

2025 Tech Trends

 CBINSIGHTS



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The screenshot displays the ChatCBI BETA interface. At the top, a search bar contains the query: "Tell me about some promising early-stage AI infrastructure startups". The main content area provides a comprehensive analysis:

- Summary:** AI infrastructure startups are reshaping how enterprises deploy and scale AI, but the landscape is rapidly consolidating.
- Market Overview:** AI startups are capturing 31% of all venture funding, signaling strong investor appetite despite market pressures.
- Key Players:**
 - Crusoe (Mosaic Score: 919) - Growing AI cloud computing provider with 58% headcount growth in last year.
 - Groq (Mosaic Score: 921) - AI inference specialist with \$1B+ in funding.
- Market Trends:** The market is showing signs of consolidation. OctoML's 10% headcount decline since 2023 highlights challenges, even with new partnerships like Google Cloud.
- Bottom Line:** When evaluating early-stage AI infrastructure plays, team expertise is crucial - especially before significant customer adoption.

Below the analysis, there are "Try Again" and "Copy" buttons, and a "Suggested Questions" section with a "Show" dropdown.

On the right side, a "Sources" panel lists:

- Research: CBINSIGHTS State of Venture Q3 2024 Report (Oct 3, 2024). A small table shows AI funding at \$16.8B, representing 31% of venture funding.
- Company Profile: Crusoe Profile
- Company Profile: Groq Profile
- Note from our research team: While most AI infrastructure markets...

A "Show 1 more source" link is also present.

Tech trends

Financial services

The cyborg wealth advisor	04
AI agents are given money to spend	12
Crypto takes more baby steps toward the mainstream	19
Compressed fintech valuations create opportunities for acquirers	24

Healthcare & life sciences

Disease management enters a new phase with AI	30
Investment floodgates open for RNA therapeutics	35
Autonomous robots eye caregiving	40

AI

AI M&A fuels the next wave of corporate strategy	45
LLMs' explainability moment	51
Open-source cedes top LLMs but dominates smaller models	58
The US is leading the AI arms race — for now	65

Enterprise

Spatial computing for enterprises is here to stay	71
---------------------------------------------------	----

Retail & consumer

Retail's personalization imperative	76
-------------------------------------	----

Industrials

The future data center arrives	81
Cheaper access to space sparks investor rush	86

Financial services

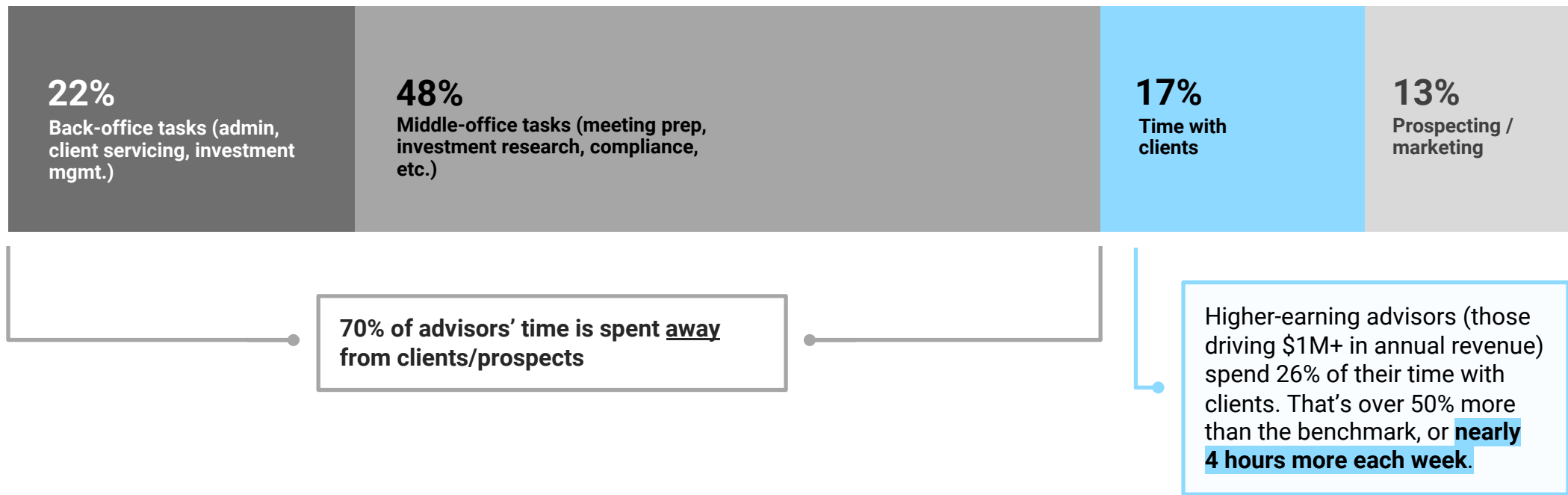
The cyborg wealth advisor



Drowning in admin work, financial advisors spend less than a fifth of their time with clients

Top performers eke out an additional 9% of their time for clients – driving ~200 additional 1-hour meetings per advisor per year

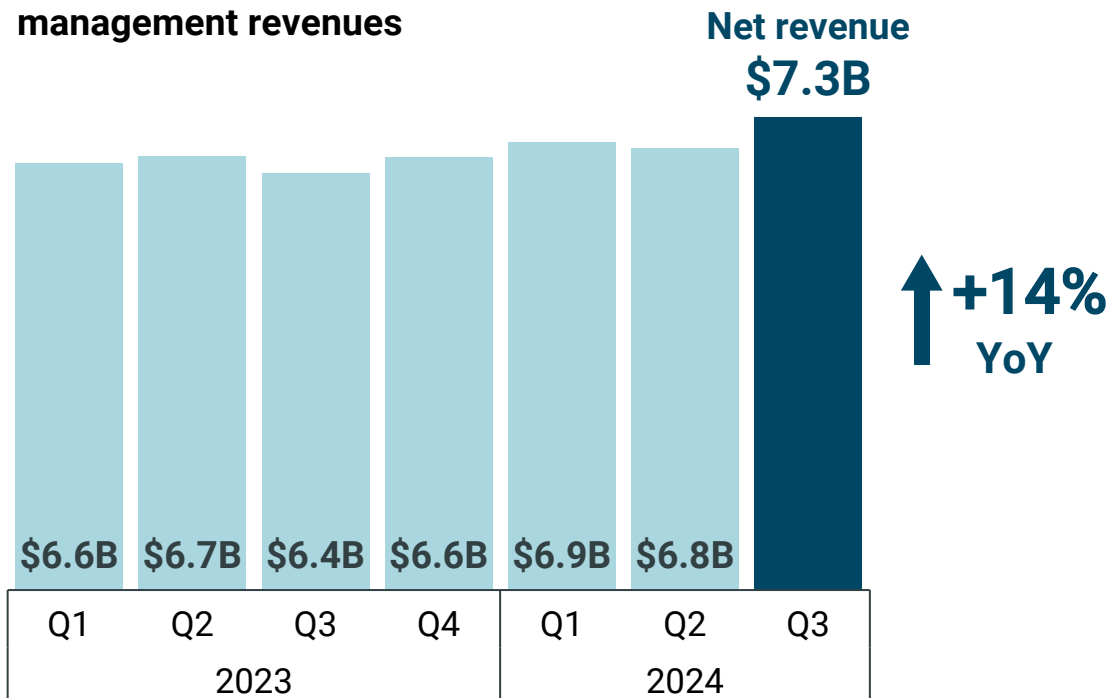
Percentage of time senior financial advisors dedicate to routine tasks



To get that time back, wealth giants like Morgan Stanley double down on AI for advisor productivity

Morgan Stanley's wealth management business saw record net revenue in Q3'24 on the heels of deeper AI integration

Morgan Stanley's wealth management revenues



Morgan Stanley leans heavily into AI integration, including a partnership with OpenAI, in its Q3'24 earnings call

Earnings Insights

CBINSIGHTS

Morgan Stanley Q3 FY 2024

Morgan Stanley's strategic focus on asset aggregation, AI integration, and global expansion drives strong Q3 2024 performance

Compared to previous earnings calls, the Q3 2024 call places a greater emphasis on Morgan Stanley's AI integration efforts, particularly in the Wealth Management segment. The partnership with OpenAI is a new development that highlights the company's focus on leveraging technology to enhance advisor productivity, improve client interactions, and drive operational efficiencies.

Insights generated by combining CB Insights data and AI

But outside of the largest and most well-resourced firms, wealth managers are cautious about AI

Wealth firms' AI plans have been hamstrung by concerns around regulation and data privacy, as well as a lack of knowledge and technical skills



62%

of firms see the lack of regulatory guidelines as a top obstacle to adopting AI

Source: Wipro study, September 2024, n = 100

Early days: Nearly half of wealth managers are still learning about AI, while another third are implementing it incrementally

Still learning & collecting info about AI

45%

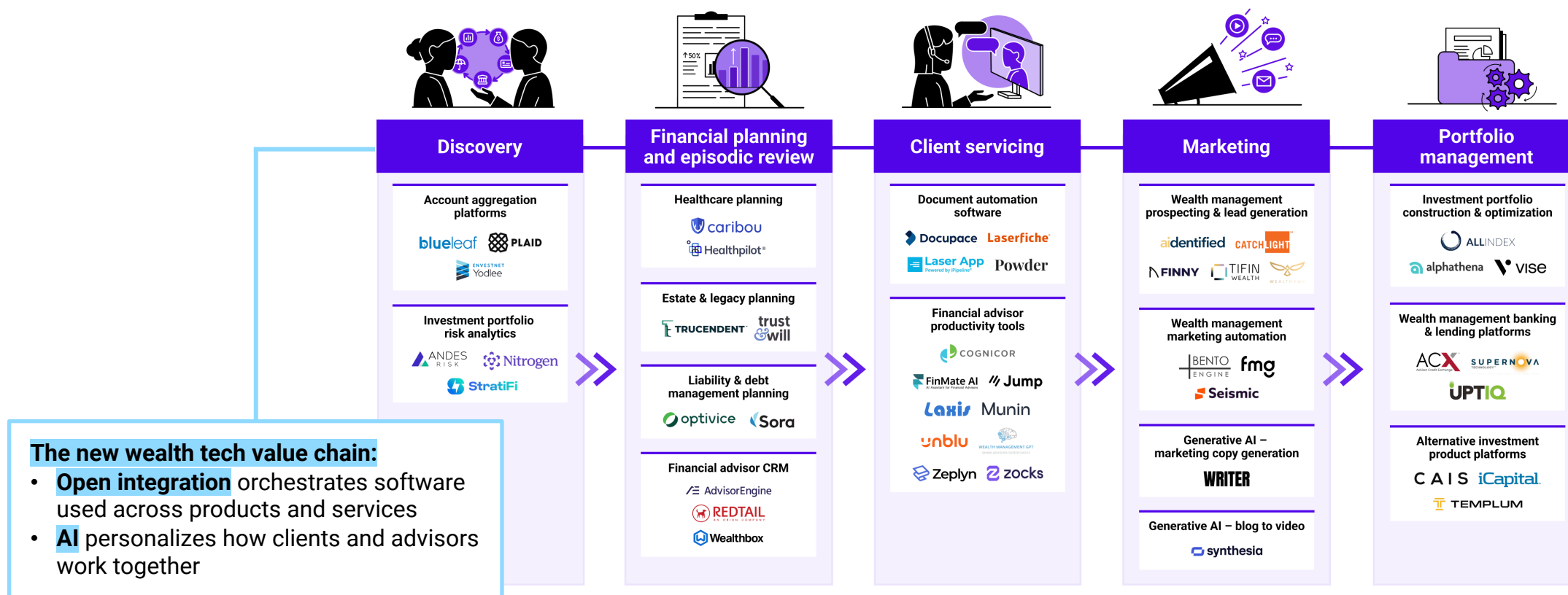
Incremental/small-scale implementation

34%

Source: Financial Planning study, October 2024, n = 270

One of wealth management firms' biggest opportunities with AI is to bring scale and speed to the 'human element' of advisory

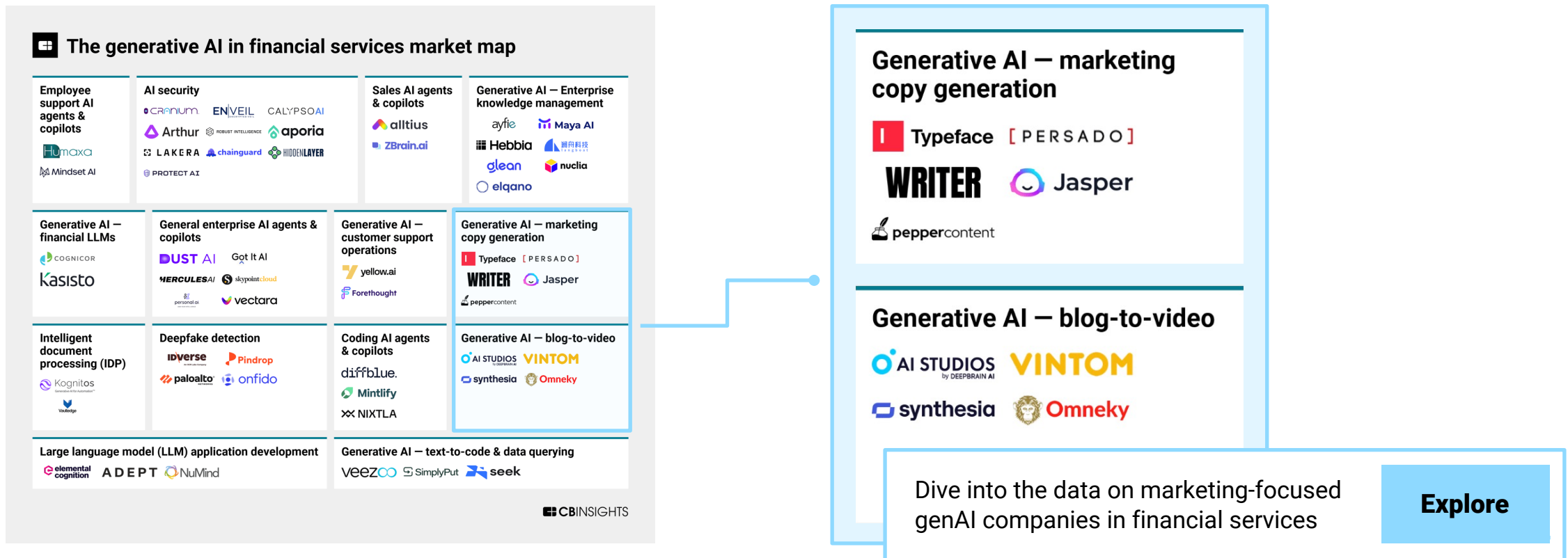
AI can augment financial advisors' capabilities at every point of the wealth value chain



Source: CB Insights research – [The new wealth tech value chain report](#). The visual shows 15 technology markets gaining momentum across wealth management. Companies in these markets either develop AI solutions or enable wealth tech platform integration via APIs.

