology, & Segmentation
- Evolving Tech Stack Changes
- Industry Investment Use Cases
- Open vs Closed Models
- Energy and constraints on Compute

# AI is much broader than Gen AI

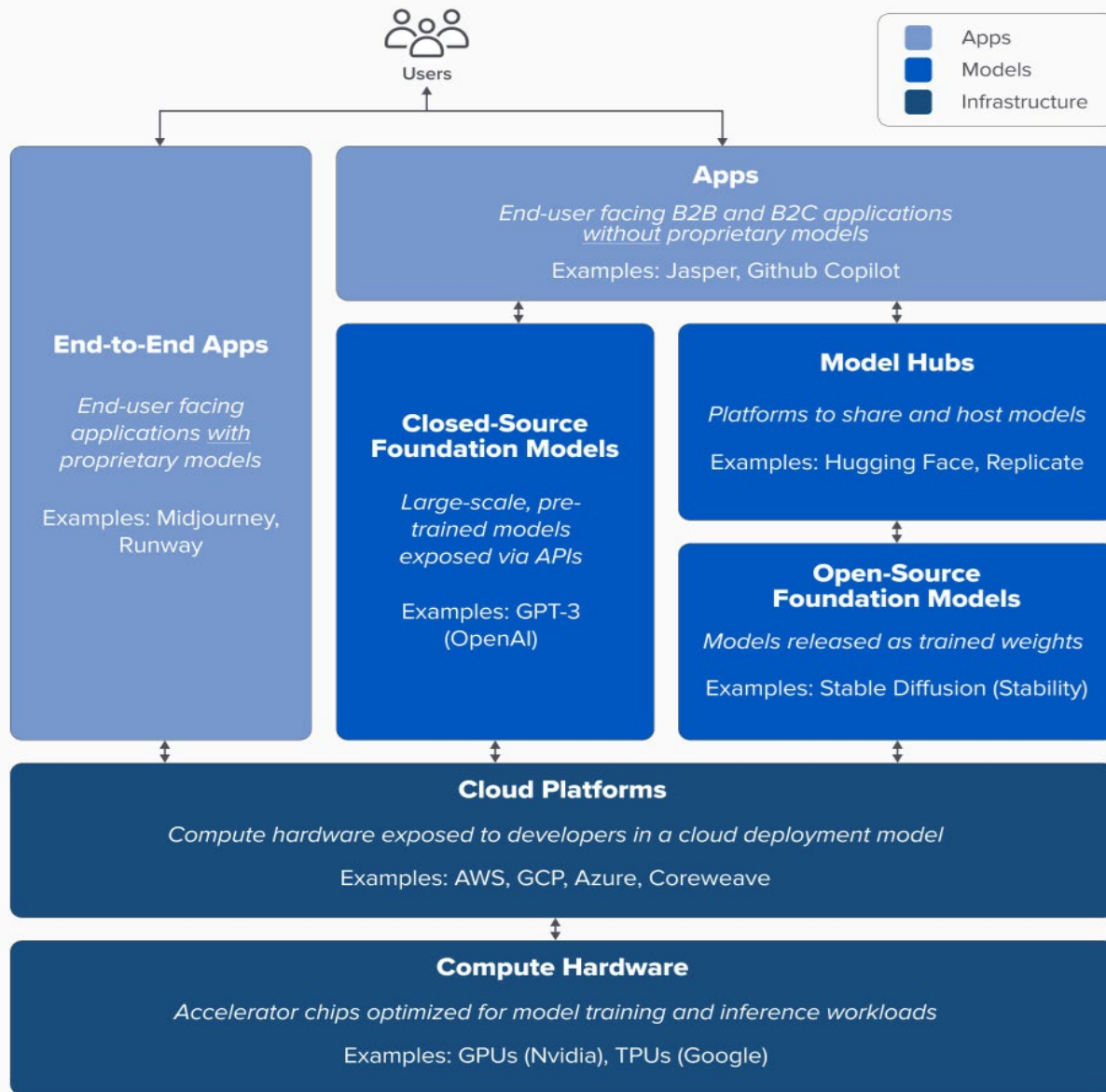


# Building blocks of Gen AI Tech Stack evolution in 23/24



Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# Changing aspects of Tech Stack '24 beyond



### Land Grab:

- 1) Have access to proprietary data
- 2) Create a unique set of proprietary data

### Network Effects:

- 3) Direct Network Effects
- 4) Data Network Effects
- 5) Indirect Network Effects
- 6) Two-Sided Network Effects
- 7) B2B Network Effects
- 8) Learning Effects

### Viral Growth/Distribution:

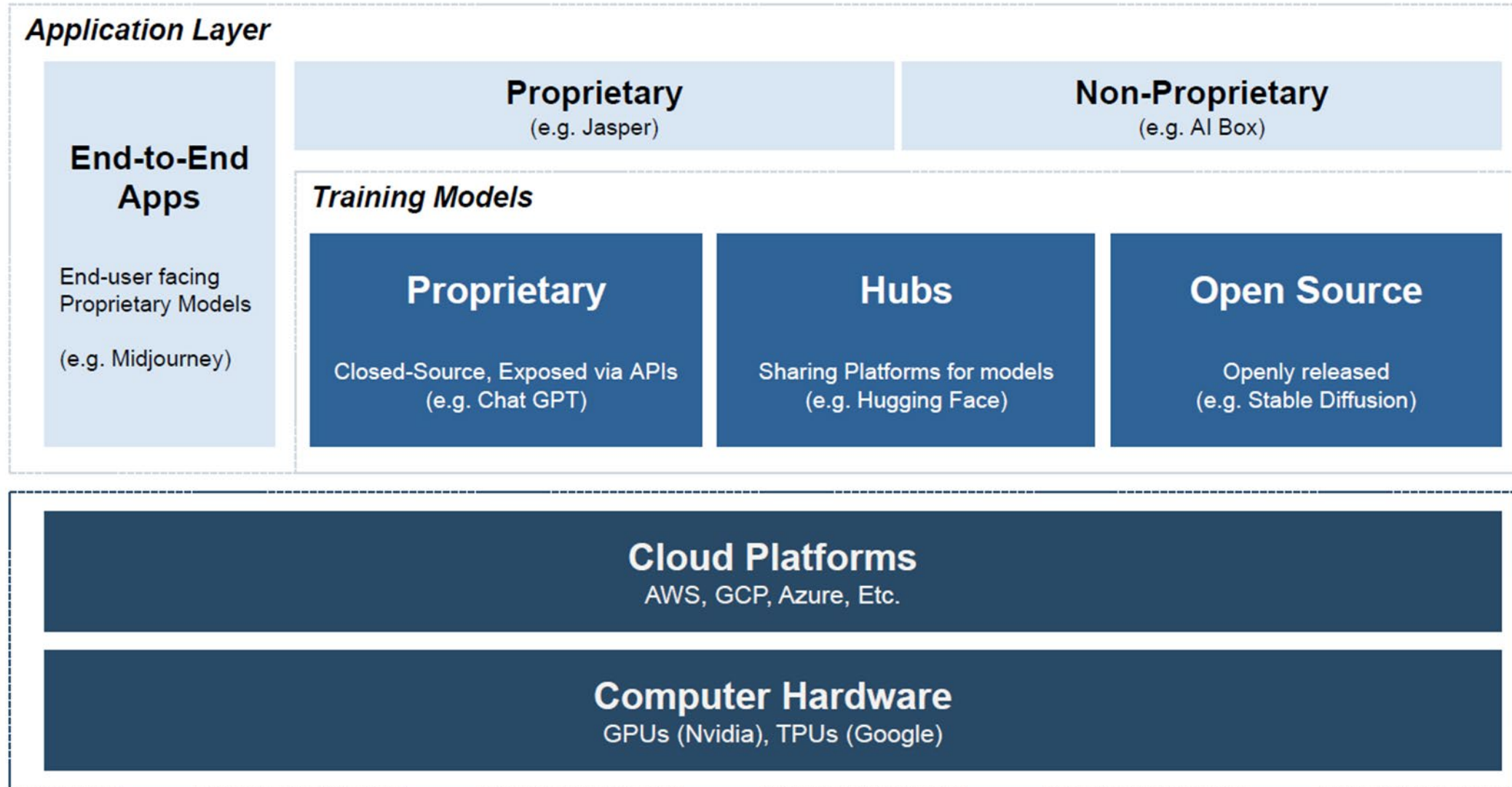
- 9) Social Layer
- 10) Direct Communication
- 11) Freemium / Premium
- 12) Value Chain Spread
- 13) Distribution Partner
- 14) Unforeseen new methods with AI

Differentiating AI Startup Attribute:	Benefit:
1. Have access to unique proprietary data.	Moat = Winner take most
2. Create a unique set of proprietary data.	Moat = Winner take most
3. Leverage user-to-user interactions within the product.	Network Effects
4. Enable the AI to self-learn and improve experience across users.	Network Effects

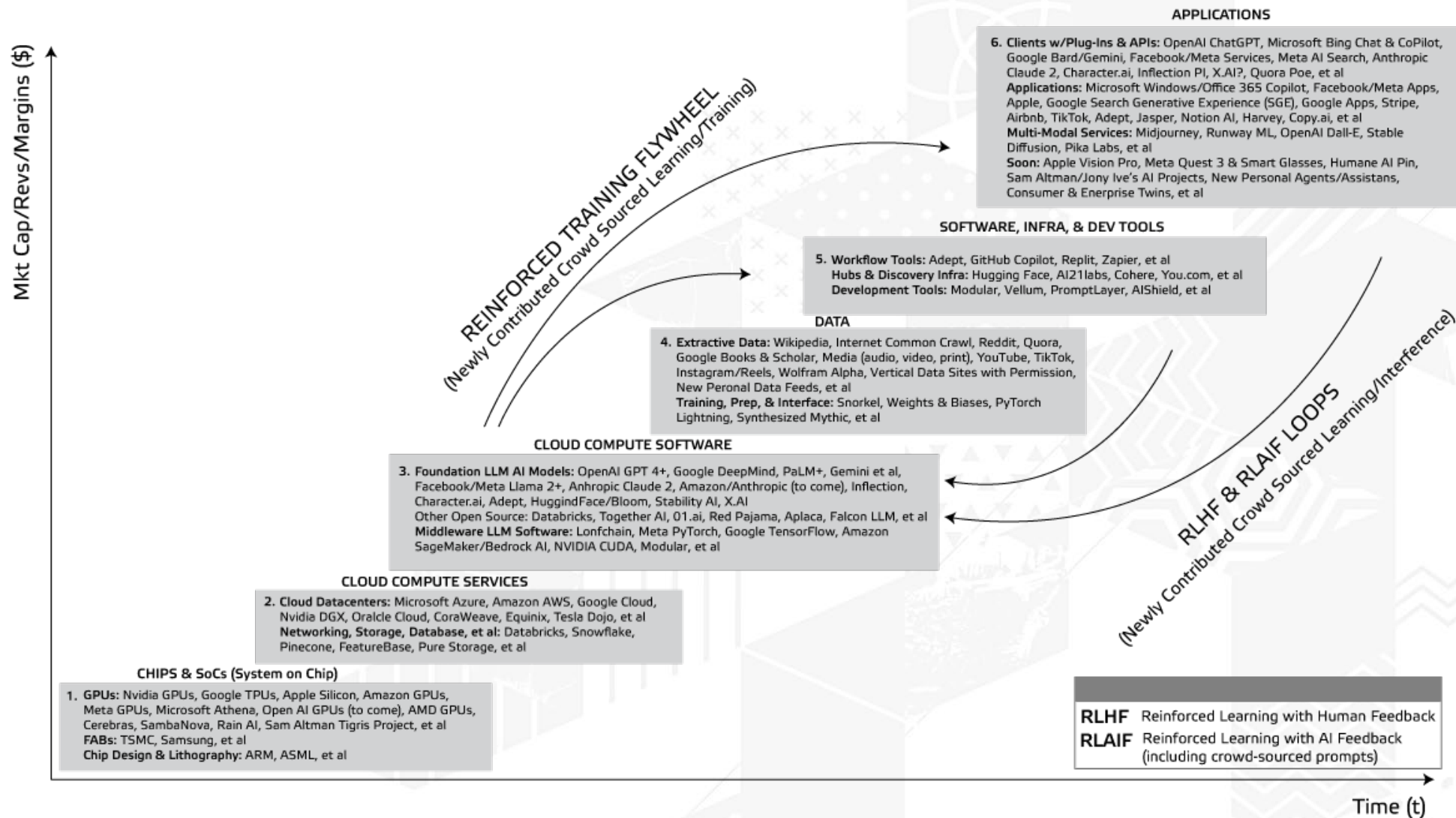
Source:

Associates; Reid Hoffman at Blitzscaling; others

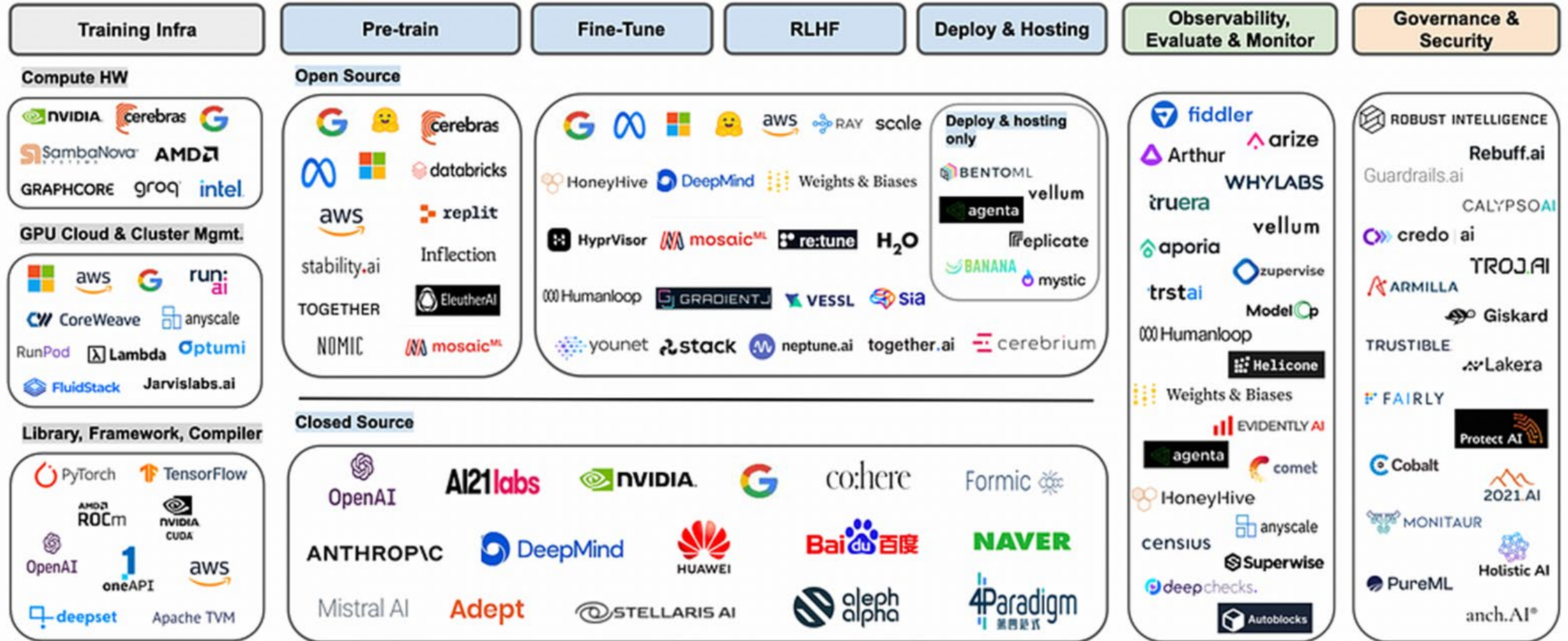
# Competitive Differentiation



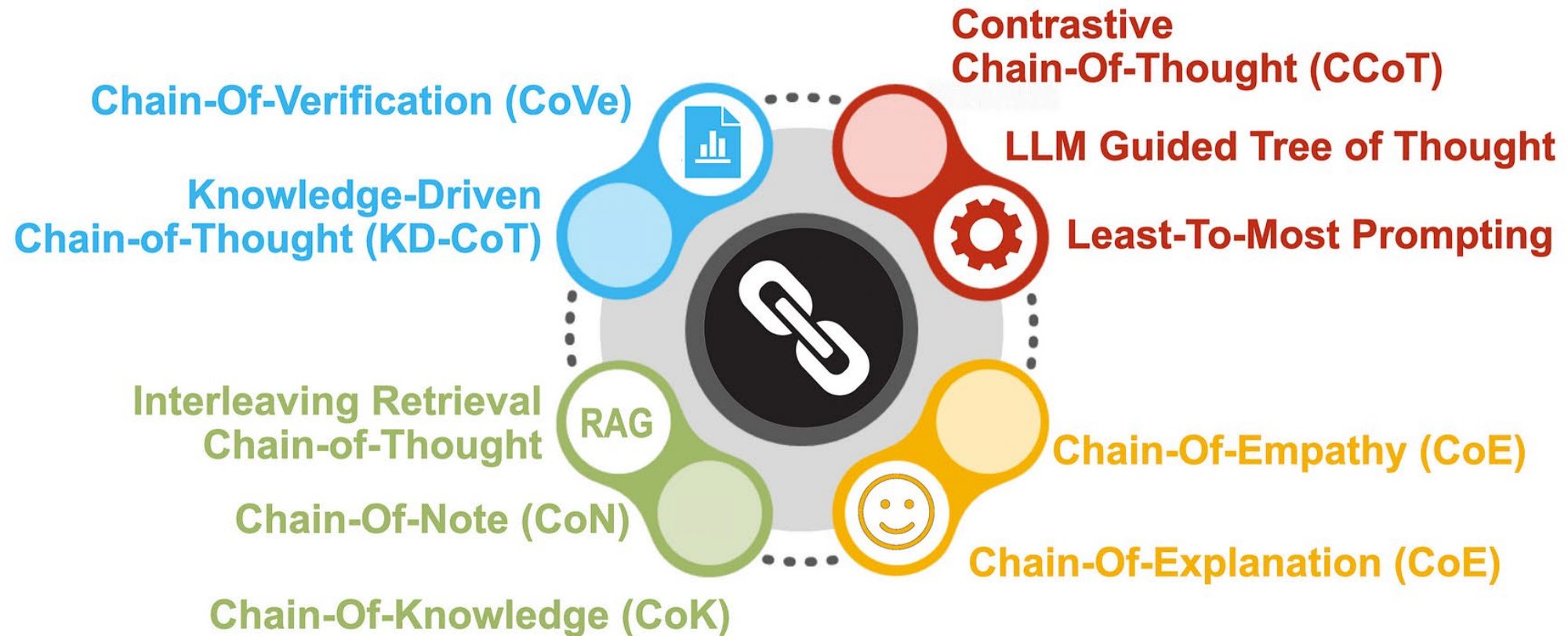
# Gen AI Tech Stack evolution in 2024



# Market Segmentation impact



# Chain-of-Thought (CoT) – Why is this important?





# Tree-of-Thoughts (Tot)

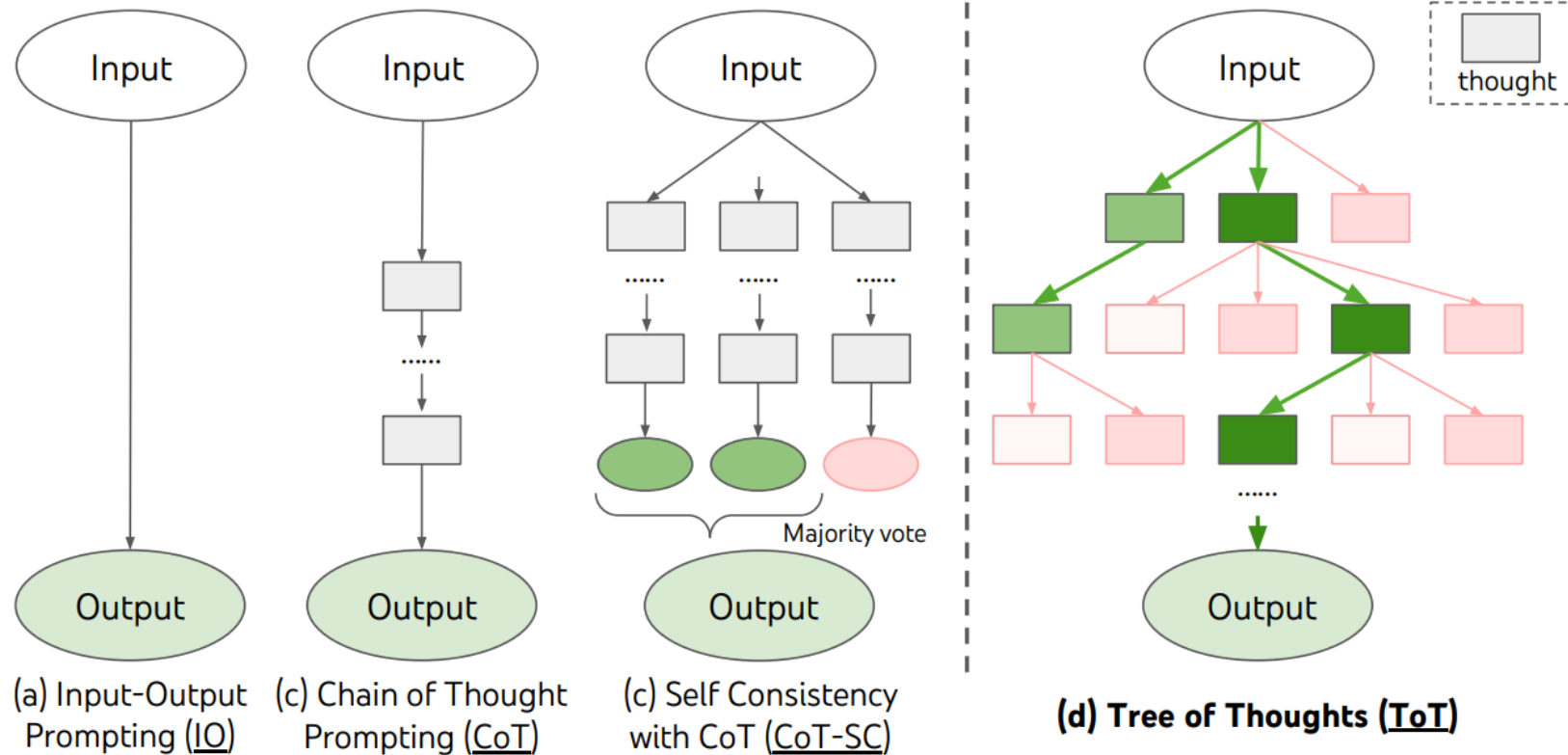
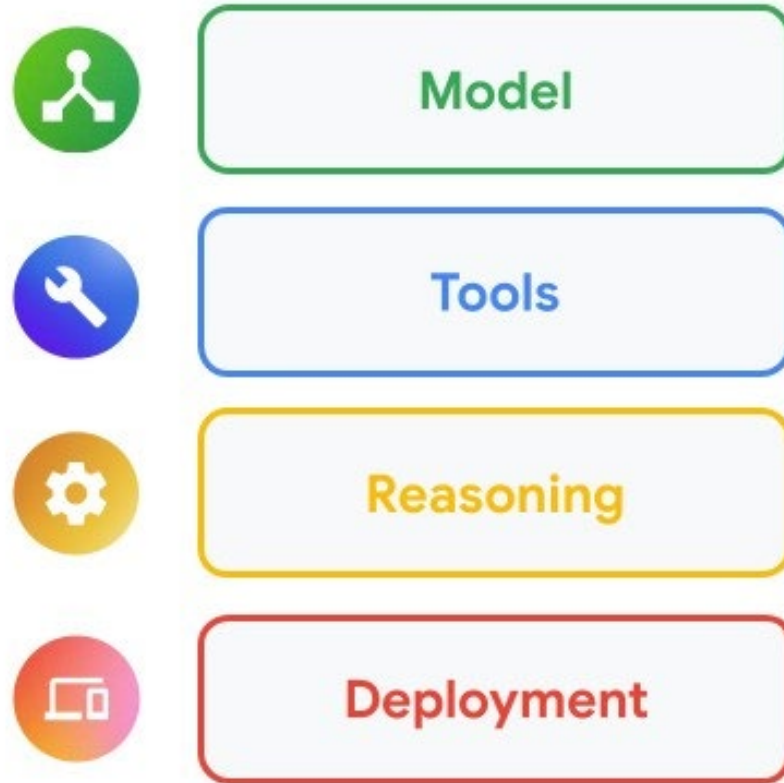


Figure 1: Schematic illustrating various approaches to problem solving with LLMs. Each rectangle box represents a *thought*, which is a coherent language sequence that serves as an intermediate step toward problem solving. See concrete examples of how thoughts are generated, evaluated, and searched in Figures 2,4,6.

# Emergence of Autonomous AI Agents – Vertex AI



**Foundational Model:** This layer handles content generation, understanding and responding to user queries in natural language, and summarizing information.

**Tools & Function Calling:** This layer allows your agent to interact with external systems & APIs, enabling it to perform actions beyond generating text or images.