Personalized client engagement is one of the most mature AI use cases in wealth management

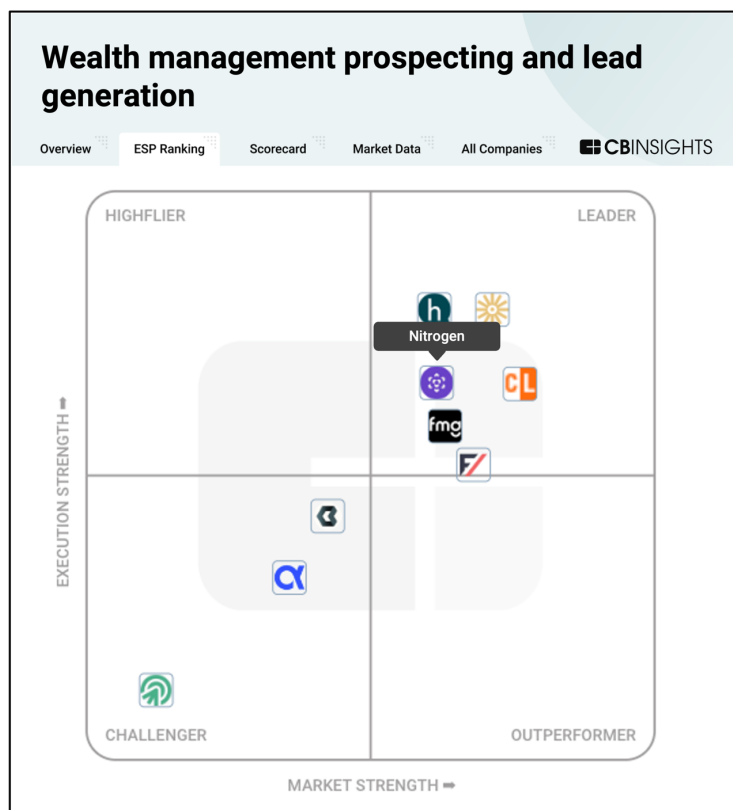
GenAI startups are automating marketing tasks like copywriting and video creation



Source: CB Insights – [The generative AI in financial services market map](#). To identify players for this market map, we reviewed generative AI companies targeting horizontal applications and shortlisted those with funding momentum (received funding since the start of 2022 or with total funding of \$30M+). We then filtered based on the industries the companies serve, selecting companies targeting financial services applications.

For firms looking to build AI into client engagement, integration with existing tech stack is key

Ease of integration is a selling point, as shown by positive customer reactions to Nitrogen's AI-powered client engagement and prospecting tool



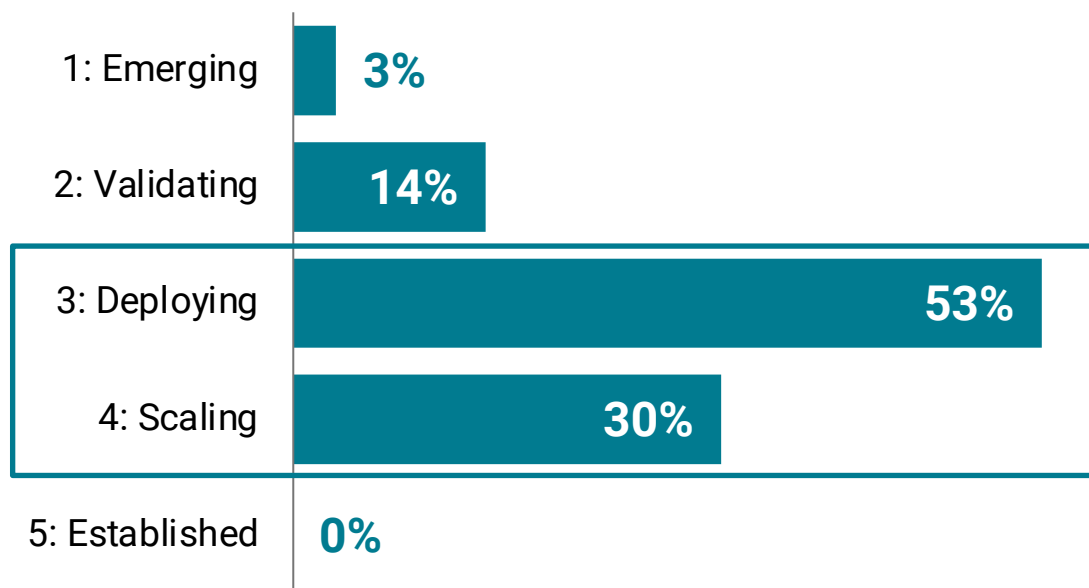
“[The biggest requirement that Nitrogen met for us was] there was no integration required as it was a third-party plug-in provided by Nitrogen Growth Platform. **It fit in with our tech stack seamlessly...since it’s already part of the company we use for that purpose.** It wouldn’t have been a big integration deal otherwise.”

Vice President,
Credit Union

Wealth managers can select from 50+ AI-focused wealth tech partners that have already validated their products

The majority of B2B AI wealth techs are growing client distribution, signaling commercial readiness

Commercial Maturity of B2B wealth tech startups with AI offerings



Potential partners in the Deploying stage or later with high Mosaic scores (measuring business health)

56 Companies | \$2.68B Total Funding (Pre-Exit/IPO)

Companies	Mosaic (Over...)	Commercial Maturity	Country
FundGuard	856	4: Scaling	United States
TIFIN	840	4: Scaling	United States
Alpheya	818	3: Deploying	United Arab Emirates
Canoe Intelligence	817	4: Scaling	United States
Personetics	799	4: Scaling	Israel
Federato	793	4: Scaling	United States
Kasisto	776	4: Scaling	United States
Quartr	775	4: Scaling	Sweden

Explore the data

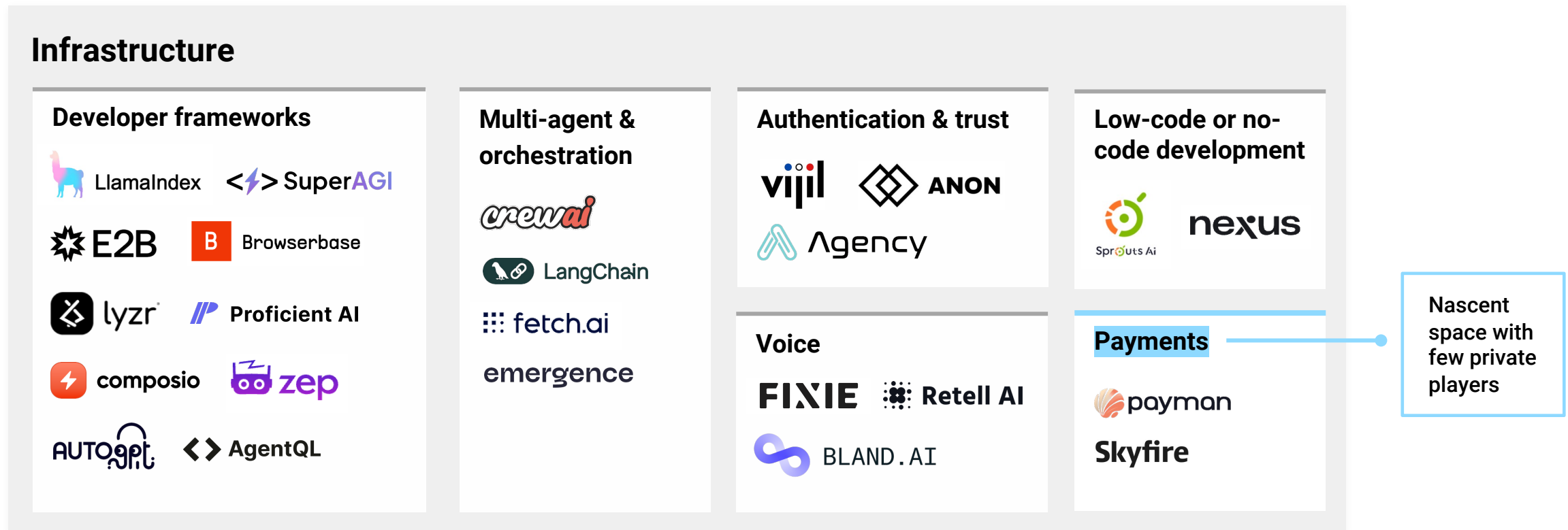
Financial services

AI agents are given money to spend



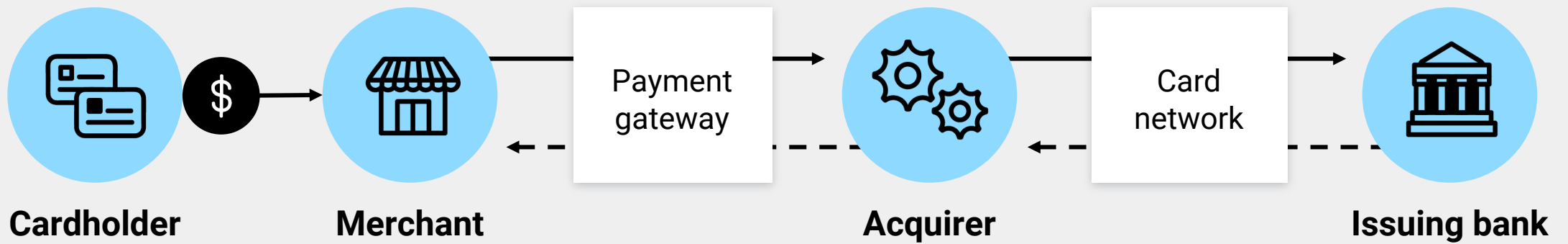
AI agents are emerging across the software landscape, but they're utility is limited until they can make transactions seamlessly

Private companies building the infrastructure for AI agents proliferate



Current payments infrastructure is designed for humans – and keeping bots out

Online payments flow today



Crypto emerges as the first AI payment rail

Early movers Skyfire and Coinbase target agent-to-agent transactions to circumvent human identify verification required for bank accounts and credit cards

Scouting Report CBINSIGHTS

Export Copy link

Skyfire

Generated by CB Insights

Skyfire Scouting Report

Founded 2024 | Total funding: \$9.5M | Stage: Seed VC

- Core Products/Services:** Developing a payment network infrastructure enabling AI agents to perform autonomous transactions without human intermediaries. The platform utilizes blockchain technology and digital stablecoins like USDC, incorporating safeguards to prevent AI overspending and allowing human transaction review. [5]

Select Skyfire investors



Key people

Previous experience

Amir Sarhangi
CEO & co-founder

- VP of Product and Services @ Ripple
- Founder @ Jibe, acquired by Google (2015) – pioneer of RCS messaging protocol now standard on Android

Craig DeWitt
Co-founder

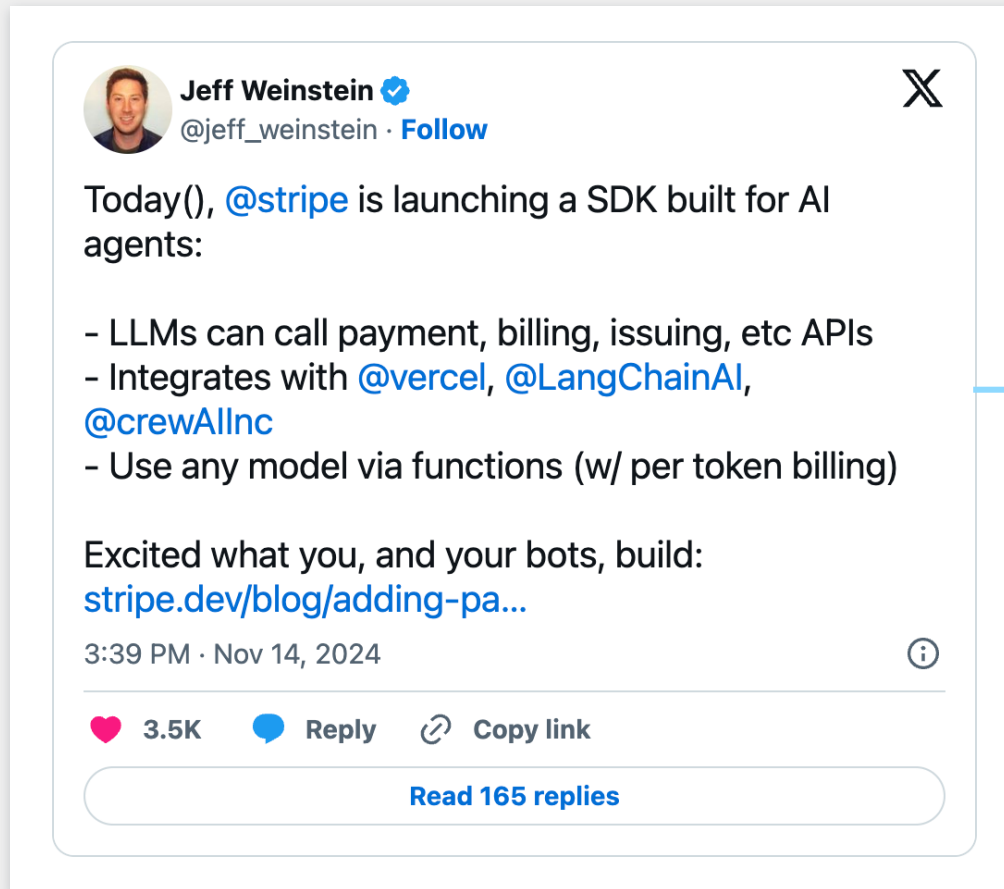
- Senior Director of Product @ Ripple

October 2024

- Coinbase launches capability to create AI agents with crypto wallet
- Skyfire announces integration with Base blockchain, enabling agents to use Coinbase wallets

Stripe launches developer tool to enable agents to spend funds

Stripe's and Coinbase's entry signals a strategic push from established players to lead the emerging agent-enabled payments ecosystem



A screenshot of a tweet from Jeff Weinstein (@jeff_weinstein) on X. The tweet is dated 3:39 PM on Nov 14, 2024, and has 3.5K likes. It announces that Stripe is launching a SDK for AI agents, listing features like calling payment APIs, integrating with Vercel and LangChainAI, and using any model via functions. It includes a link to a blog post and a 'Read 165 replies' button.

Jeff Weinstein ✓
@jeff_weinstein · Follow

Today(), @stripe is launching a SDK built for AI agents:

- LLMs can call payment, billing, issuing, etc APIs
- Integrates with @vercel, @LangChainAI, @crewAllnc
- Use any model via functions (w/ per token billing)

Excited what you, and your bots, build:
stripe.dev/blog/adding-pa...

3:39 PM · Nov 14, 2024

3.5K Reply Copy link

Read 165 replies

Stripe Issuing allows developers to generate single-use virtual cards with spend controls that agents can use to make purchases

Big tech envisions the future of agent commerce, but earning user trust will be key



At Google I/O 2024, CEO Sundar Pichai showcased Gemini performing a shopping return end-to-end (May 2024)

Exploring computer using-agents that can handle personal data like credit card info to accomplish tasks | The Information (October 2024)







AI agents are on the roadmap – including autonomous AI shopping agents

Eventually, “you could maybe give it a budget.” – Trishul Chilimbi, VP & distinguished scientist at Amazon | WIRED (October 2024)

Agent trust layer will emerge as the first big market opportunity

Before autonomous spending can scale, watch for identity verification and access management players to build the “driver's license” for AI agents

Category	Company	Status	Application
Authentication	 ANON	Seed (December 2023)	Developer toolkit enabling agents to authenticate on sites without APIs while protecting the users’ credentials
Identity	 okta	Publicly traded	Auth for GenAI product for developers to provide identity to agents, enabling agents to call APIs on a user’s behalf and receive async authentication from the user
Identity	 PingIdentity*	Taken private (October 2022)	Helix product provides AI agents with identities, enabling organizations to authorize and authenticate them
Identity/ payments network	 Skyfire	Seed (October 2024)	Building “AgentID” that assigns agents a digital wallet with unique identifier & verification service

“For instance, if someone directs an AI agent to book flights...when the price goes below \$200, Async Authentication can send a push notification to the user on the travel app to authenticate on demand and approve the transaction.”
Okta press release (October 2024)

Source: CB Insights company profiles – [Okta](#), [Skyfire](#), [Anon](#), [Ping Identity](#); company releases.

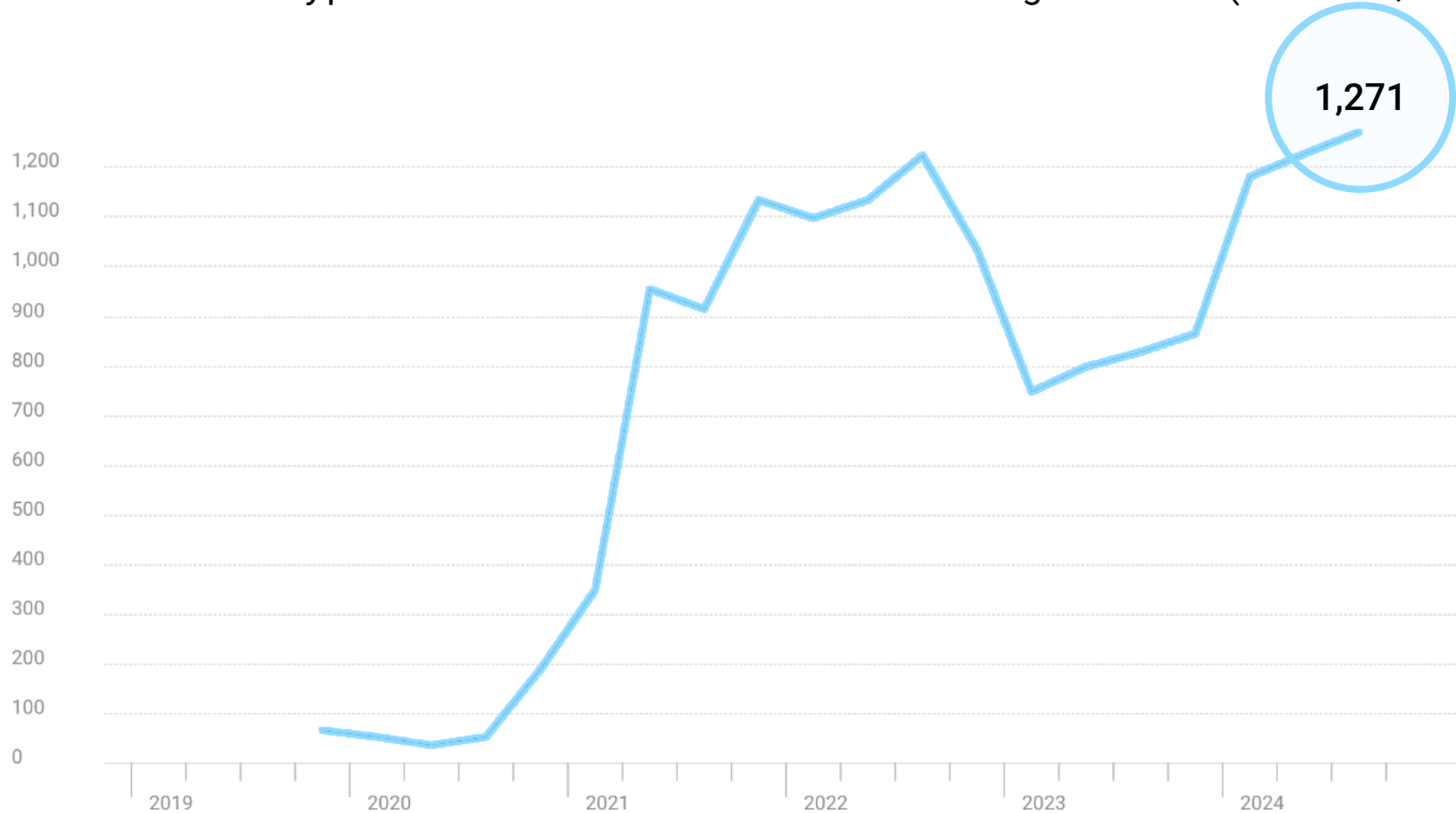
Financial services

Crypto takes more baby steps toward the mainstream



Crypto has returned to the conversation for executives


Quarterly mentions of crypto and related terms on earnings calls (as of Q3 '24)



Payments leaders remain crypto-curious

✔ Indicates at least one new strategic partnership, acquisition, or startup investment in digital currencies or blockchain in 2024 YTD

Payment Networks

	✔	Partnered with Transak to enable crypto-to-fiat conversions (January 2024)
	✔	Partnered with MetaMask and Baanx to launch crypto-to-fiat card (August 2024)
	✔	Partnered with Ripple to integrate \$XRP digital currency (August 2024)
	✔	PayPal Ventures invested in crypto services company Mesh (January 2024)
	✔	Invested in Africa-focused crypto exchange Yellow Card's Series C (October 2024)*

Financial Institutions

J.P.Morgan	✔	Invested in HQLAx, a blockchain-based platform for collateral mobility (April 2024)
WELLS FARGO		
BANK OF AMERICA		
citi		
Capital One		

Tech & Regional Players

Google		
stripe	✔	Acquired stablecoin platform Bridge for \$1.1B (October 2024)
Alibaba.com		
Tencent 腾讯	✔	Invested in \$15M Series A for Chainbase, a Web3 data infrastructure company (July 2024)
adyen		
SAMSUNG	✔	Samsung NEXT backed blockchain company Pi Squared (July 2024)

Merchant Acquirers

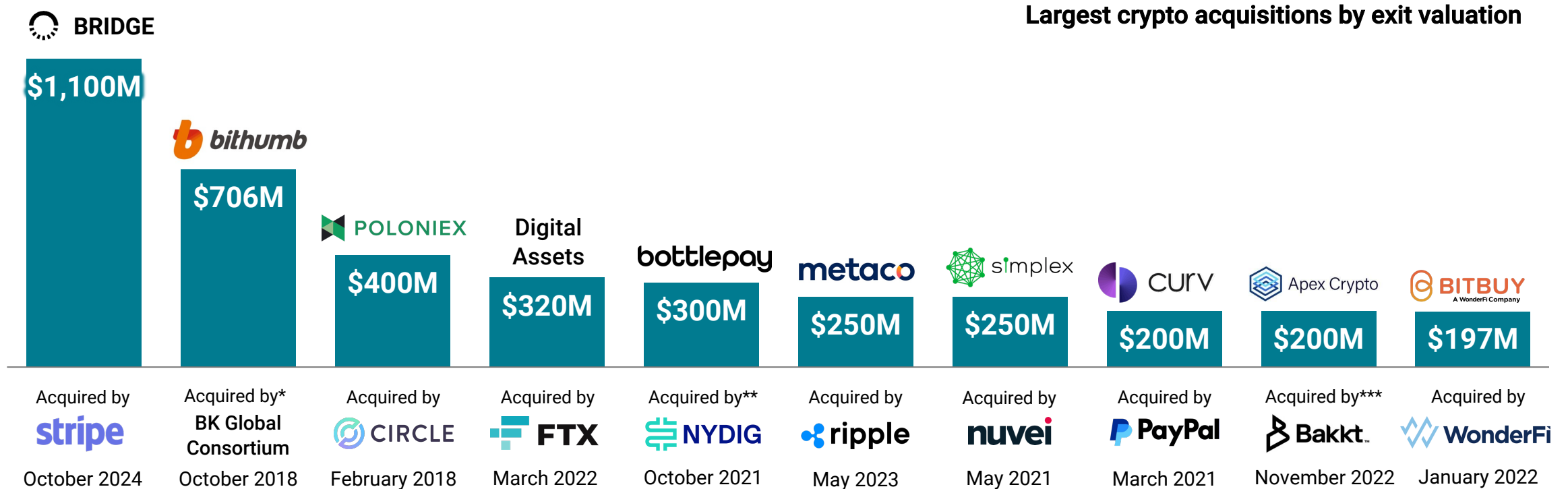
BAJAJ FINSERV		
FIS		
globalpayments		

Source: CB Insights research – [Crypto is showing signs of life in payments.](#)

Note: Per category, payments leaders selected based on market capitalization/valuation and transaction volume. *Block announced in November 2024 it would shut down TBD – its Bitcoin-focused business – to focus on Bitcoin mining and its crypto wallet.

Stablecoins are a bright spot, highlighted by Stripe's \$1.1B acquisition of stablecoin payments platform Bridge

Bridge's exit is the largest crypto acquisition (by exit valuation) ever

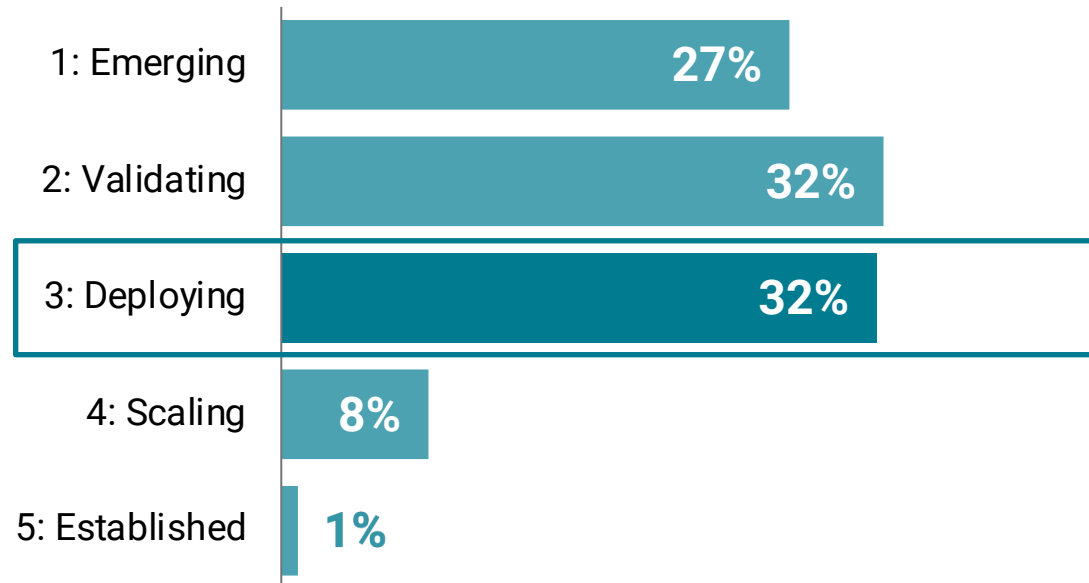


Source: CB Insights [acquisition data](#) (as of 11/1/2024); Visa. Note: First exits only. Excludes: SPAC mergers, bitcoin mining exits, and companies acquired in tokens. *Corporate majority. **Stock purchase. ***As of April 2024, Apex has not met the financial targets required to achieve the full \$200M deal value.