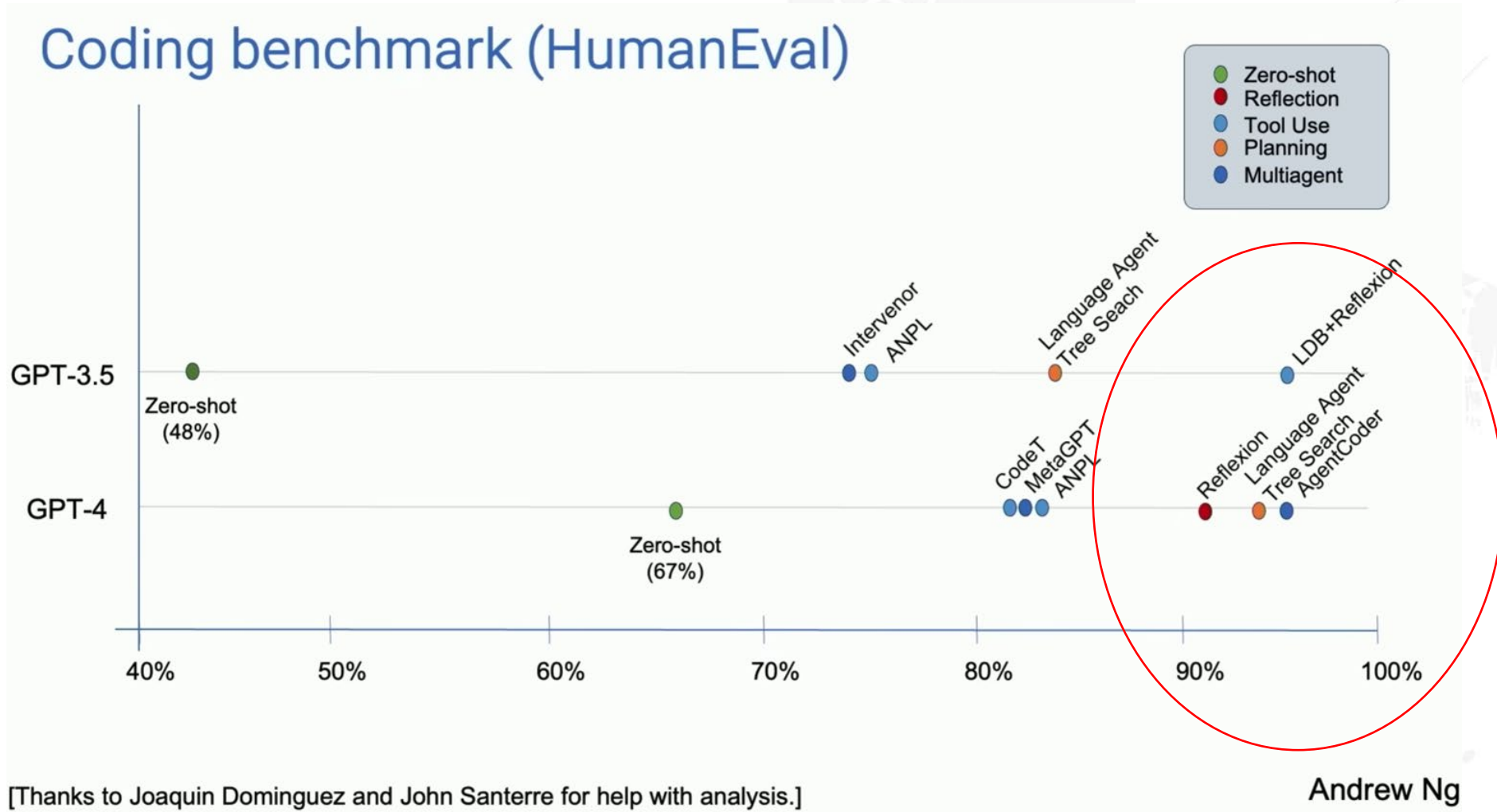
**Reasoning:** This layer organizes your application code into functions, defining configuration parameters, initialization logic, & runtime behavior. API Orchestration simplifies LLM app dev by providing the building blocks for Gen AI apps, & developers maintain control over crucial aspects like custom functions, agent behavior, & model parameters.

**Deployment:** AI Agent service platforms to hosts agent & provides benefits such as security, observability, and scalability. Reasoning Engine is compatible with API Orchestration or any open-source framework to build customizable agentic workflows.

Source: GoogleCloud Building and Deploying AI Agents with LangChain on Vertex AI

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# Agentic Systems are highly effective



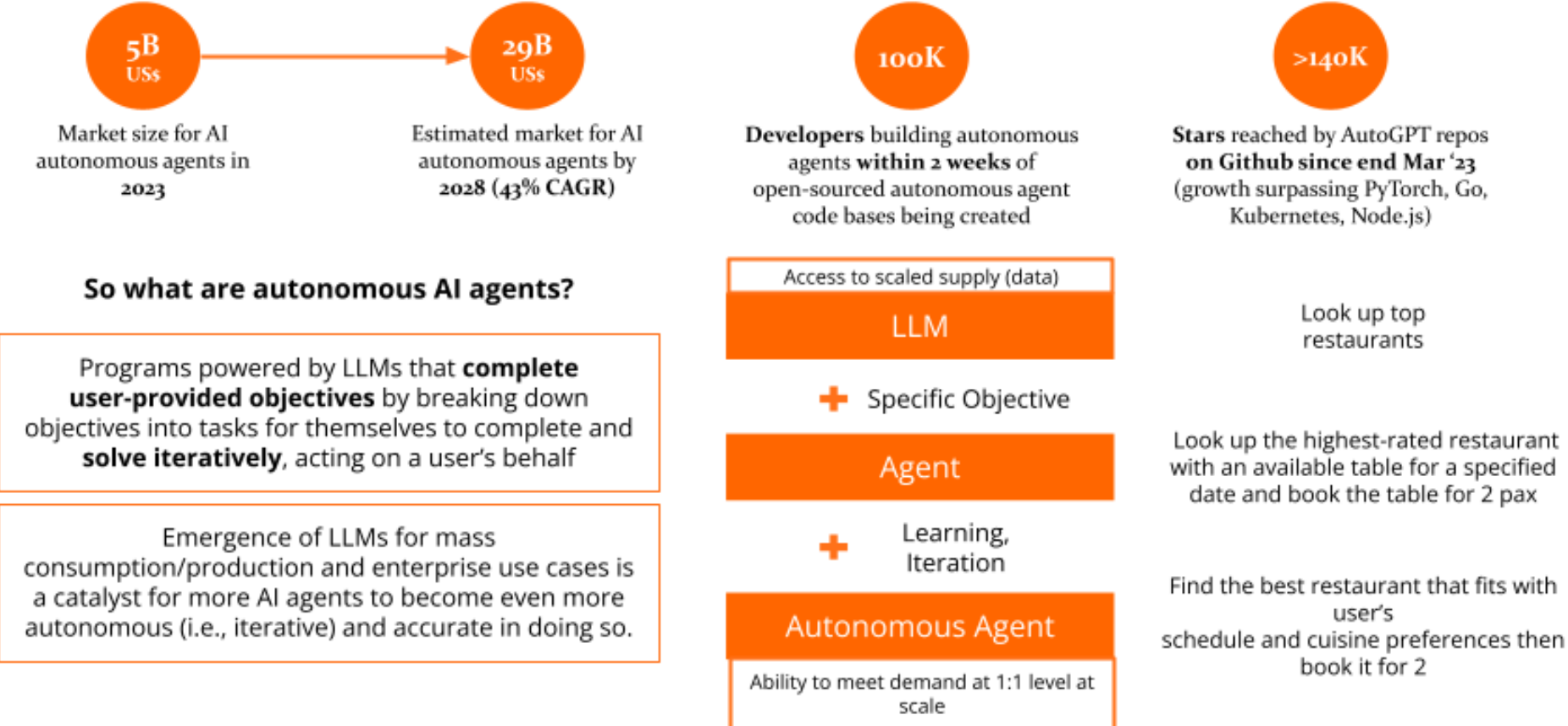
[Thanks to Joaquin Dominguez and John Santerre for help with analysis.]

Andrew Ng

Source: McKinsey

# Emergence of Autonomous AI Agents

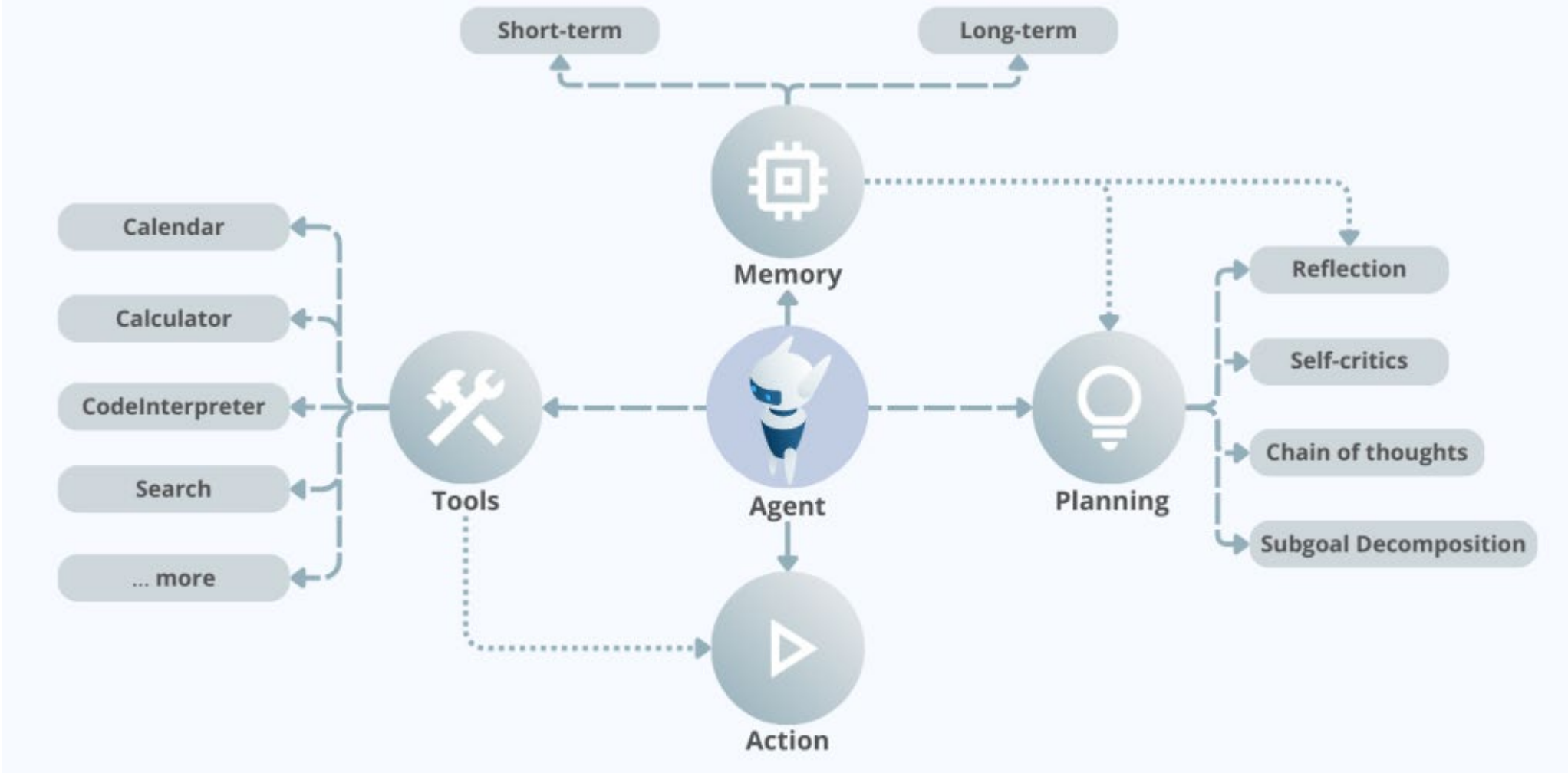
## Democratization of LLMs driving autonomous AI agent building