Despite the activity, the broader sector remains immature

Blockchain startups raising funding are behind AI startups in deploying their products commercially – indicating enterprises should vet not prioritize the market

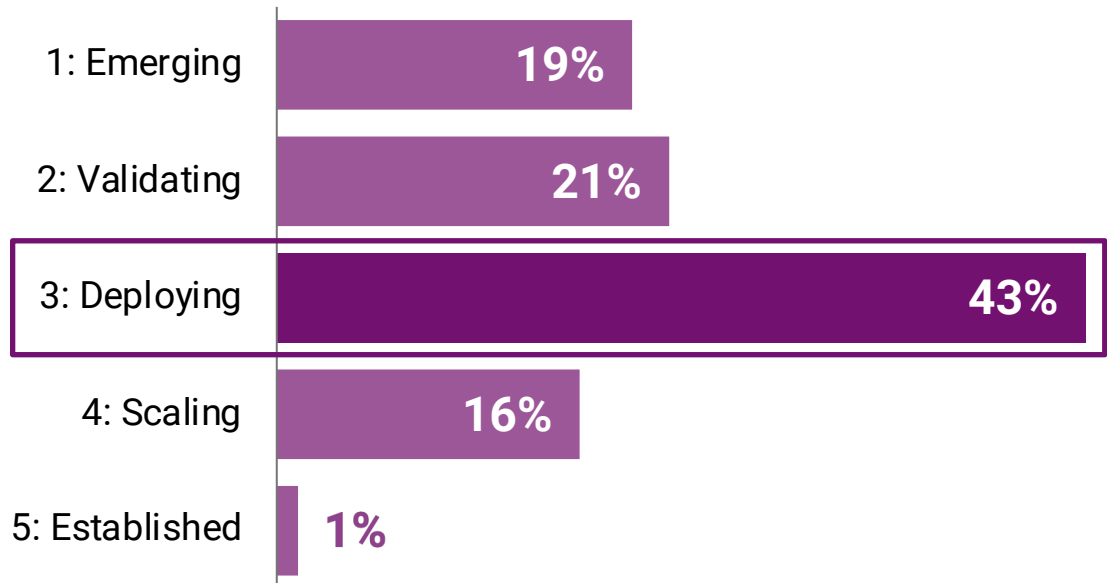
Commercial Maturity of **blockchain** companies funded in 2024 YTD



 [Explore the data](#)

vs.

Commercial Maturity of **AI** companies funded in 2024 YTD



 [Explore the data](#)

Source: CB Insights Commercial Maturity scores (measuring a company's ability to compete for customers or serve as a partner). Data as of 10/31/2024. Companies raising equity deals only.

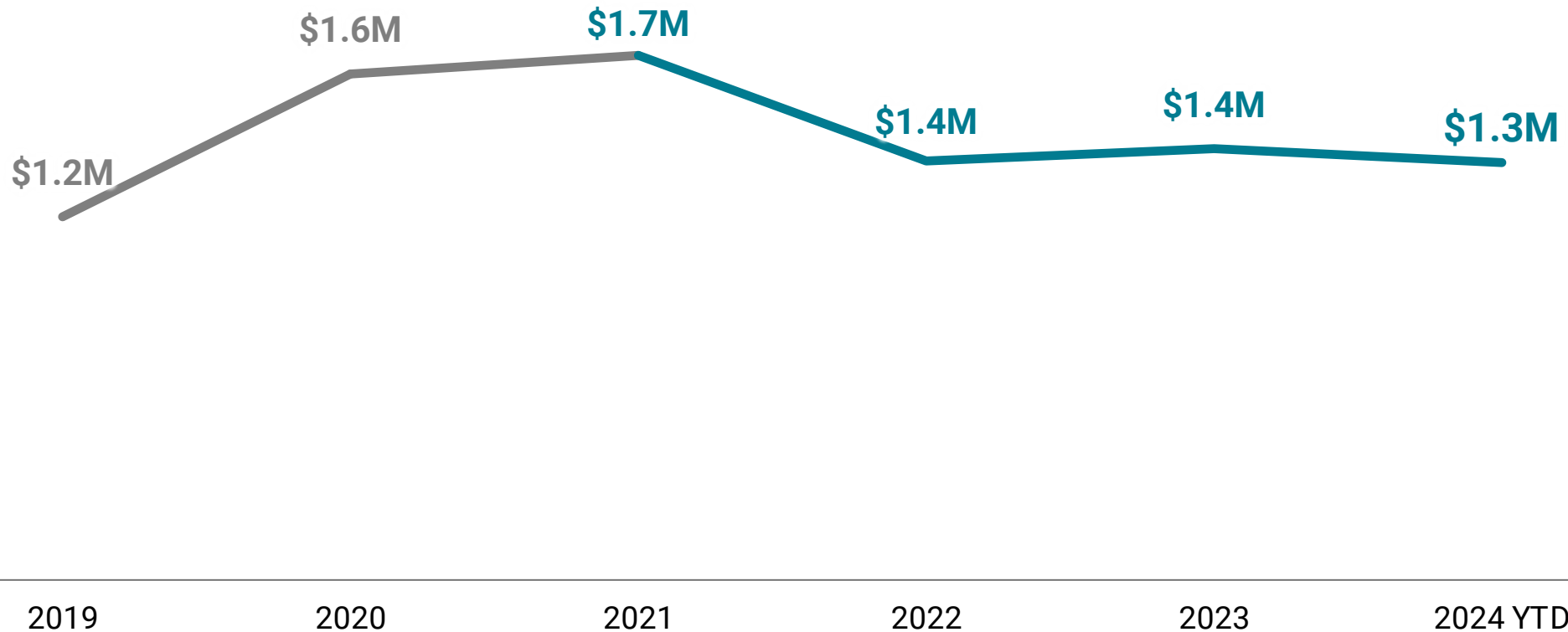
Financial services

Compressed fintech valuations create opportunities for acquirers



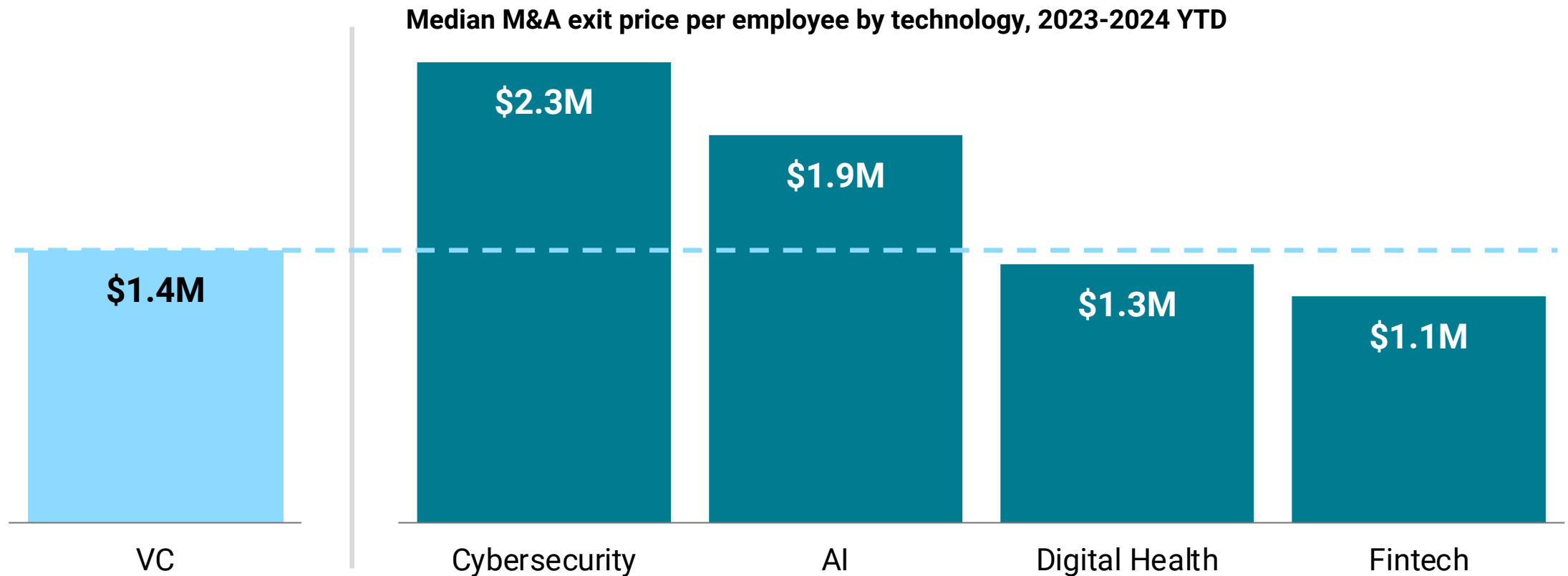
Across VC, exit valuations on a per employee basis have deflated since 2021

Median VC-backed M&A valuation per employee down to \$1.3M in 2024 from \$1.7M in 2021



This isn't just a market correction – it's a shakeout of different types of tech

Fintech valuations in particular haven't kept up with employee headcount amid a tough fundraising environment

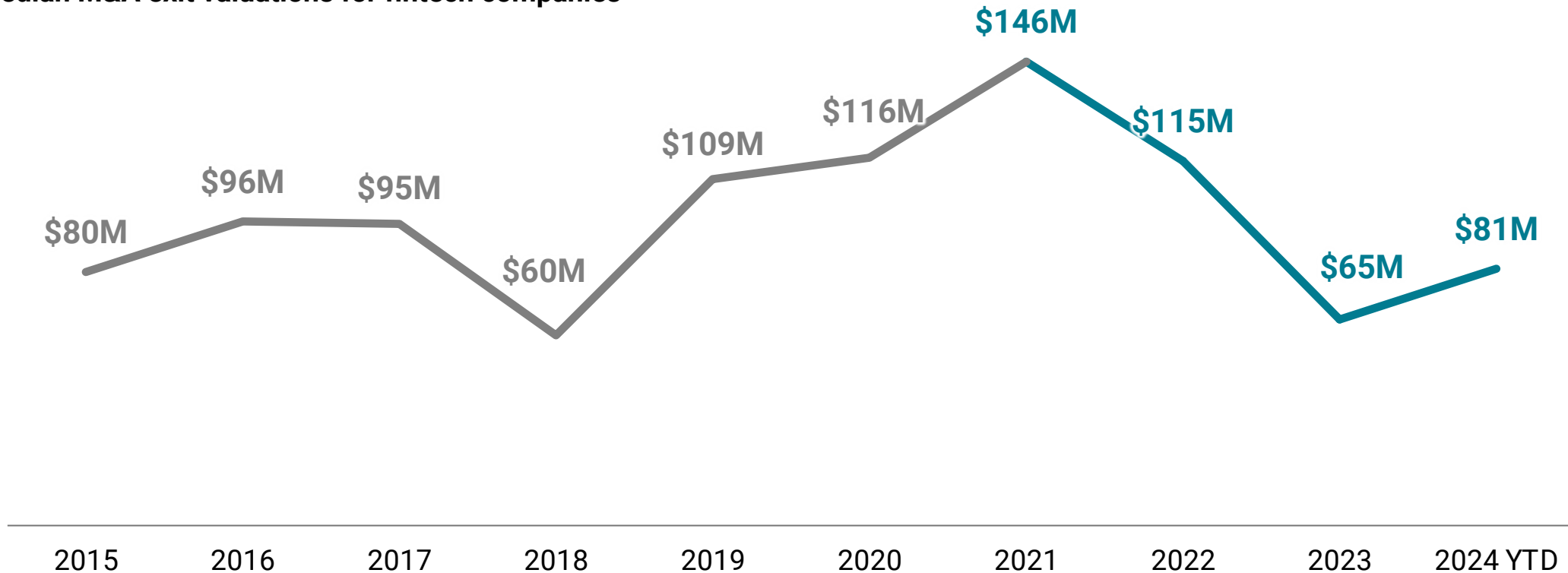


Source: CB Insights valuation and headcount data. "VC" represents the baseline across technologies. Includes exits from 2023 and 2024 YTD (as of 10/29/2024).

Fintech exit valuations have fallen dramatically since 2021 peak

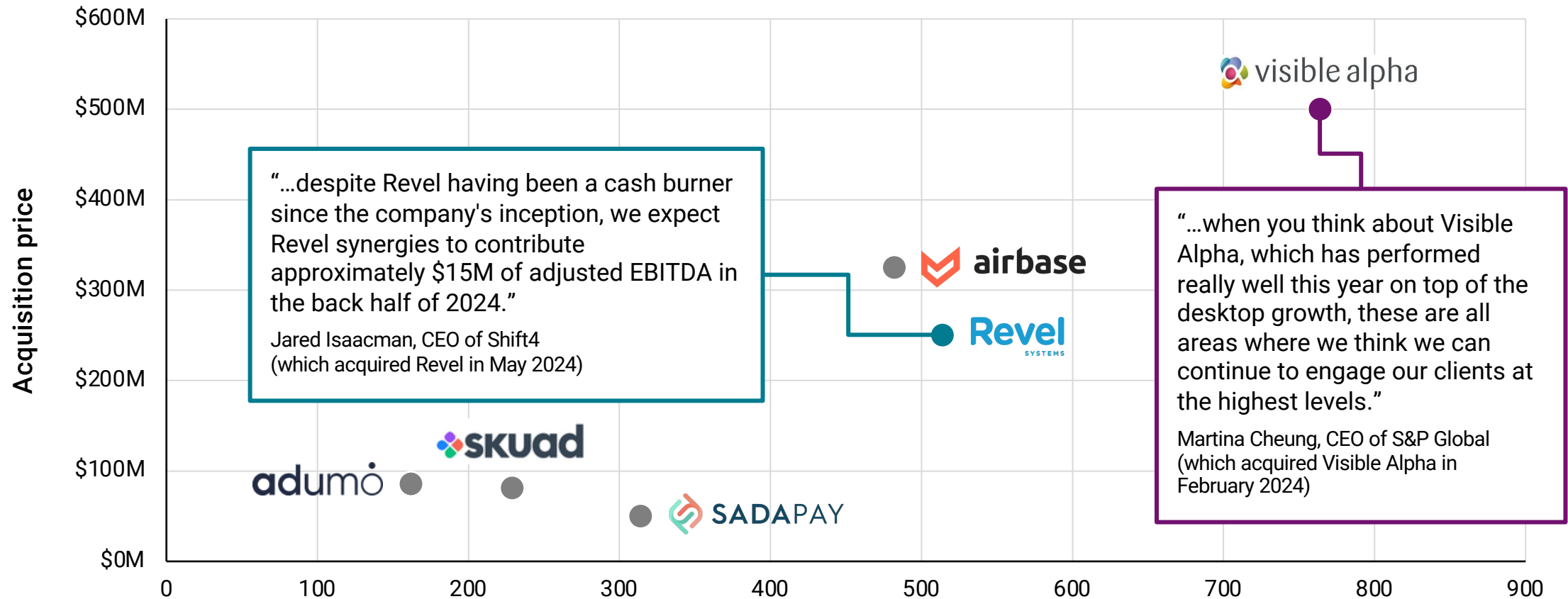
Though 2024 shows signs of a rebound, with strong exits like Stripe's purchase of Bridge

Median M&A exit valuations for fintech companies



2024 acquisitions point to opportunistic consolidation as startups burn cash

















Select fintech acquisitions in 2024, plotted by headcount and price



Source: CB Insights valuation and headcount data as of 10/29/2024.

Employee headcount at exit

Solid fintech teams/products that may have hit growth plateaus signal clear opportunities for acquirers

Companies	M&A Probability \updownarrow	Mosaic (Overall)	12 Month Headcount Change	Country	Business Model
 PayMongo 	50.9%	697	-11.70%	Philippines	B2B B2G Commission
 SourceDay	50.6%	670	-6.86%	United States	B2B SaaS
 Luma	46.9%	613	-6.45%	United States	B2B SaaS
 Future Family 	46.9%	633	-30.14%	United States	B2C Fee-for-service
 PureStream	41.1%	619	-7.69%	United States	B2B SaaS Usage-based
 Spot	40.3%	648	-29.82%	United States	B2B B2C Commission
 Simpl  	38.6%	740	-12.75%	India	B2B B2C Commission
 RedTeam Software 	35.5%	614	-11.30%	United States	B2B SaaS
 Marketplacer  	33.8%	663	-16.94%	Australia	B2B Commission

 See 120+ fintech startups that meet this criteria

Source: CB Insights. We filtered for solid fintech businesses with Mosaic health scores of 600+ out of 1,000, then identified those that may be facing growth headwinds or be strapped for cash (5%+ headcount reduction YoY and no funding over the last 2 years). That yielded [120+ fintech companies](#). Above, we show those most likely to get acquired (30%+ M&A probability) over the next 2 years.

Healthcare & life sciences




Disease management enters a new phase with AI












Companies using AI to precisely evaluate patient symptoms are gaining traction

These companies saw just one deal in 2023 – but in 2024 so far, they’ve seen a flurry of equity investments and acquisitions by industry peers

2023

Companies	Investment Stage	Deal Date	Round Investors
 GYANT  	Series A - II	06/08/2023	OSF Ventures, Wing Venture Capital

2024

Companies	Investment Stage	Deal Date	Round Investors
 GYANT  	Acquired	01/31/2024	Fabric
 Ubie 	Series D	04/12/2024	JA Mitsui Lease Asset, Sumitomo Mitsui Trust Bank
 Sensely 	Acquired	06/04/2024	Mediktor
 Loyal 	Series B	07/22/2024	Concord Health Partners
 Ubie 	Series D - II	10/08/2024	Google Ventures

Source: CB Insights – [symptom checkers & provider discovery market report](#). Data as of 11/18/24.

These solutions typically use a conversational, chatbot-style interface to collect information on patient symptoms through a tailored series of questions. By comparing this data against known disease patterns, these solutions can then calculate the likelihood of certain conditions and provide recommendations regarding the most appropriate type of care and provider for a given patient.

AI is also enabling earlier disease detection – sometimes before symptoms even appear

AI-enabled testing/screening solutions are helping disease management become more proactive across specialties

AI-enabled early disease detection

Alzheimer's disease

RetiSpec

Upper gastrointestinal disease

CytedHealth

Heart disease

cardio intelligence

Depression

LANGaware

Cancer (general)

Harbinger Health

Liver disease

Oncoustics

Eye disease

Mediwhale

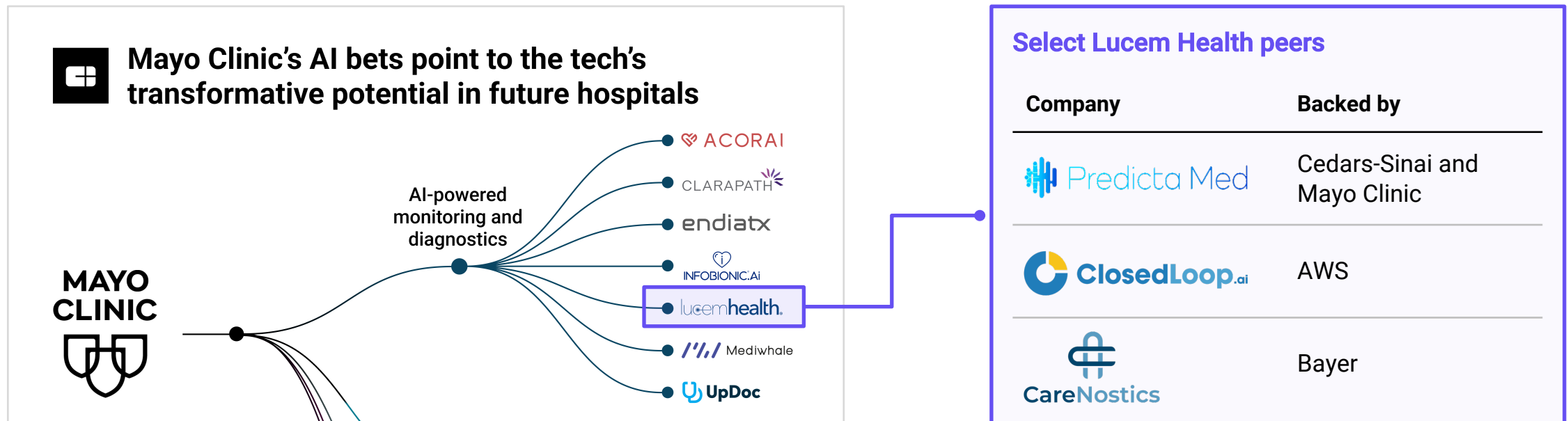
Thoracic disease

core:line

Source: CB Insights – [Advanced search](#). Categories are not mutually exclusive or exhaustive of all conditions being targeted for early detection. Illustration is not exhaustive of all focus areas for each company.







In some cases, AI is helping providers analyze preexisting datasets across entire patient populations to discover at-risk individuals

Startups like Lucem Health – which enable providers to mine health data sources and proactively identify high-risk patients without direct testing – are drawing attention from healthcare and big tech powerhouses



These high-momentum AI-enabled startups are building and scaling their commercial networks as they push toward more proactive patient care

Healthcare strategists should keep an eye on top-ranked* startups as they explore partnership and investment opportunities

Company	Disease focus	Mosaic Commercial Maturity score	Total funding	Select business relationships	Select investors
 ezra	Cancer	831 3	\$43M	Princeton Radiology, Longhorn Imaging Center, RAYUS Radiology	Allianz Life Ventures, Nvidia Inception Program
 eko	Heart and lung disease	801 3	\$168M	3M, AstraZeneca, Mayo Clinic	LG Technology Ventures, National Institutes of Health, 3M Ventures
 qure.ai	Tuberculosis, lung cancer, stroke	783 4	\$126M	Siemens Healthineers, AstraZeneca, Medtronic	Merck Global Health Innovation Fund, Novo Holdings, MassMutual Ventures
 ikerian	Eye disease, vascular disease, neurodegenerative conditions, rare diseases	759 3	\$17M	Doheny Eye Institute, Boehringer Ingelheim, Novartis	Sanoptis
 Caristo diagnostics	Cardiac disease	742 3	\$21M	Agepha Pharma, Venturi Cardiology, Surrey Cardiovascular Clinic	Oxford Science Enterprises, Oxford University
 Mediwhale	Cardiovascular, kidney, eye disease	696 3	\$12M	Severance Hospital, Bundang Jaesaeng General Hospital	AstraZeneca, Mayo Clinic, JLABs Korea

Source: CB Insights – [Advanced search](#). The table above contains VC-backed, AI-enabled early disease detection and prediction startups with a Commercial Maturity score of 3 (Deploying, i.e., growing commercial distribution) or 4 (Scaling, i.e., expanding to additional markets). *Among a list of 50+ similar startups, these players have the highest Mosaic scores, which measure private company health and growth potential. Data as of 10/30/24.

Healthcare & life sciences

Investment floodgates open for RNA therapeutics



The market for RNA therapeutics has taken off since 2016

Therapies target specific genes to silence disease-causing mutations or produce desired proteins

Figure 1: RNA products approved by type

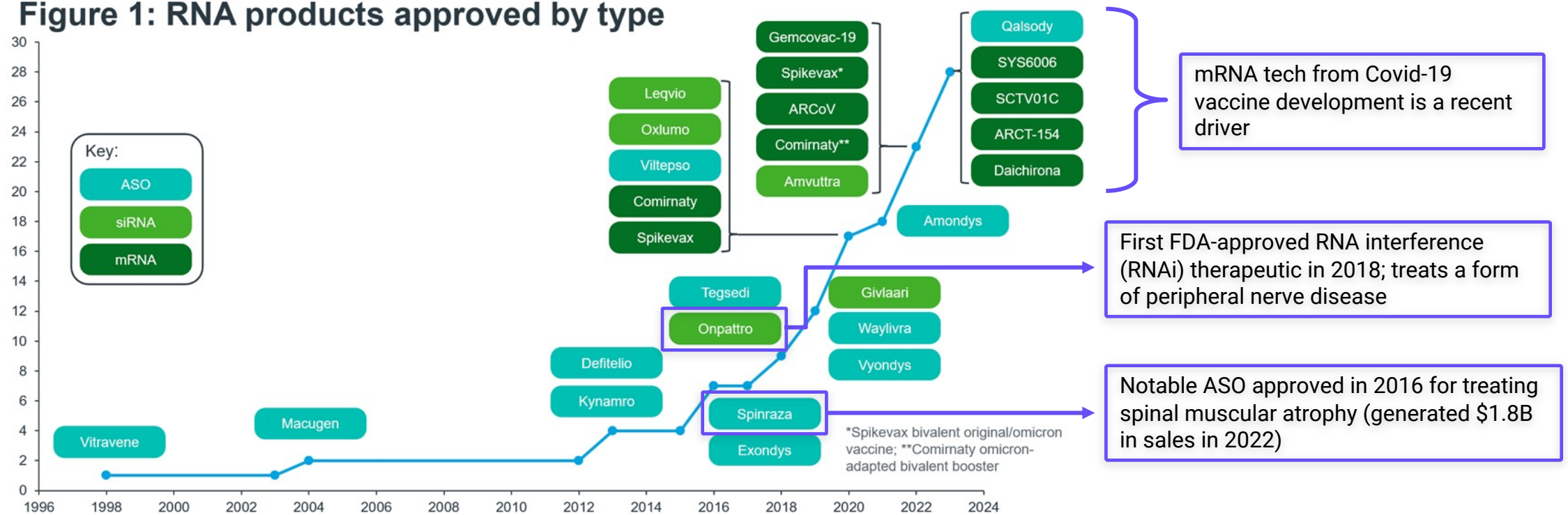


Image source: IQVIA. Data as of November 2023.

RNA therapeutics target traditionally “undruggable” proteins, found in genetic disorders, cancer, cardiovascular disease, and more

3 leading approaches account for 80%* of the RNA therapeutics in development (as of November 2023)

RNA INTERFERENCE (RNAi)

Small RNA molecules that **silence specific genes** by binding to and destroying their messenger RNA, preventing disease-causing protein production.

ANTISENSE OLIGONUCLEOTIDES (ASOs)

Synthetic DNA/RNA strands designed to bind to specific messenger RNA sequences to **modify or block protein expression**.

MESSENGER RNA (mRNA)


A single-stranded RNA molecule that delivers genetic instructions to cells to teach them to **produce specific proteins** like antibodies.

*IQVIA estimate.

Leader Alnylam Pharma advances from liver to brain-targeted therapies, directed at central nervous system (CNS) diseases

Overall, the company has 5 FDA-approved RNAi therapies and 15+ in its pipeline

✦ Earnings Insights
CBINSIGHTS


Q3 FY 2024

Alnylam's pipeline updates highlighted the company's increasing focus on CNS indications, a shift from its historical emphasis on liver-targeted therapies. Programs like ALN-APP for Alzheimer's disease and ALN-HTT02 for Huntington's disease were featured more prominently in the Q3 2024 call, with the company sharing details on trial designs and expected data readouts.