Source: Insignia Venture Capital

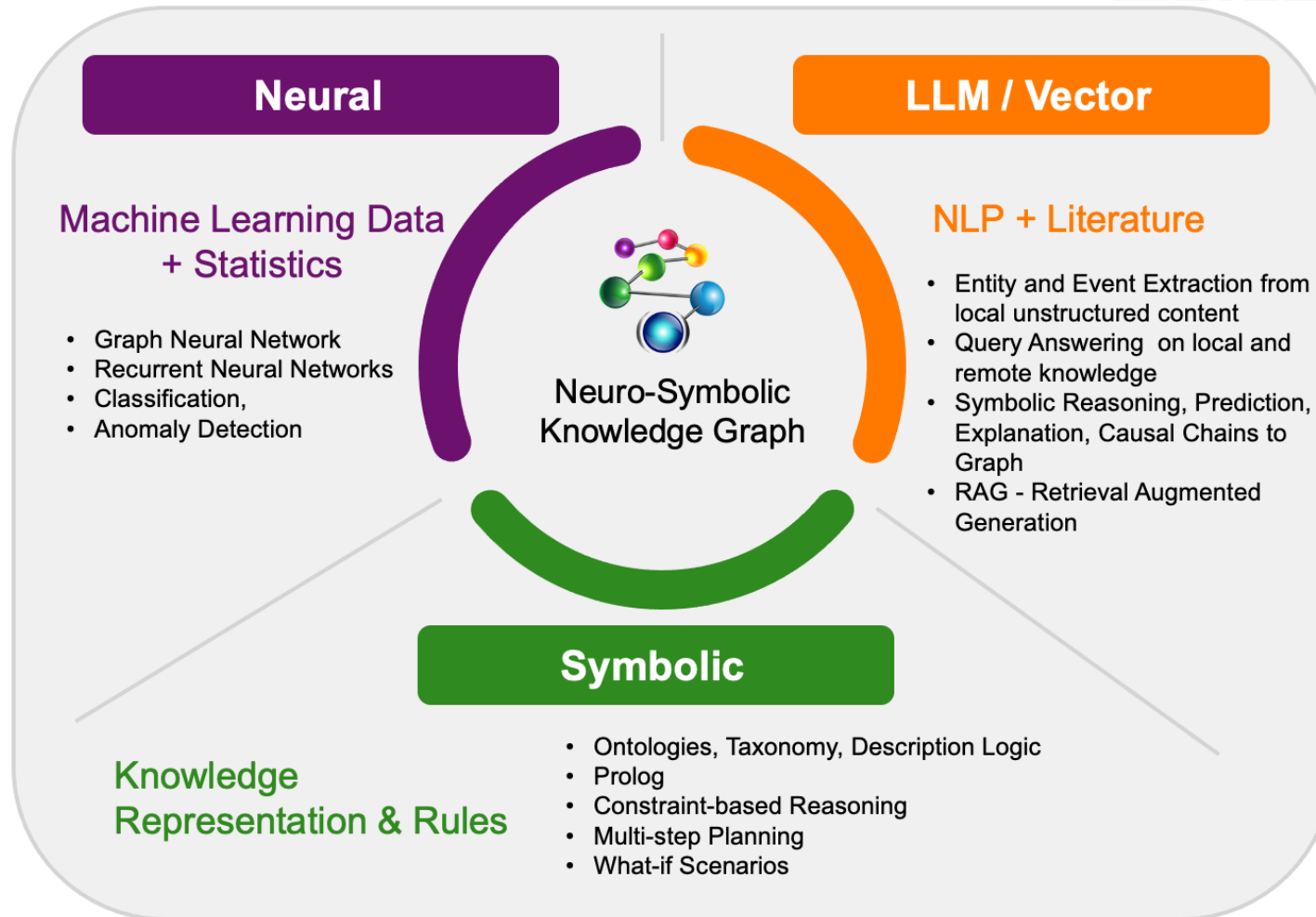


# Building Blocks of Autonomous AI Agent Systems



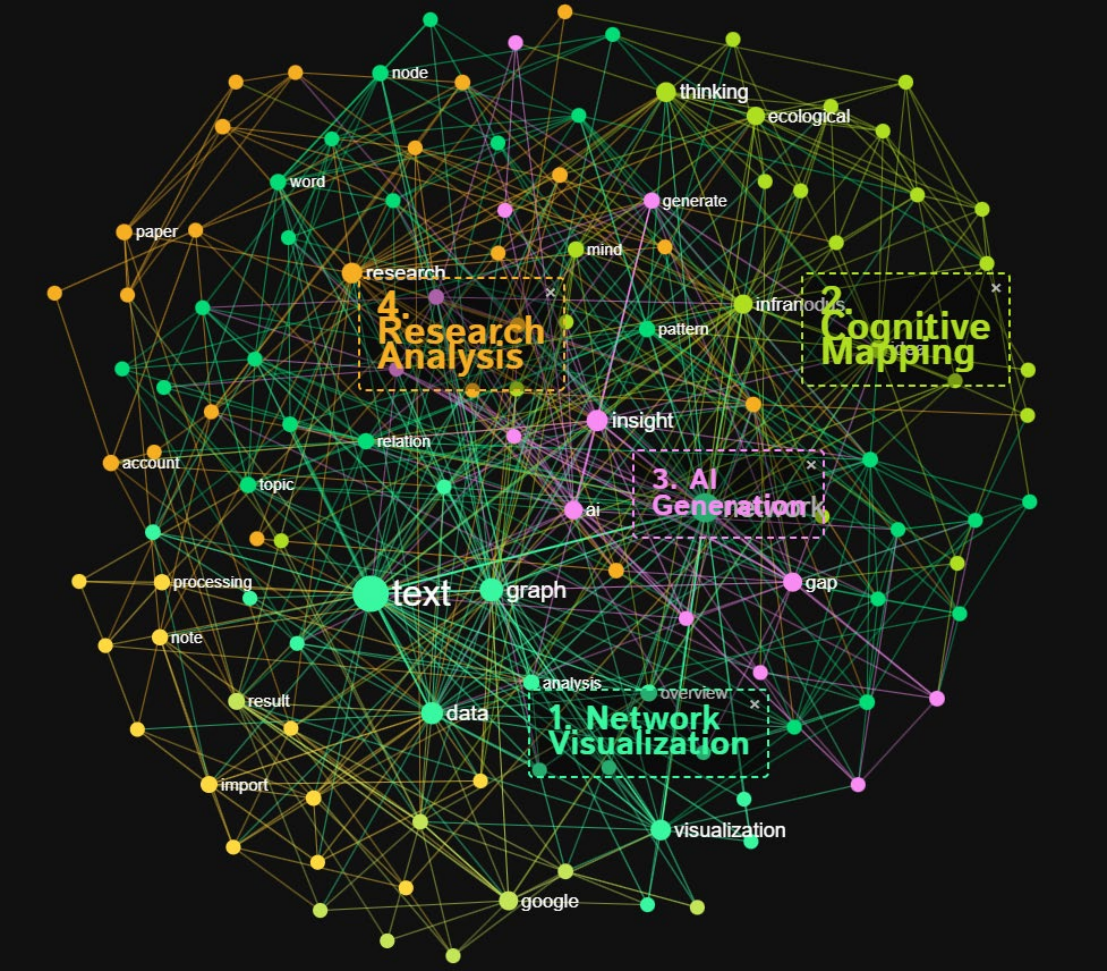
Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# Emergence of Neurosymbolic AI

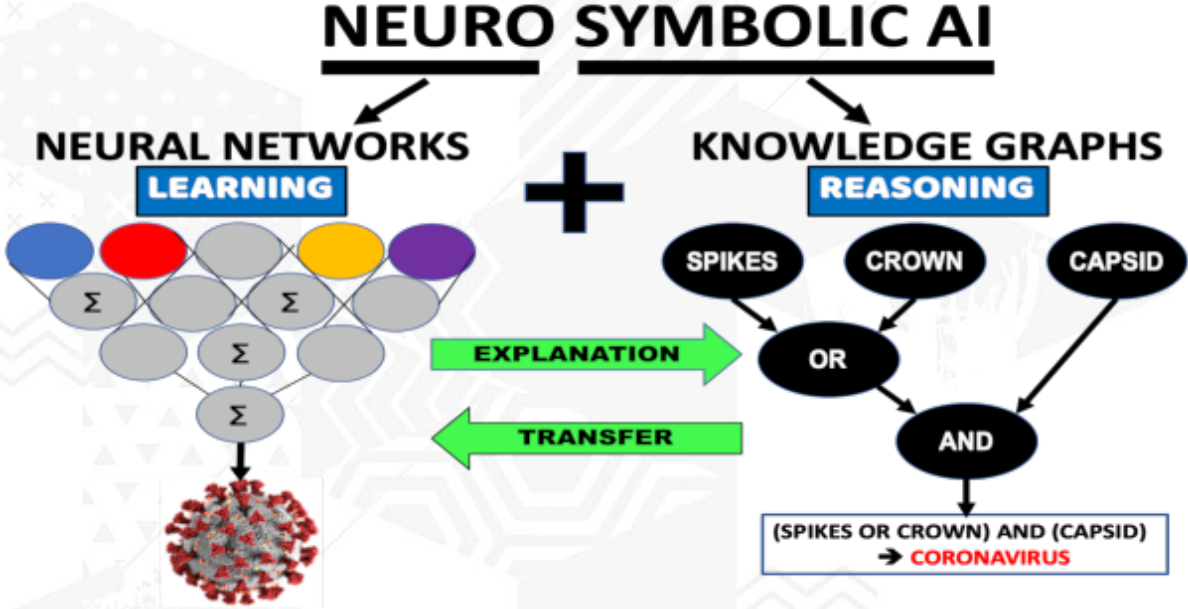


- Neurosymbolic AI combines neural networks' data-driven learning with symbolic reasoning's logic-based approach.
- It integrates pattern recognition with rule-based systems, enabling more robust, interpretable AI.
- This hybrid approach addresses limitations of purely neural or symbolic methods, enhancing AI's ability to reason, generalize, and apply knowledge in complex, real-world scenarios.

# Emergence of Neurosymbolic AI



Source: Infranodus





# AI Council

1+

hour

30

slides

30+

Participants

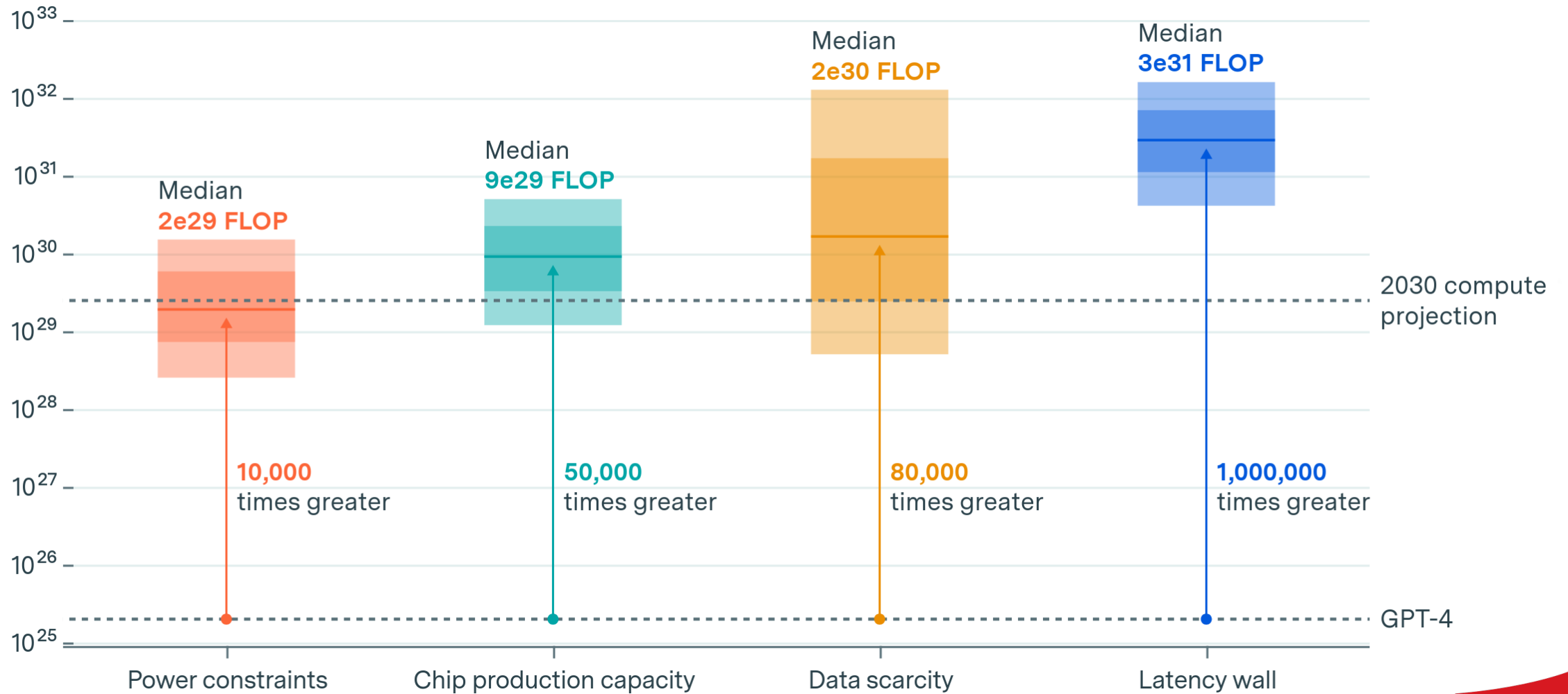
## GENERAL PURPOSE TECHNOLOGY LANDSCAPE

- AI Technology Constraints
- Chips
- Energy
- Data



# Constraints to scaling training by 2030

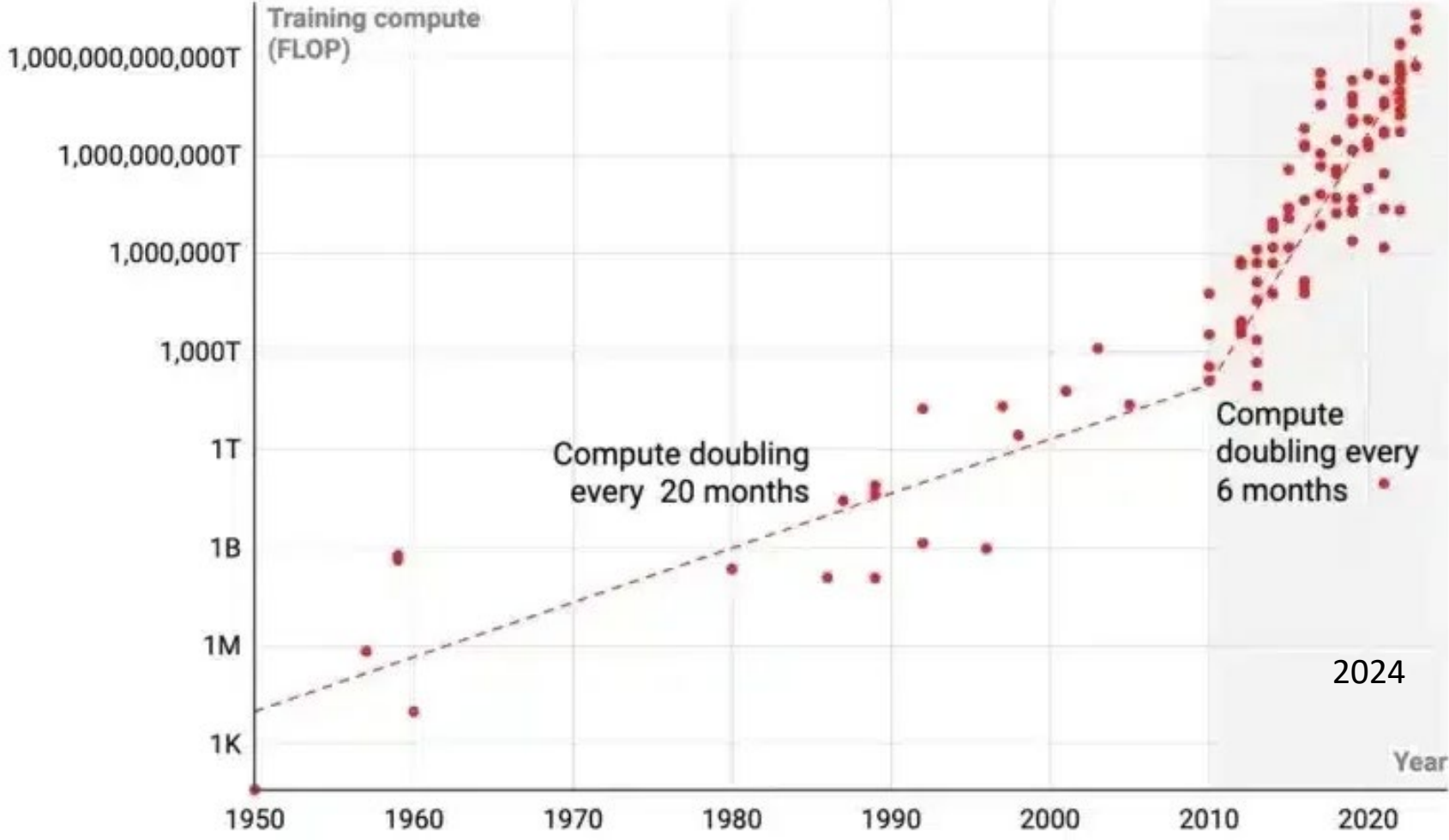
Training compute (FLOP)