Insights generated by combining CB Insights data and AI

Alnylam Pharma neurologic pipeline (as of October 2024)

Product	Disease	Phase
Mivelsiran (ALN-APP)	Cerebral Amyloid Angiopathy (CAA)	2
Mivelsiran (ALN-APP)	Alzheimer's Disease	1
ALN-HTT02	Huntington's Disease	1
ALN-SOD	SOD1 Amyotrophic Lateral Sclerosis (ALS)	1

Source: CB Insights – [Alnylam Q3'24 earnings call insights](#); Alnylam.

Note: The liver is the easiest place to deliver RNAi molecules, though companies are exploring other tissues.

Biotech startups expand where and how therapies can be delivered to target different types of diseases

Evaluate investment opportunities in the RNAi/ASO market as pharma leaders back newcomers

Company	Location	Latest round	Date	Focus area	Select pharma backers
City Therapeutics	 US	\$135M Series A	October 2024	Novel RNAi trigger molecules and delivery systems	Regeneron Ventures
Leal Therapeutics	 US	\$45 Series A	October 2024	ASOs targeting central nervous system (CNS) disorders	Chugai Venture Fund
Judo Bio	 US	Series A	October 2024	Directing small interfering RNA (siRNA) medicines to the kidney, targeting hypertension, endocrine disorders, etc.	
Hygieia Pharmaceuticals	 China	Series A-II	September 2024	siRNA delivery tech to target both the CNS and peripheral nervous system (PNS)	
Vico Therapeutics	 Netherlands	\$12M Series B	June 2024	Novel ASOs for neurodegenerative disorders	
Sanegene Bio	 China	\$80M Series A	December 2023	Delivery of RNAi drugs to the liver; novel extrahepatic (outside the liver) techniques	
Switch Therapeutics	 US	\$52M Series B	March 2023	Cell-specific RNA therapy that only activates under certain conditions, combining ASO/siRNA benefits	Eli Lilly & Company

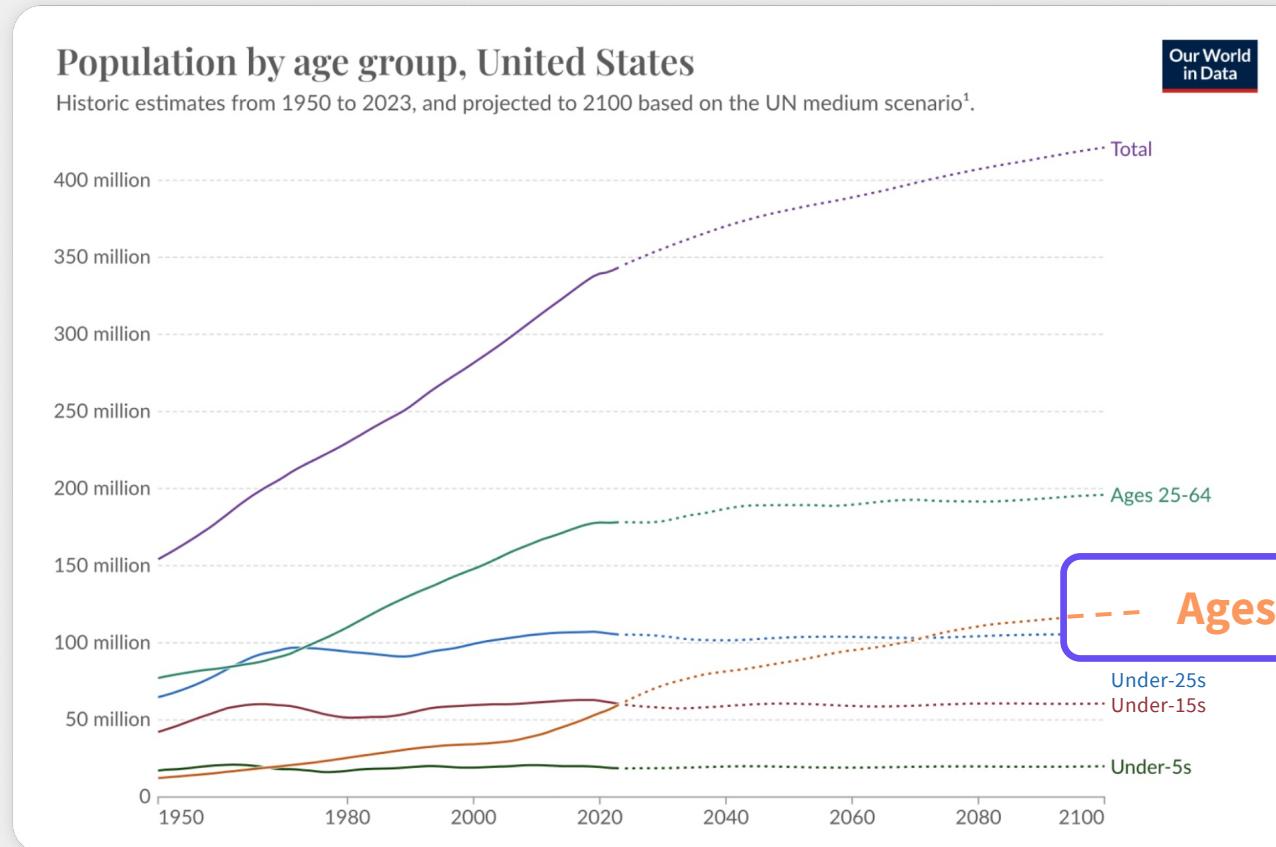
Healthcare & life sciences

Autonomous robots eye caregiving



The US healthcare industry faces a critical staffing shortage amid a rapidly aging population


Projected shortages of over 139,000 physicians and 63,000 nurses by 2030



Source: Our World in Data, Physician workforce in the United States of America: forecasting nationwide shortages (Zhang et. al), American Association of Colleges of Nursing.

Healthcare leaders look to advanced robotics for solutions

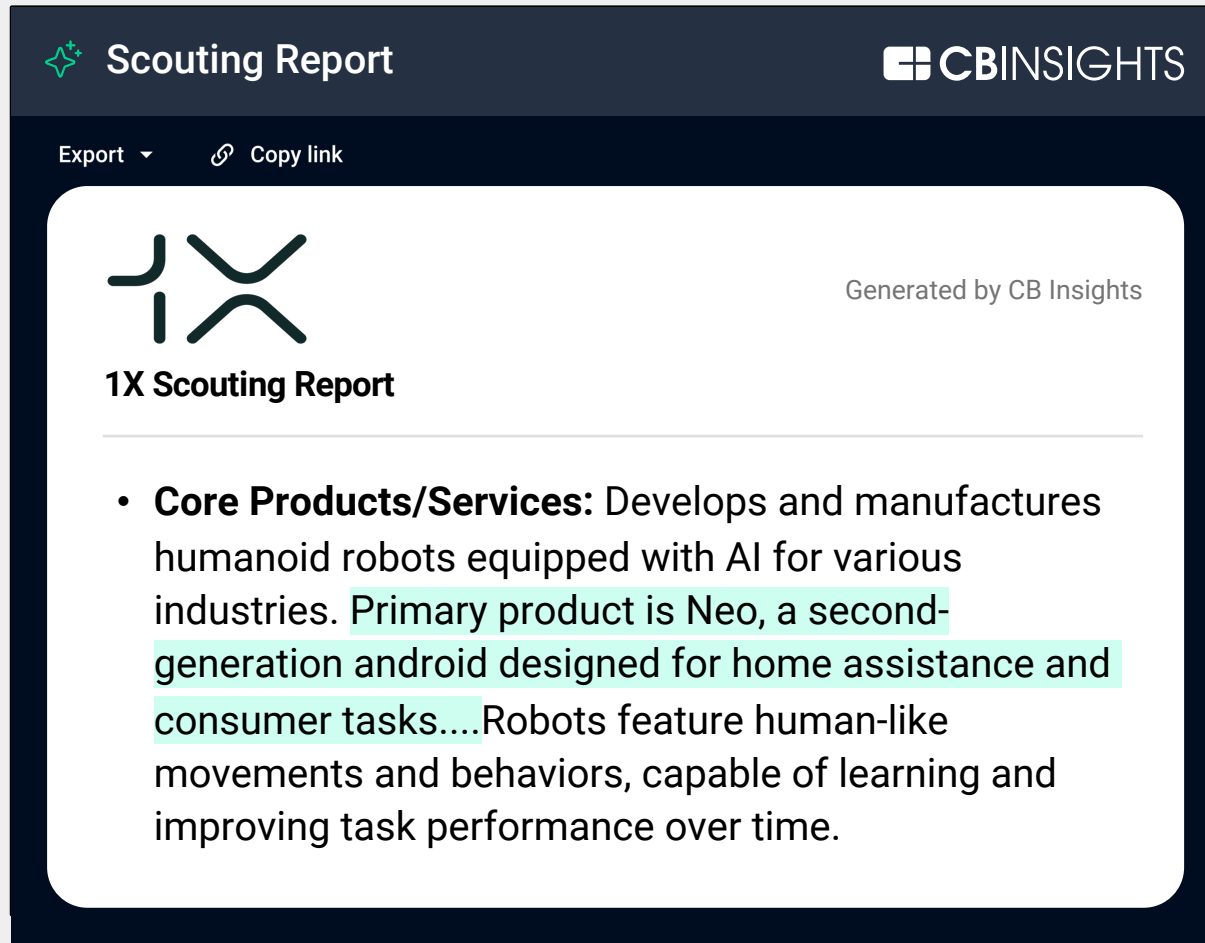
Categories in focus include caregiving support, hospital operations and logistics, lab automation, and remote care delivery

Caregiving support  HUMAN IN MOTION ROBOTICS	Exoskeletons for rehabilitation and mobility assistance	Latest round: \$10M Series A (May 2023) Mosaic: 573	Select partners: Toronto Rehabilitation Institute, Shirley Ryan AbilityLab
Hospital operations  diligent	Service robot that assists clinical staff with non-patient-facing tasks, like supply delivery	Latest round: \$44M Series C (June 2024) Mosaic: 809	Select clients: Northwestern Medicine, Cedars-Sinai, and Rochester Regional Health
Lab automation  CLARAPATH	Automated tissue sectioning and transfer system	Latest round: \$36M Series B (July 2024) Mosaic: 751	Select investors: Northwell Holdings & Ventures, Mayo Clinic, Ochsner Ventures, CU Healthcare Innovation Fund
Remote care delivery  endiatx	Microrobotic pill that functions as a virtual endoscope for real-time internal imaging	Latest round: \$1.4M convertible note (October 2023)	Select investor/licensor: Mayo Clinic

Source: CB Insights research — [Robots are coming for healthcare.](#)

Note: Select deals based on application novelty and healthcare stakeholder relationships. Mosaic = startup health score out of 1,000 (as of 11/14/2024).

Highly capable humanoid robot developers eye caregiving applications



The screenshot shows a dark-themed interface for a 'Scouting Report' by CB Insights. At the top left is a star icon and the text 'Scouting Report'. At the top right is the CB Insights logo. Below this are 'Export' and 'Copy link' options. The main content area features the 1X logo, the text 'Generated by CB Insights', and the title '1X Scouting Report'. A bullet point describes the company's core products and services.

Scouting Report

Export Copy link

Generated by CB Insights

1X Scouting Report

- **Core Products/Services:** Develops and manufactures humanoid robots equipped with AI for various industries. Primary product is Neo, a second-generation android designed for home assistance and consumer tasks.... Robots feature human-like movements and behaviors, capable of learning and improving task performance over time.



The company's "master plan" highlights a long-term business opportunity: **"700M aging population in need of at-home care"**



Tesla Optimus Robot

"What can it do? It can basically do anything you want. It can be a teacher, babysit your kids, it can walk your dog, mow your lawn, get the groceries, just be your friend, serve drinks."




Tesla CEO, Elon Musk

Riding wave of market interest, autonomous robots have healthcare in view

Healthcare leaders should explore partnerships and pilots now to prepare for next 10 years

Leading private humanoid robotics companies by Mosaic score & public companies with targeted healthcare/caregiving applications

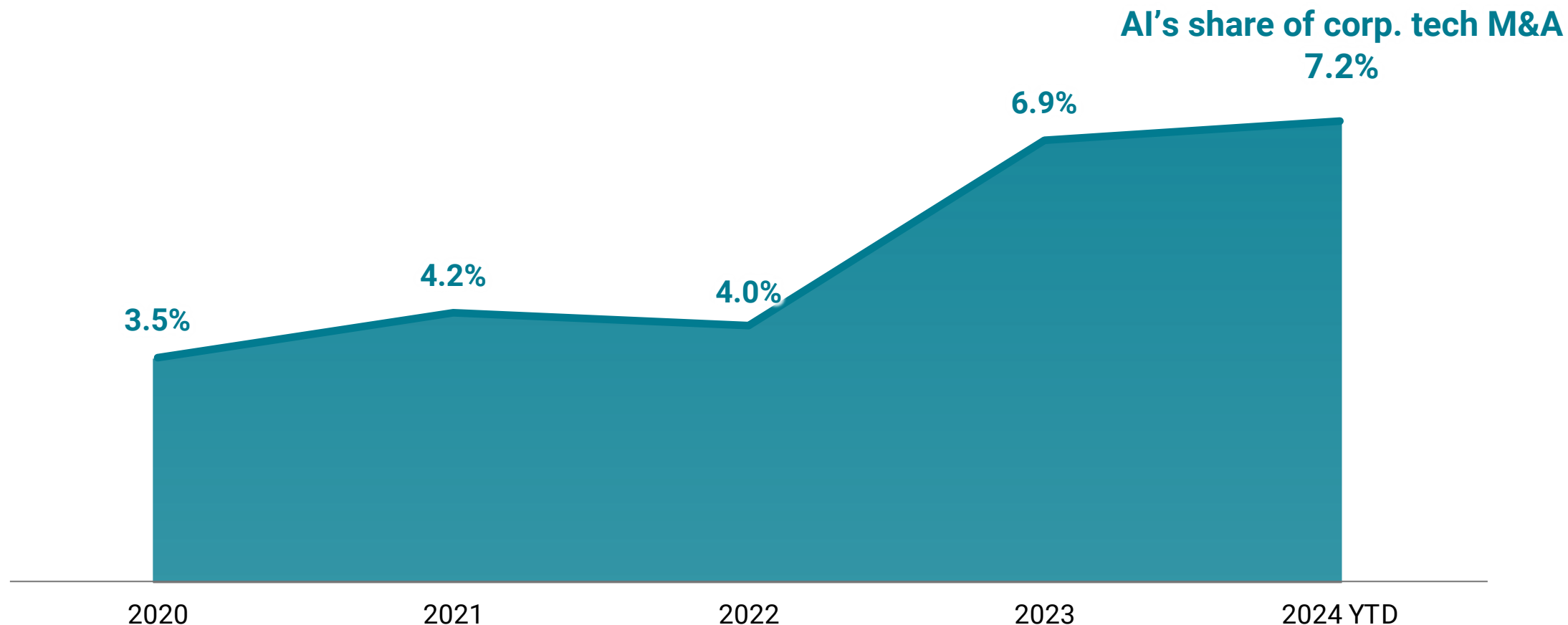
✓ Current target areas*
 ✓ Anticipated target areas*