Source: EPOCH  
Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Unsustainable – AI compute training – 2x every 6 months



Source: Epoch World Data for TIME

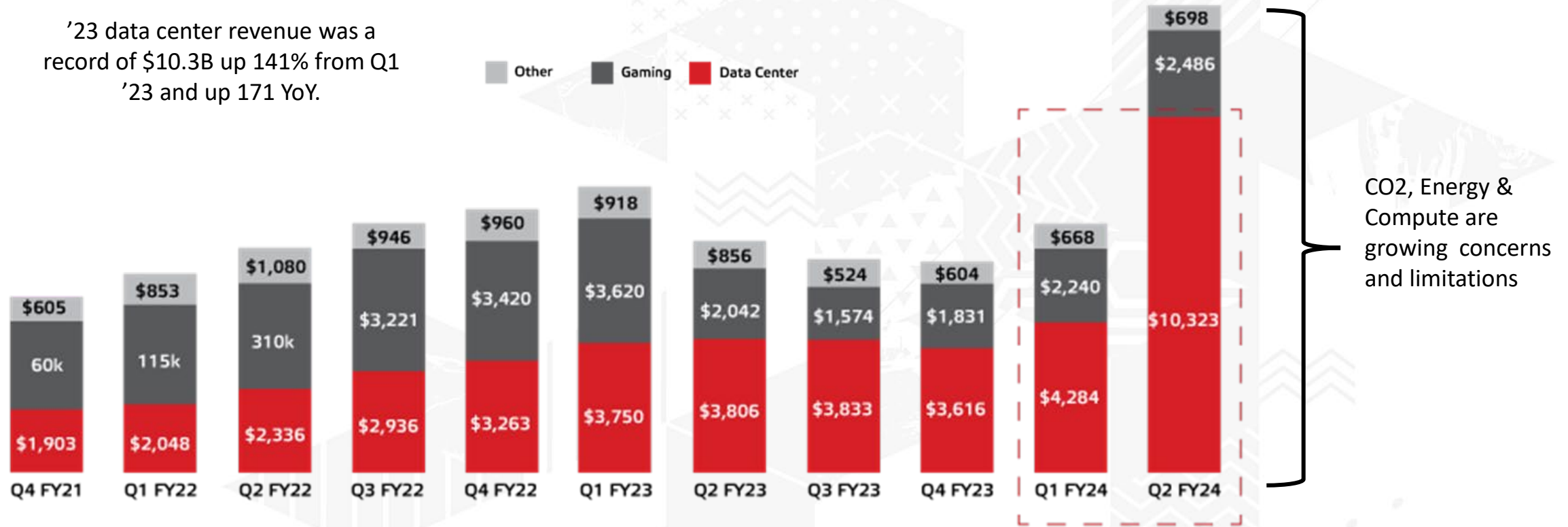
Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Arms Race for Compute, Compute, Compute...

GPU demand see NVIDIA print blowout earnings as it exceeds \$2T market cap club

'23 data center revenue was a record of \$10.3B up 141% from Q1 '23 and up 171 YoY.



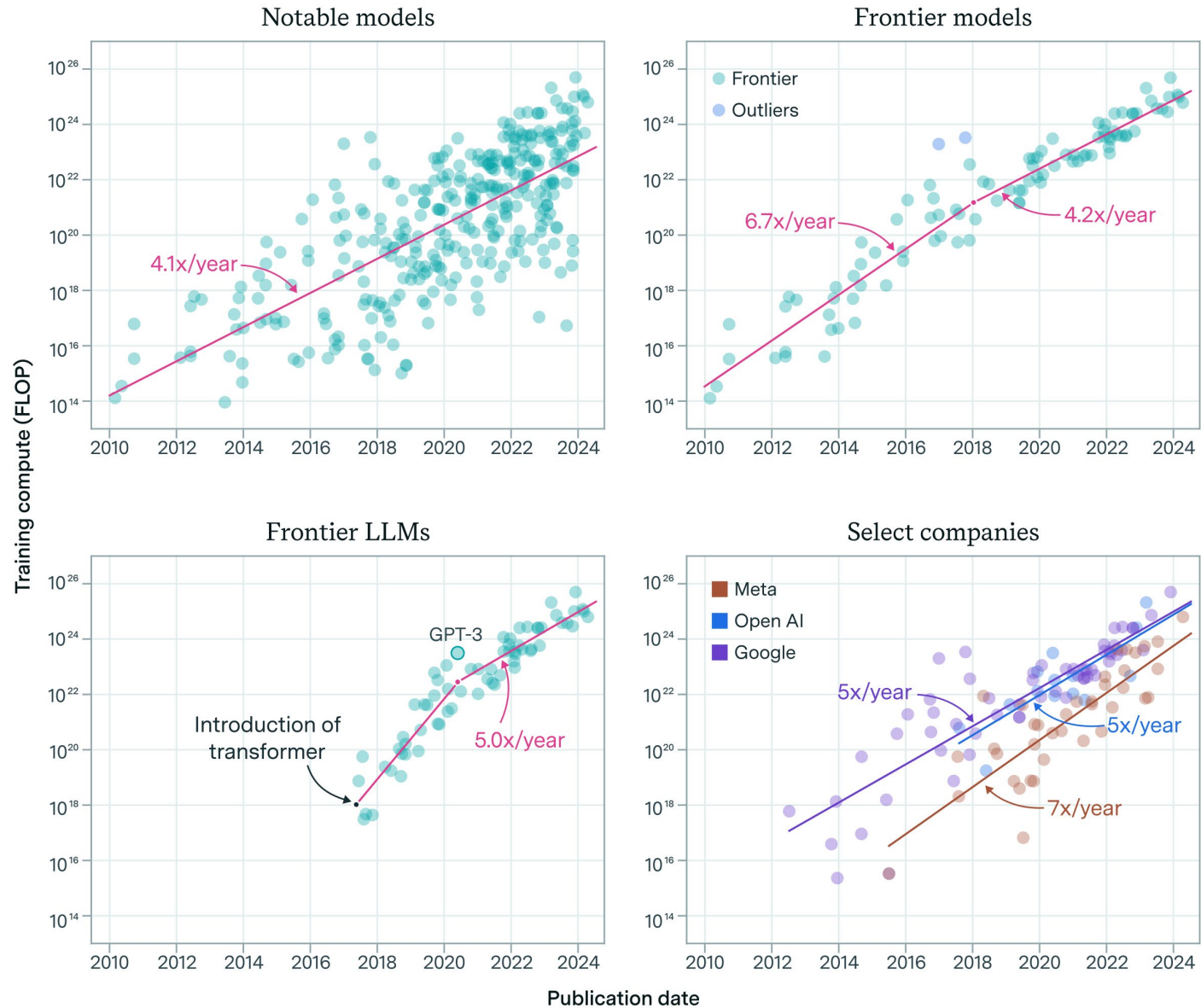
CO2, Energy & Compute are growing concerns and limitations

# Arms Race for Compute, Compute, Compute...

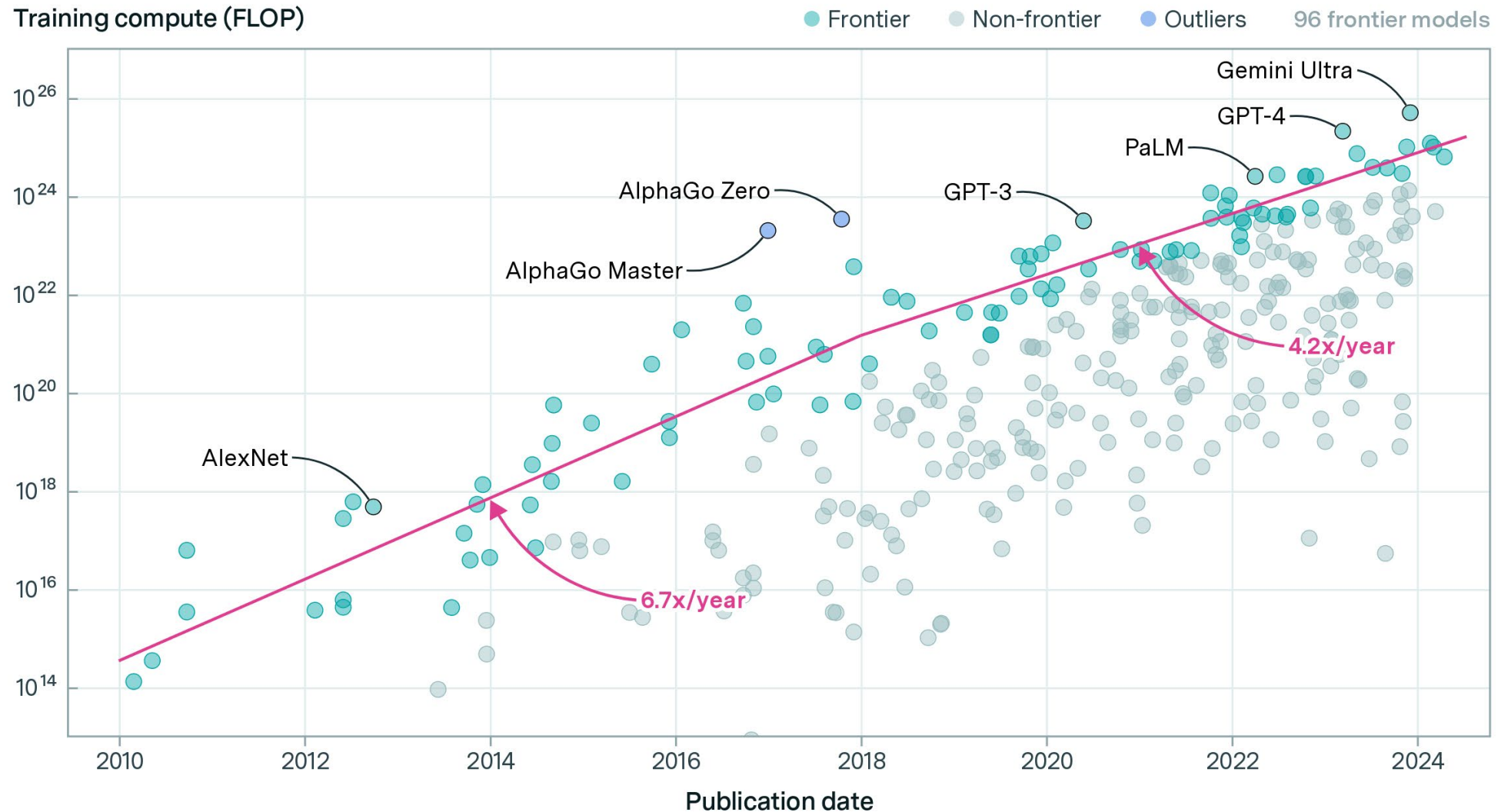
'23 data center revenue was a record of \$10.3B up 141% from Q1 '23 and up 171 YoY.

CO2, Energy & Compute are growing concerns and limitations

# Training Compute of Frontier AI Models Grows by 4-5x per year



# Training compute or 96 frontier models



Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# Open-Source vs Closed Sourced debate

## Foundation models by access type, 2019–23

Source: Bommasani et al., 2023 | Chart: 2024 AI Index report

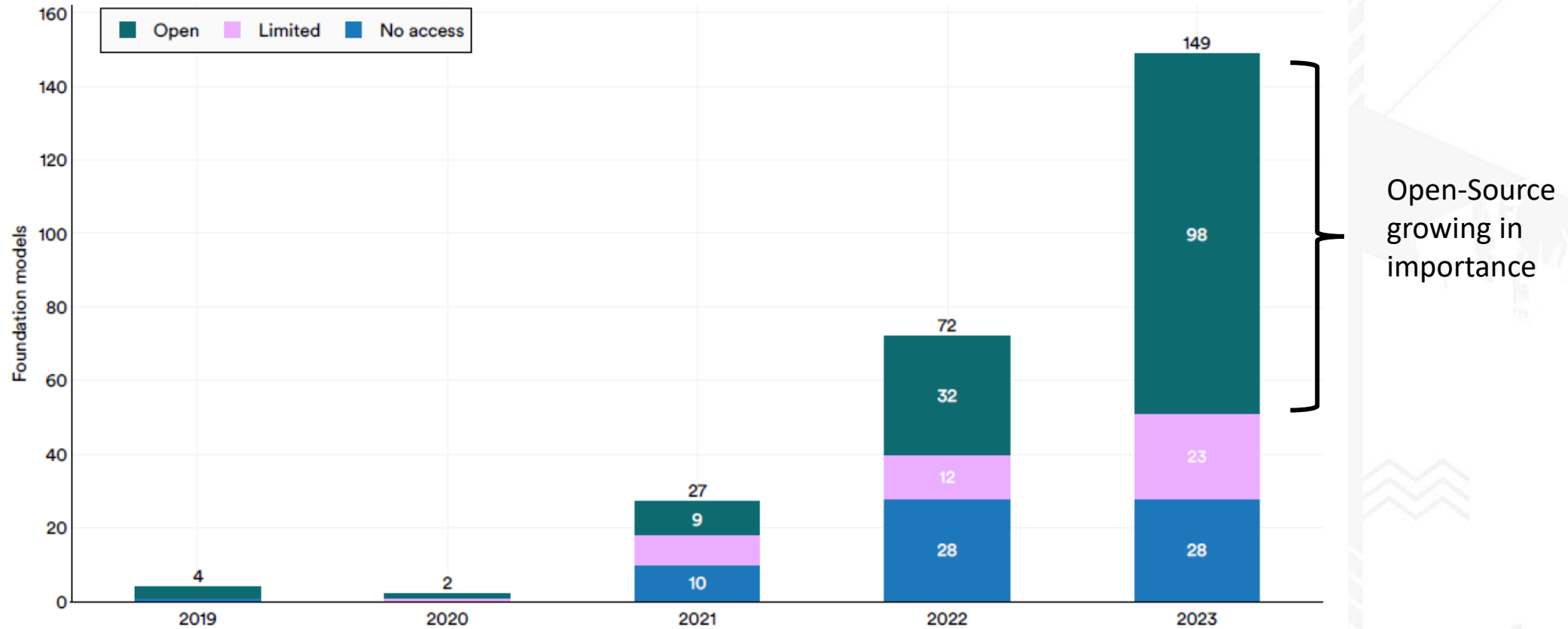


Figure 1.3.13

Source: '24 Stanford AI Index

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# AI Council

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hour

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## GENERAL PURPOSE TECHNOLOGY LANDSCAPE

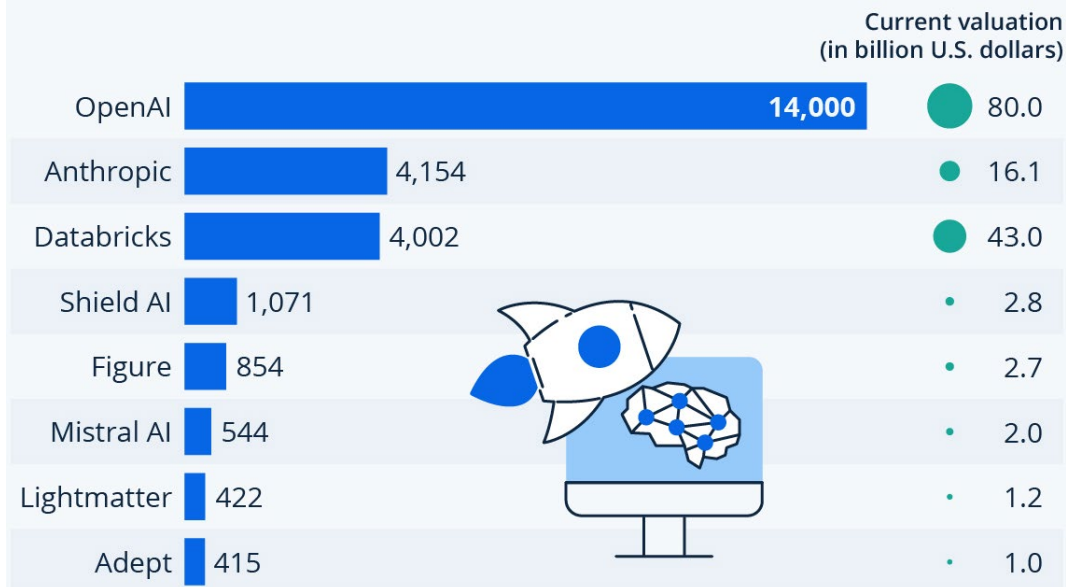
- AI Technology, & Segmentation
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- Industry Investment Use Cases
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- Energy and constraints on Compute



# Valuations at Hype Curve Peak

## The 14-Billion-Dollar Bet on OpenAI

Top 8 AI startups worldwide according to capital invested as of Mar. 25, 2024 (in million U.S. dollars)



Source: Gartner

# Investment Data skewed by Big Tech CVC '23-24



invested in: **Anthropic**



invested in: **InAI21 Labs, Anthropic, Runway**



invested in: **Adept, Inflection, Open AI**



invested in: **Adept, AI21Labs, Cohere, Inflection, Mistral, Runway**



invested in: **Anthropic, Cohere, Mistral, Runway**

**ADEPT**

backed by: **Microsoft, Nvidia**

**ANTHROPIC**

backed by: **Amazon, Google, Salesforce**

**Inflection**

backed by: **Google, Microsoft, Nvidia**



backed by: **Microsoft**

**AI21 labs**

backed by: **Google, Nvidia**



backed by: **Nvidia, Salesforce**



backed by: **Nvidia, Salesforce**



backed by: **Google, Nvidia, Salesforce**

# Which industry process rely heavily on AI in '24?

Global AI ranked by revenue of use cases:

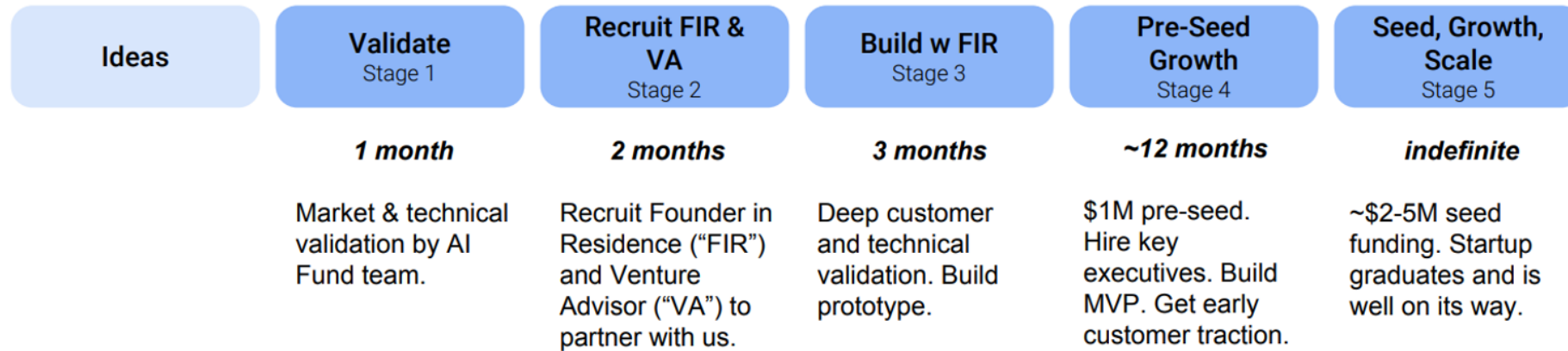


Source: McKinsey

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# AI Fund Use Case

## Process for building startups



Dylan Keil

PROPRIETARY & CONFIDENTIAL | © 2023 AI FUND



Green shipping powered by AI

AI technical expertise is important for this process:

- Quick and accurate technical validation
- AI tech is built quickly and well
- Bring in a strong technical team

Source: AI Fund Andrew Ng

# Market Use Cases



- Automating warehouse inventory management
- Off the shelf drones with CV and SW-layer
- Semi-structured environment

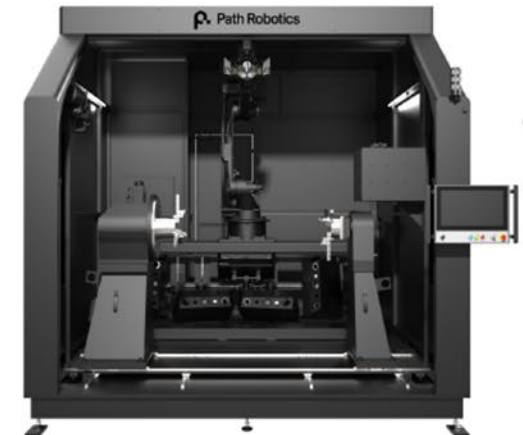
PATH ROBOTICS

- Autonomous welding
- Fixed CV array
- Semi-structured environment

Vertical warehouses

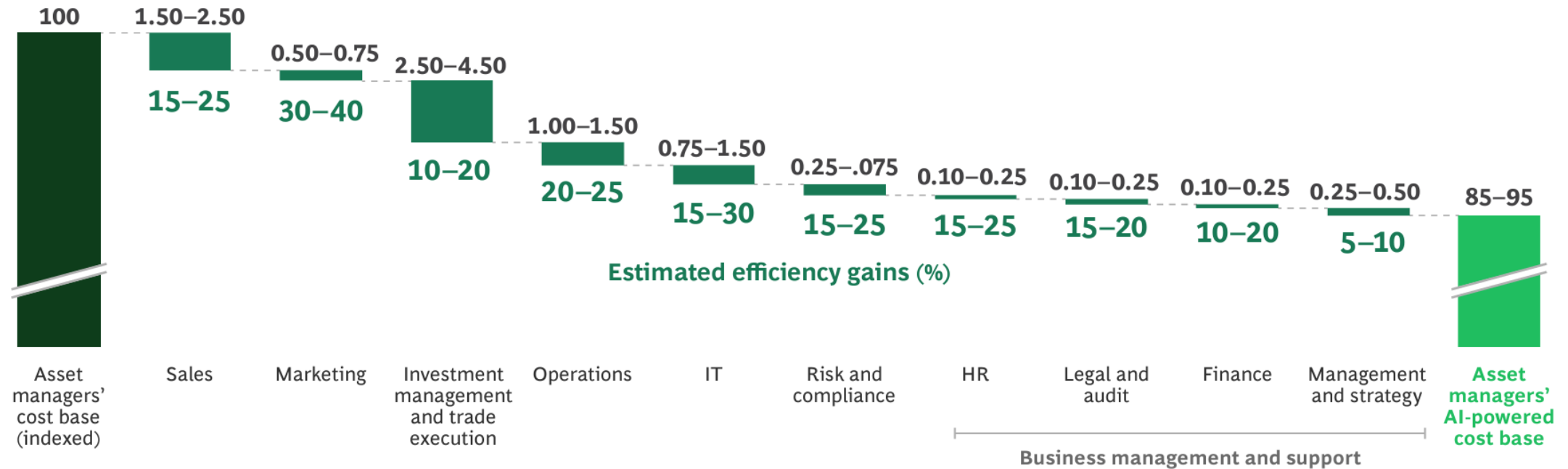


Horizontal warehouses



Source: Xplorer Capital

# AI-Enabled Gains across Value Chain for Investment Mngt



**Sources:** BCG's Global Asset Management Benchmarking Database, 2023; expert interviews; BCG analysis.

**Note:** Individual value chain ranges do not add up to the total range because of rounding.

Source: BCG



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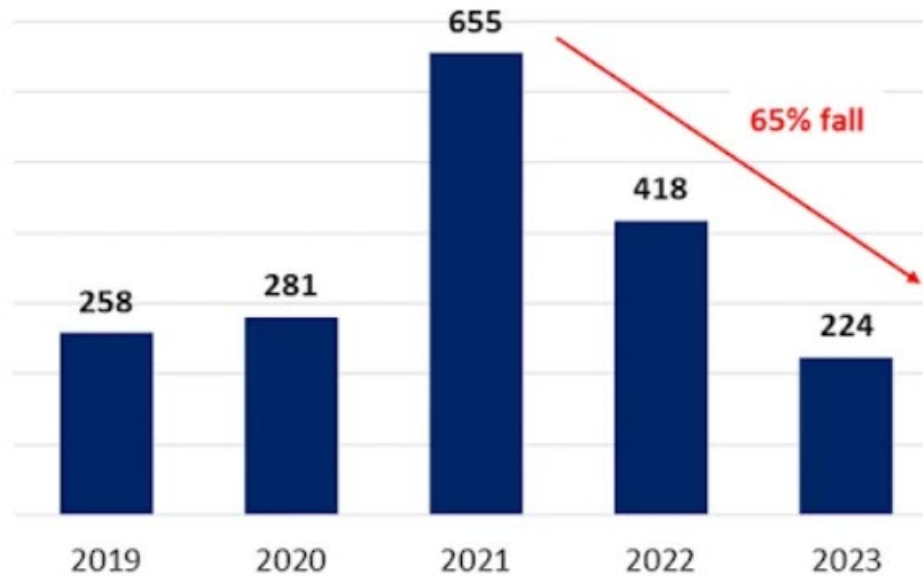
## VC AND INVESTMENT CHANGING LANDSCAPE