Company	Mosaic	Commercial Maturity	Manufacturing	Logistics	Retail	Healthcare
FIGURE	879	2: Validating	✓	✓	✓	✓
	798	2: Validating	✓	✓	✓	✓
A P P T R O N I K	692	3: Deploying	✓	✓	✓	✓
 mentee robotics	654	2: Validating	✓	✓	✓	✓
 SKILD AI	651	2: Validating	✓	✓		✓
T E S L A	Public	-	✓	✓	✓	✓
UBTECH	Public	-	✓	✓	✓	✓

AI

AI M&A fuels the next wave of corporate strategy








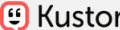












Since 2020, AI's share of corporate tech M&A has doubled as corporations race to grab AI tech & talent






















The top dogs of AI M&A right now: Nvidia, Snowflake, Accenture, Databricks

Big tech used to dominate AI M&A; now it's mainly AI infra & data mgmt. players

Top acquirers in 2020-21: Big tech & gaming

Rank	Acquirer	# of AI acquisitions	Select acquisitions
1		7	 xnor.ai  Dark Sky CURIOUS AI  Voysis™
2		5	 AI BEVERIE  SCAPE  Kustomer  Mapillary
3		4	 OTO  RESTAR  ARTOMATIX  FINGER FOOD  ADVANCED TECHNOLOGY GROUP
3		4	 SUPLARI  CYBERX  twohat SECURITY  Orions Systems











Top acquirers in 2023-24 YTD: AI infrastructure, data mgmt., & consulting

Rank	Acquirer	# of AI acquisitions	Acquisitions
1		4	 OMNI™  run:ai  deci  OctoAI
1		4	 neeva  myst ai  truera  si SU
1		4	 NEXTIRA  OCELOT  JIXIE  Flutura Part of Accenture
1		4	 mosaic™  Einblick OKERA  rubicon

Source: CB Insights data on tech company exits. "AI" covers companies developing AI solutions, including cross-industry applications, industry-specific products, AI development tools, and more – with a focus on those using AI as a core part of their products or services.

Some leaders are doubling down on AI acquisitions to embed AI across their offerings

Nvidia, Salesforce, and Thomson Reuters have all accelerated AI M&A this year, each with a focus on offering broader AI solutions in their domains

Acquirer	# of AI acquisitions in 2024 (vs. 2023)	2024 acquisitions
 NVIDIA	3 in 2024 (vs. 1 in 2023)	 deci  run:ai  OctoAI
 salesforce	2 in 2024 (vs. 1 in 2023)	 [ZOOMIN]  TENYX
 THOMSON REUTERS	2 in 2024 (vs. 1 in 2023)	 SafeSign Technologies  Materia

Nvidia nets record revenue as it expands its presence along the AI value chain

✦ Earnings Insights

CBINSIGHTS

 NVIDIA Q2 FY 2025

Nvidia's end-to-end AI solutions drive record Q2 FY 2025 results

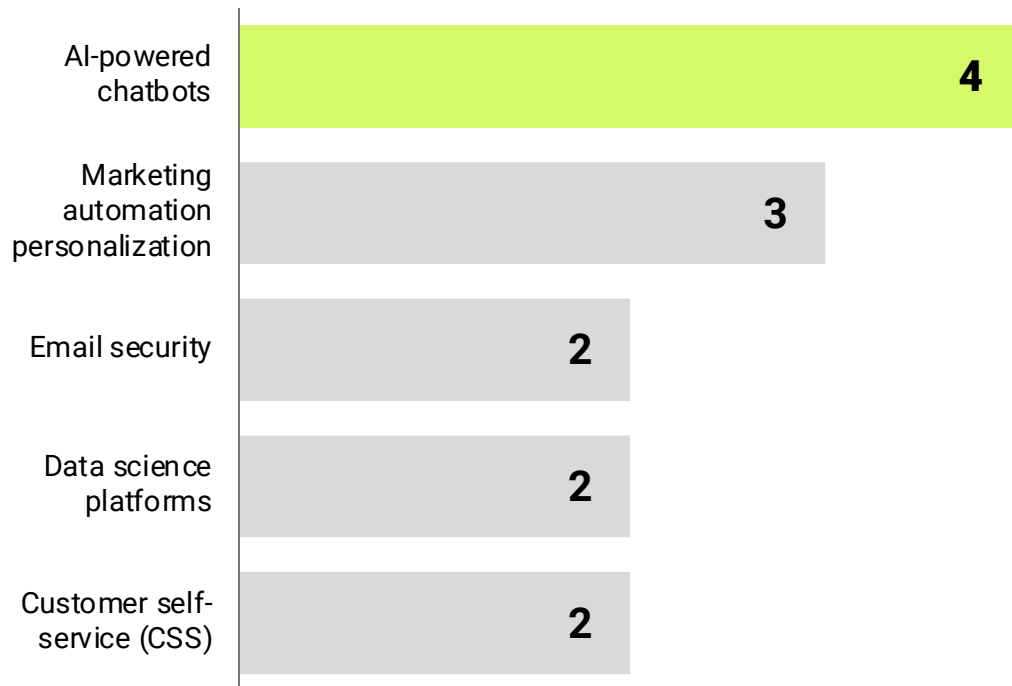
Nvidia reported record Q2 FY 2025 revenue of \$30 billion, up 15% sequentially and 122% year-on-year, driven by the explosive growth in demand for AI infrastructure. The company's data center segment, which includes GPUs, CPUs, networking components, and software for AI and high-performance computing, grew 16% sequentially and 154% year-on-year to \$26.3 billion. Nvidia's **strategic focus on developing end-to-end solutions, from chips to systems and software, has created a formidable competitive advantage** in the AI space.

Insights generated by combining CB Insights data and AI


Two customer-facing tech markets – AI chatbots and marketing personalization – lead this year in corporate AI acquisitions

AI chatbots is the hottest tech market in the current corporate AI M&A environment

AI acquisitions in 2024 YTD














Corporate M&A teams pile into AI chatbot market

Company	Acquirer	Date
TENYX		09/03/2024
AMELIA	SoundHound	08/08/2024
Ultimate.	zendesk	03/13/2024
indigo.ai	VEDRAI <small>DATA. DECISIONS. VALUE.</small>	01/10/2024

Which AI startups are incumbents most likely to acquire next?

Eight AI startups with corporate backers lead the pack with high M&A probability, solid momentum, and strong management teams

Company	M&A probability	Mosaic Commercial Maturity score	Focus area	Select corporate/CVC backers
 STRIKEREADY	55%	701 4	Security operations center (SOC) AI agent/copilot	HITACHI
 SewerAI	50%	707 3	Computer vision & digital twins for infrastructure mgmt.	Bentley
 Arbol	46%	695 3	Parametric insurance for climate risk	OPERA (the venture arm of BNP Paribas) <small>Tech Ventures</small>
 warp	45%	782 4	Coding AI agent/copilot	G/ (Google Ventures)
 ambi ROBOTICS	45%	714 3	Warehouse robots for picking, packing, & sorting	pitney bowes 
 VOLTRON DATA	44%	632 3	Data processing for AI/ML workloads	G/
 Neuron7.ai	43%	696 3	AI copilot for complex service requests (e.g., hardware repair)	servicenow
 CARDINALOPS	43%	683 3	AI-powered threat detection	 REPSOL  Sumitomo Corporation

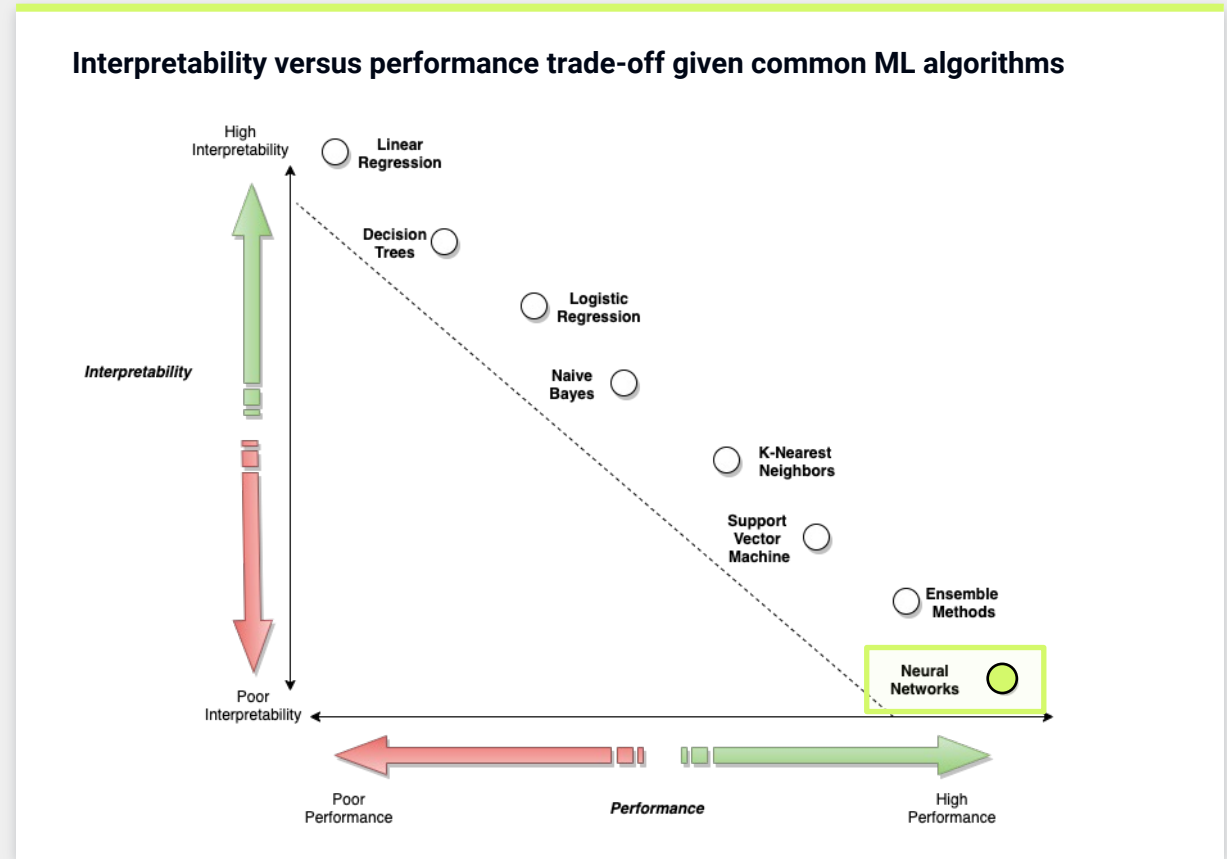
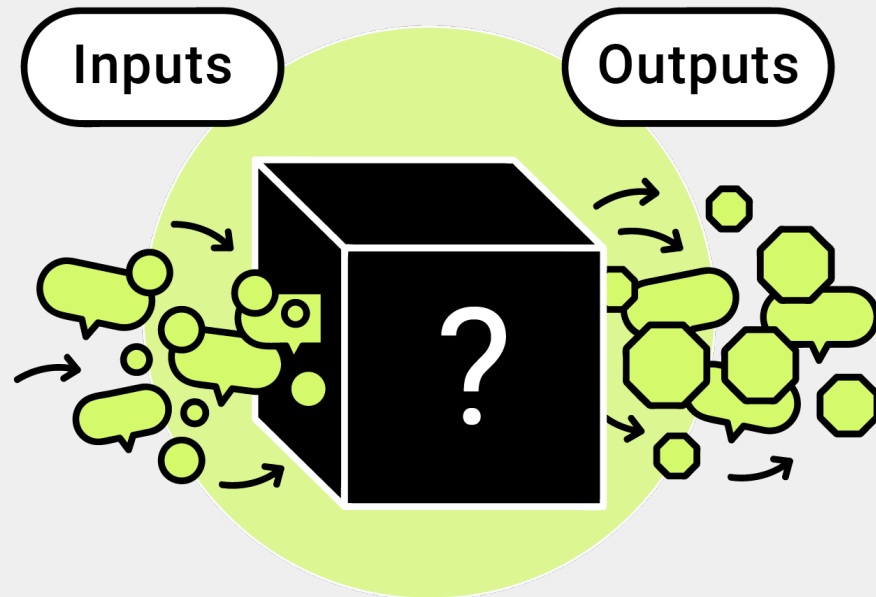
Source: CB Insights – platform search. M&A probability data as of 11/5/24.

Note: We started with [a pool of 4,500+ AI companies](#) that 1) have a B2B business model and 2) have received investment from a corporation or CVC. We filtered down for those with healthy businesses (Mosaic score 600+) and strong management teams (Management Mosaic score 600+) – resulting in [500+ companies](#) – then zeroed in on those with 40%+ M&A exit probability to get [the above 8 results](#).