- Hype Curve, Big Tech Skews and daunting valuations
- Investment Themes, Tech Stack & Segmentation
- Global VC Market Data & Trends
- Global Venture Capital challenges

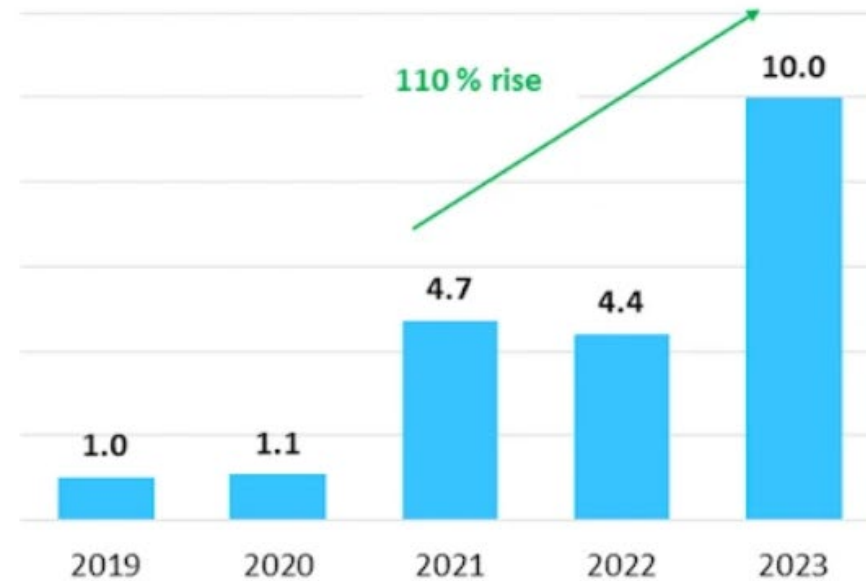
# VC sharply reduced but AI increase from CVC in 2023-24

## Global startup VC funding landscape

Startup funding - ALL [\$ Billion]



Startup funding - GenAI [\$ Billion]



Note: Venture capital deals (announced and completed).

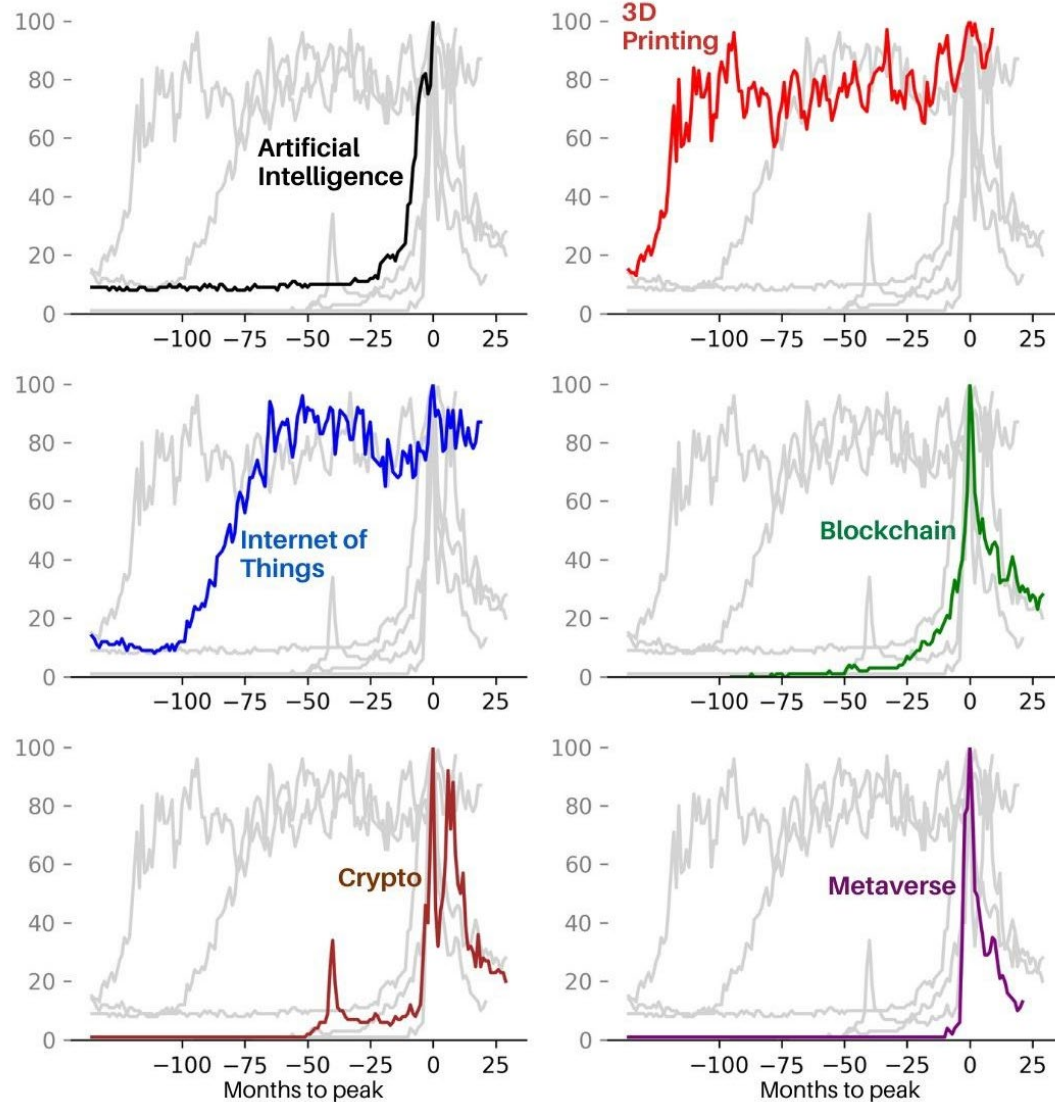


Source: GlobalData Deals Analytics





# Hype Cycle Comparisons



## Artificial Intelligence (AI)

- **General Purpose Technology:** Pervasive applicability across multiple sectors.
- **Maturing Investment:** Transitioning to widespread practical use with proven ROI.
- **Current Phase:** Hype Peak but fueled by global adoption and innovation.

## 3D Printing

- **Specialized Use:** Mainly beneficial in specific industries like aerospace and medical.
- **Current Phase:** Stable as limitations in broader use case contexts become evident.

## Internet of Things (IoT)

- **Connectivity Challenges:** Progress slowed by security and integration issues.
- **Current Phase:** Advancing as standards improve and practical deployments increase.

## Blockchain

- **Expansion Beyond Crypto:** Now exploring broader transactional applications.
- **Current Phase:** Moving past initial disillusionment towards useful niche applications.

## Cryptocurrency

- **Market Turbulence:** Characterized by extreme volatility and regulatory challenges.
- **Current Phase:** Undergoing reassessment by markets / regulators / spec vehicle.

## Metaverse

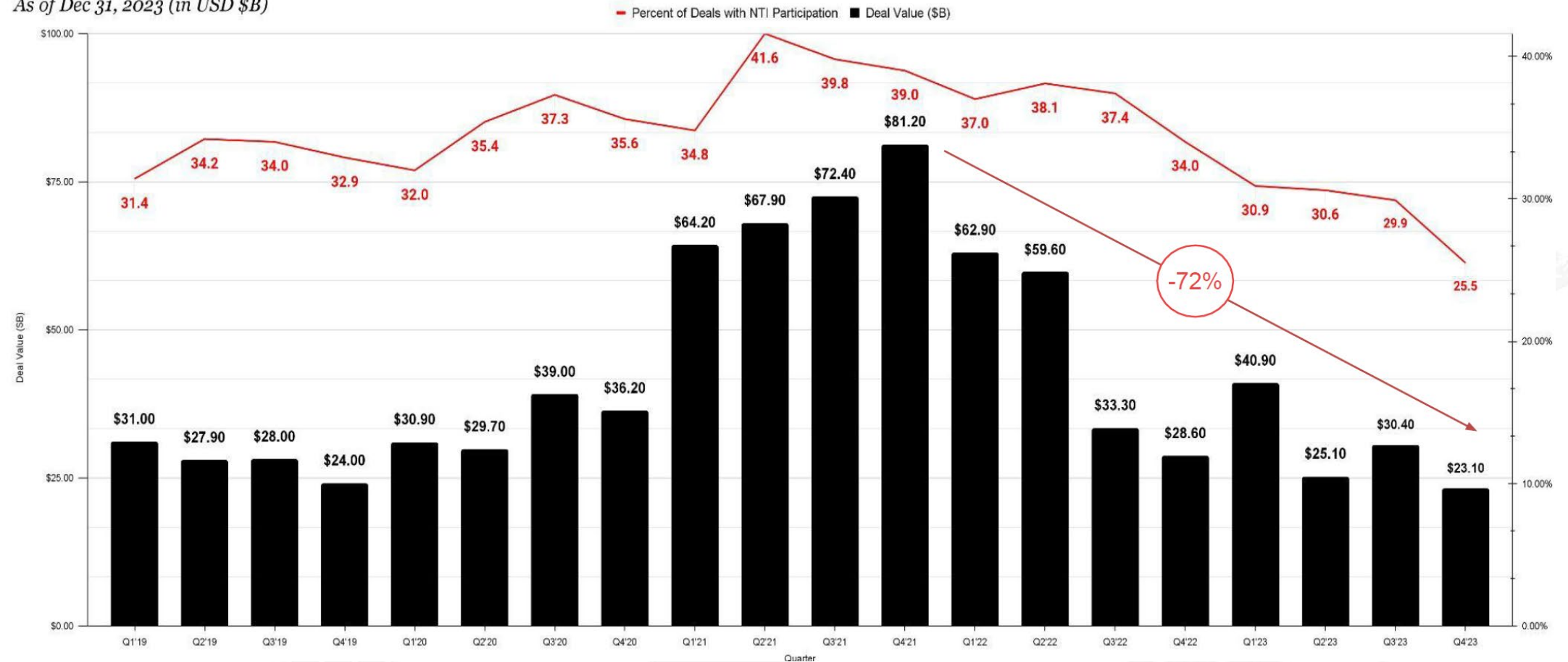
- **Emerging Stage:** High initial expectations with uncertain practical utility / value.
- **Current Phase:** Anticipated challenges as it explores viable applications.

Source: Google Search

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# General VC “Tourists” Investors are retreating

US Non-Traditional VC Investments  
As of Dec 31, 2023 (in USD \$B)



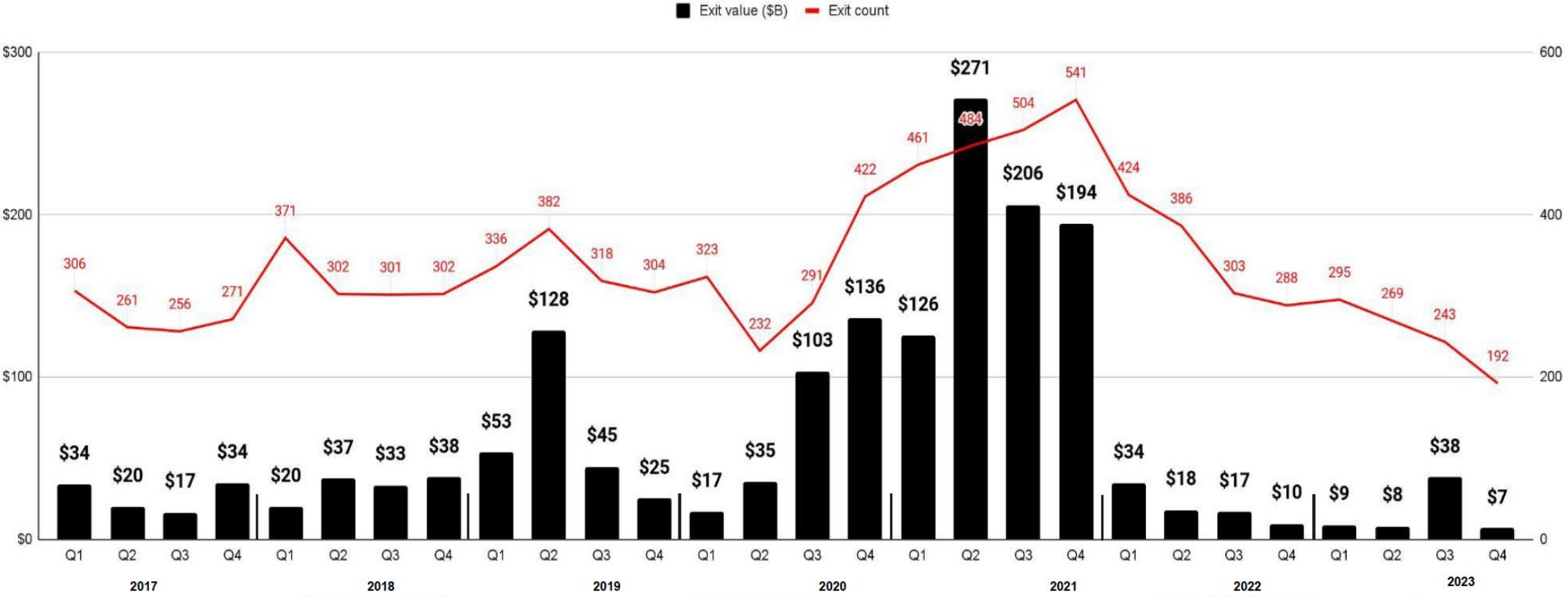
Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# M&A and IPO “hot” markets turns cold

US VC EXIT ACTIVITY BY QUARTER (IPO & M&A)  
As of Dec 31, 2023 (In USD \$B)



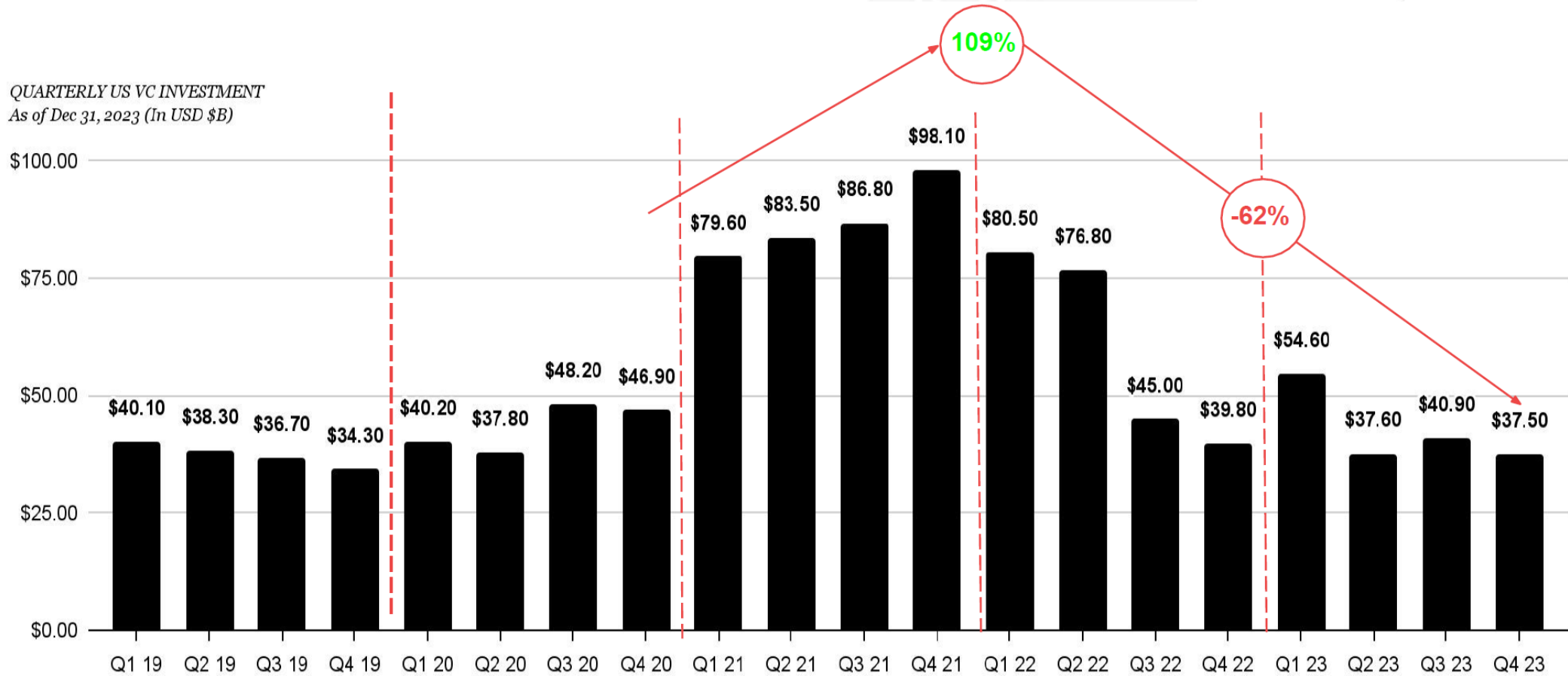
Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# VC deployment in sharp decline since '22

QUARTERLY US VC INVESTMENT  
As of Dec 31, 2023 (In USD \$B)



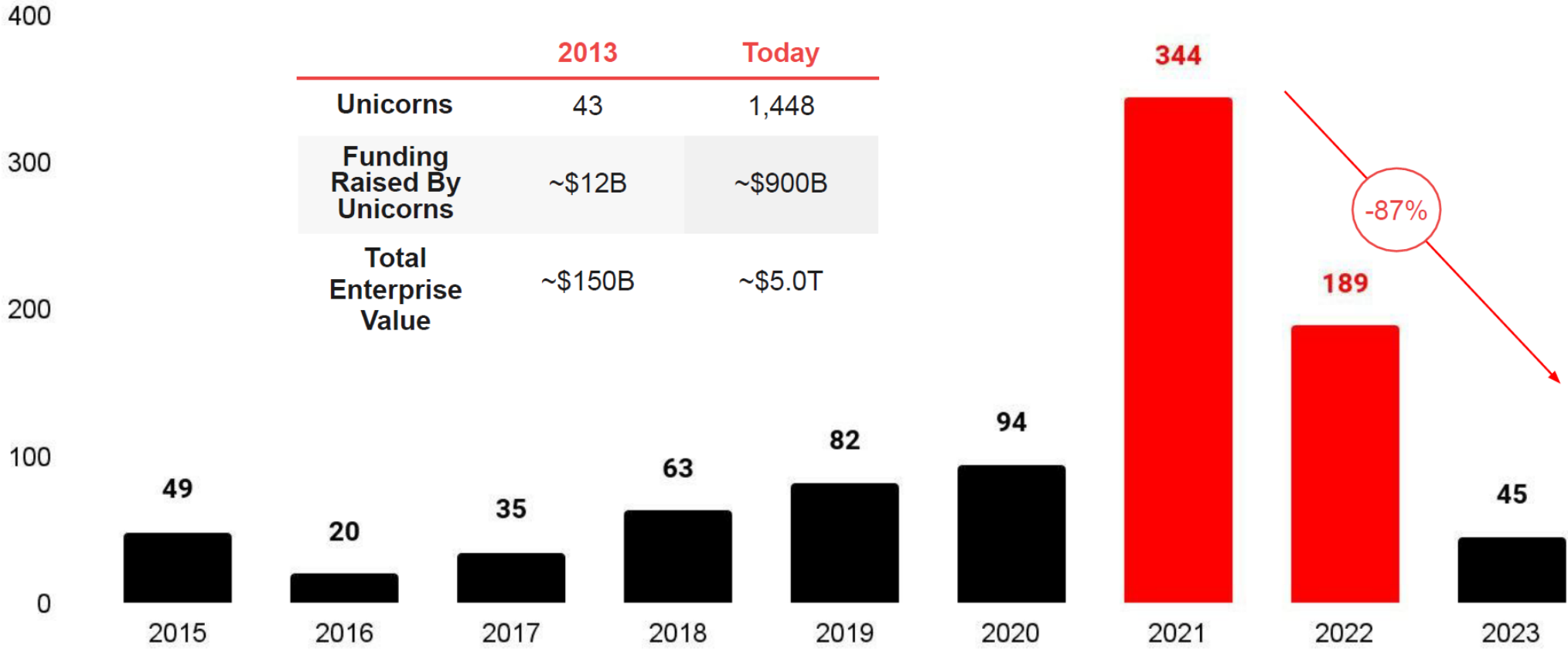
Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Unicorn phenomenon in data

*Current Unicorns by year minted  
As of Dec 31, 2023*



	2013	Today
Unicorns	43	1,448
Funding Raised By Unicorns	~\$12B	~\$900B
Total Enterprise Value	~\$150B	~\$5.0T

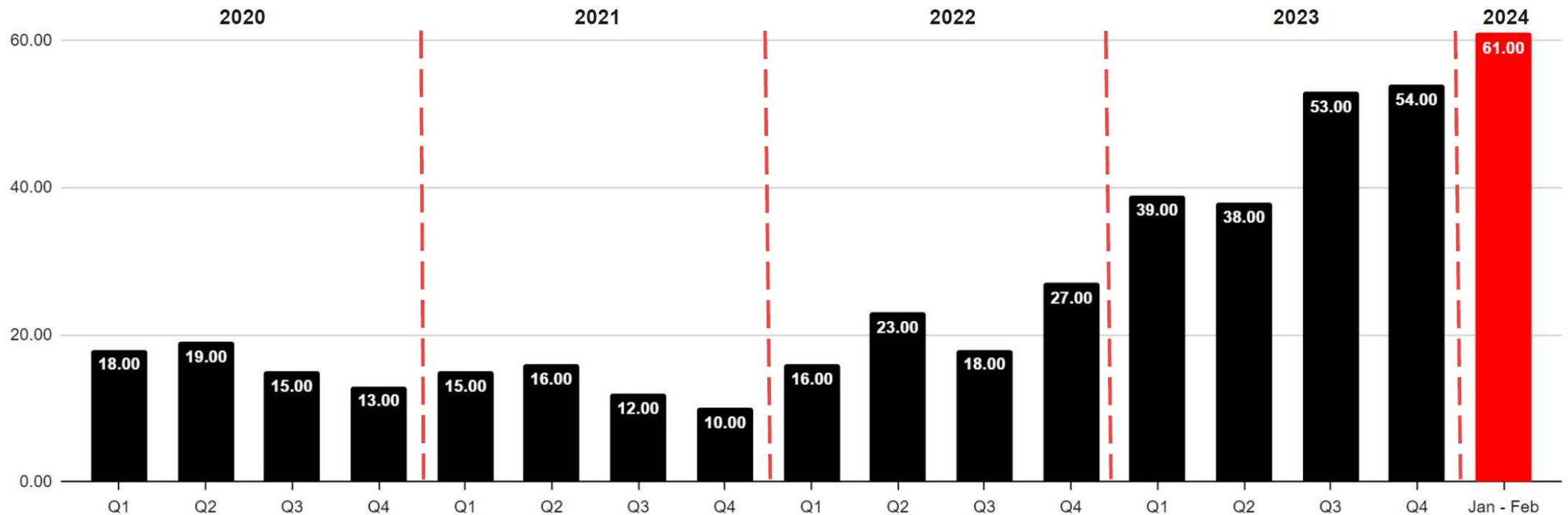
Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



# Closing of Startup rise in 2024

# of Startups That Have Raised >\$5M Shutting Down by Quarter  
As of Dec 31, 2023

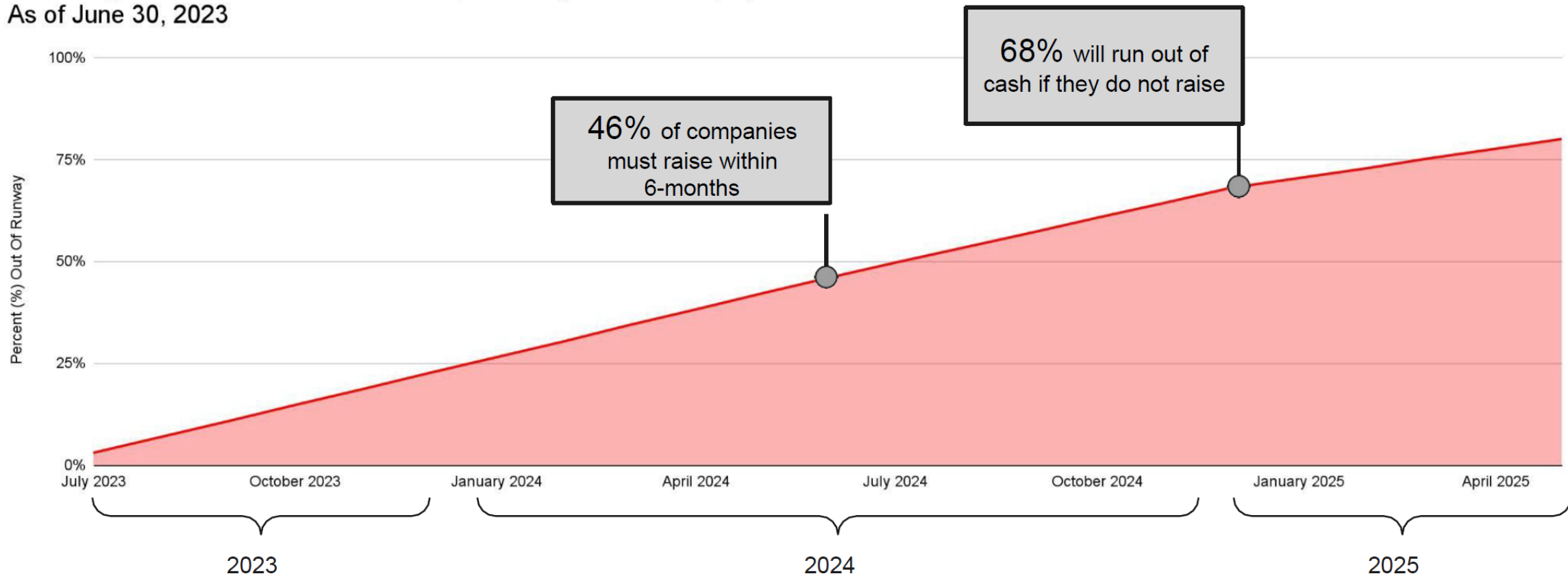


Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others

# Cash burn gets worse into '25

Percentage of US VC-backed tech startups running out of runway by date  
As of June 30, 2023



Source: Antler VC

Compendium Sources: Goldman Sachs, McKinsey, Stanford HAI Index, State of AI Report, Draper Associates; Reid Hoffman at Blitzscaling; others



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