 Explore these 8 startups

AI has a “black box” problem

With highly complex neural networks (like LLMs), it's especially hard to understand how they arrive at their outputs and what drives their decision-making process



Researchers are actively investigating techniques to understand why LLMs say what they say – and how we might better control them

Explainability techniques for pre-trained LLMs

Local analysis <i>Aims to explain specific model predictions</i>	
Feature Attribution Analysis	<ul style="list-style-type: none"> Gradient-Based Methods Perturbation-Based Methods Vector-Based Methods
Dissecting Transformer Blocks	<ul style="list-style-type: none"> Analyzing MHSA Sublayers Analyzing MLP Sublayers
Global analysis <i>Methods focused on model-wide understanding</i>	
Probing-Based Methods	<ul style="list-style-type: none"> Probing Knowledge Probing Representations
Mechanistic Interpretability	<ul style="list-style-type: none"> Circuit Discovery Causal Tracing Vocabulary Lens

Notable research area focused on “reverse engineering” neural networks

Leveraging explainability (applications)

Model Editing	<ul style="list-style-type: none"> Hypernetwork Knowledge Editors Locate-Then-Edit
Enhancing Model Performance	<ul style="list-style-type: none"> Improving Utilization of Long Text Improving In-Context Learning
Controllable Generation	<ul style="list-style-type: none"> Reducing Hallucination Ethical Alignment

Source: “From Understanding to Utilization: A Survey on Explainability for Large Language Models,” Luo and Specia (February 2024).

Note: Explainability refers to methods and techniques applied after-the-fact to understand how a model makes decisions.

Leading model developers drive new breakthroughs in understanding LLM behavior

While the field is still in the early stages, recent advances highlight the potential of scaling interpretability

ANTHROPIC

“Scaling Monosemanticity: Extracting Interpretable Features from Claude 3 Sonnet” (May 2024)

Researchers identified tens of millions of specific "features" inside the model (like a map of what it knows) & ability to manipulate these features to change how the model behaves

OpenAI

“Scaling and evaluating sparse autoencoders” (June 2024)

Researchers developed new methods – using a smaller neural network – to map 16M features (interpretable patterns of neural activity found within language models) of a frontier LLM

Explaining model behavior is important for earning users' trust – and critical for regulated industries

Explainability advances will support further adoption of complex models

MEDICAL DECISIONING



“Machine learning and AI models anchored on consumer preferences and prior experiences across our provider network have been built for weight loss. **We are also moving toward integrating explainability into the EMR, further empowering providers with these groundbreaking tools.**”

Hims Q2 FY 2024, CEO Andrew Dudum

AUTONOMOUS VEHICLES



“In addition to creating training datasets for this [autonomous delivery vehicle customer’s] computer vision perception models, **we’ve expanded our scope to include fine-tuning of the client’s LLMs built for real-time explainability of the autopilot’s decisions.**”

Telus International Q1 FY 2024, CEO Jeff Puritt

CREDIT DECISIONING



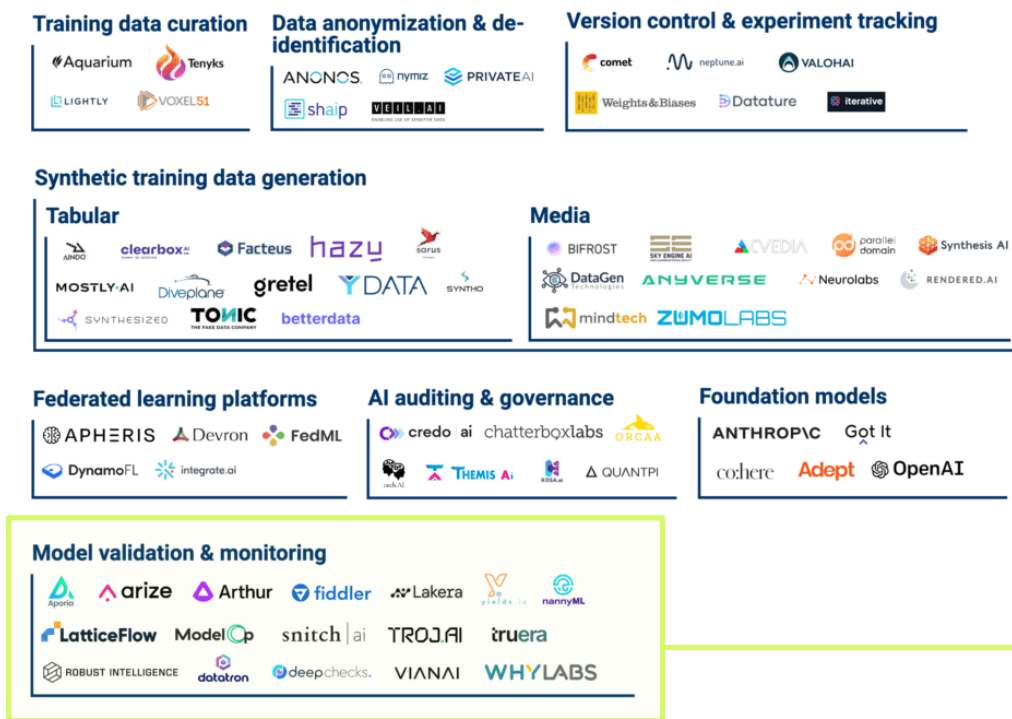
“To date, Equifax has about **70 approved AI patents supporting our AI neurodecisioning technology, which we call NDT and explainable AI**, which is critical to ensuring that the correct data is used to make credit decisions that surface by AI models and scores.”

Equifax Q3 FY 2023, CEO Mark Begor

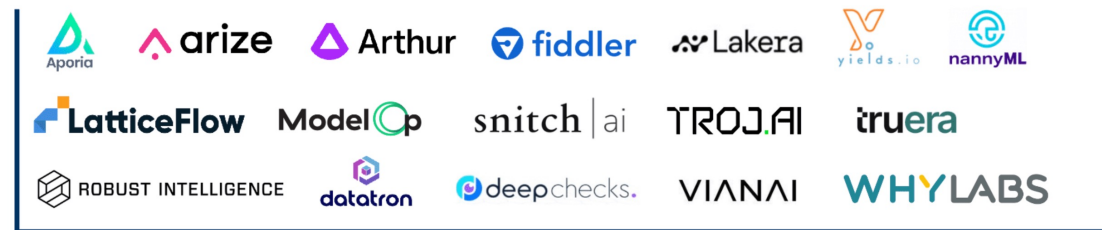
Companies in model validation & monitoring – an already established category in ML – are now targeting enterprise deployments of LLMs

Companies in this category focus on identifying model vulnerabilities, mitigating bias, and improving performance against adversarial attacks

The responsible AI market map



Model validation & monitoring



Emerging startups focused on mechanistic interpretability go a step further to help companies steer models

Watch this market for investment & partnership opportunities, though LLM developers may move to offer these tools as well beyond their research efforts

Mechanistic interpretability

Delete
Clone list

List
Recent Developments
Charts

Companies (6)
+ Add Company
Edit Columns
Download

















<input type="checkbox"/>	Companies	Description	Total Funding	All Investors
<input type="checkbox"/>	Martian	Martian provides services for artificial intelligence performance and ⋮	\$18.00M	Carya Venture Partners, General Catalyst,
<input type="checkbox"/>	Guide Labs	Guide Labs specializes in the development of interpretable foundation ⋮	\$9.82M	Y Combinator
<input type="checkbox"/>	Goodfire AI	Goodfire AI specializes in AI interpretability, focusing on creating tools fo ⋮	\$7.00M	Bluebird Capital, Juniper Ventures,
<input type="checkbox"/>	Leap Laboratories	Leap Laboratories (Leap Labs) focuses on accelerating basic research ⋮	\$3.00M	Speedinvest
<input type="checkbox"/>	EleutherAI	EleutherAI is a research institute that specializes in artificial intelligence, ⋮		
<input type="checkbox"/>	Iluvatar	Iluvatar specializes in human-centered AI research and products within th ⋮		

AI

Open-source cedes top LLMs but dominates smaller models



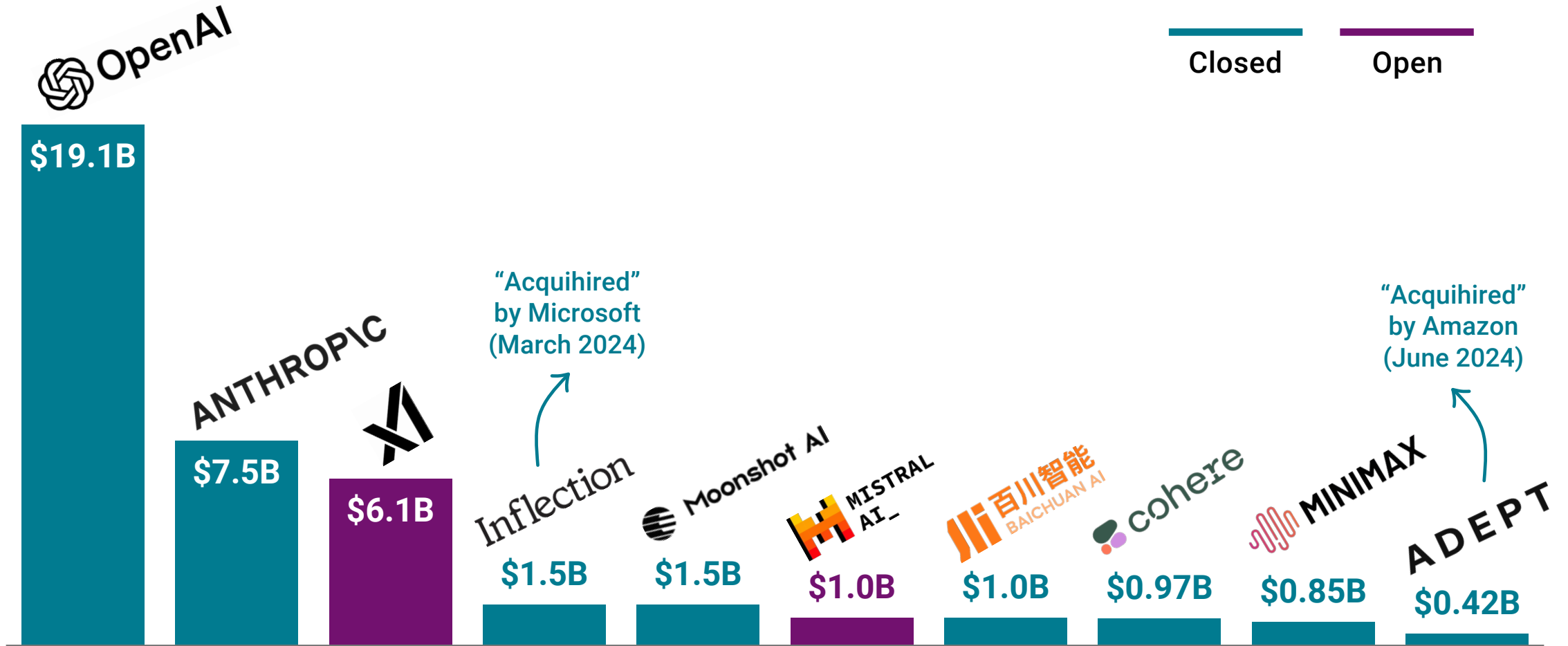
Big tech's dominant approach is to prioritize closed flagship models while also releasing lighter-weight open models

Public company	Market cap	Country	Dominant approach	Notable closed activity	Notable open activity
 NVIDIA	\$3.60T	 US	Open	Invested in multiple closed model developers	Introduced NVLM 1.0 multimodal frontier-level LLM family (September 2024)
	\$3.45T	 US	Closed	Announced proprietary on-device and server foundation models (June 2024)	Released OpenELM model family (April 2024)
 Microsoft	\$3.17T	 US	Closed	Multi-billion-dollar investment in OpenAI; rumored to be working on 500B parameter MAI-1 model (May 2024)	Released Phi-3 small language models (April 2024)
 amazon	\$2.22T	 US	Closed	Amazon Titan foundation model family available on Amazon Bedrock	Supports open-source AI models on AWS infrastructure
 Google	\$2.01T	 US	Closed	Announced flagship Gemini 1.5 model (February 2024)	Introduced lightweight Gemma model family (February 2024)
 Meta	\$1.46T	 US	Open		Introduced Llama 3.1 frontier-level model family (July 2024)
 Tencent 腾讯	\$532.9B	 China	Closed	Announced Hunyuan Turbo foundation model (September 2024)	Text-to-image large model Hunyuan-DiT released (May 2024)
 Alibaba	\$214.3B	 China	Open	Flagship Qwen language models available via API	Launched Qwen2.5 family of over 100 models (September 2024)

Source: CB Insights company data; company releases.

Note: Market cap data as of 11/15/2024. Companies selected based on market cap & regional relevance. Developers open-sourcing AI models do so on a spectrum, sharing some combination of model weights, underlying source code, and original training data.

In the private market, closed LLM developers lead in equity funding



High compute costs, limited moats, and big tech competition have created a market ripe for a shake-up

Recent pivots and quasi-exits among foundation model players validate the trend

Pivots > to lighter-weight models, while layering paid services on top



Both moved away in 2024 from competing on general-purpose LLMs to building smaller and/or optimized models and related AI tools.

Quasi-exits > collapsing into big tech

ADEPT Inflection
character.ai

All essentially “acqui-hired” by big tech companies, with the founders and large portions of teams going to the acquirer.

The deals reflect the high costs of model development, with licensing payments going to investors.







Paywall frontier models



For open-source AI developers without a clear path to revenue, selling access to their best models while open-sourcing their lower tiers is one approach companies are taking — much like big tech.

Performance gaps are converging thanks to big tech efforts, though closed models maintain their lead

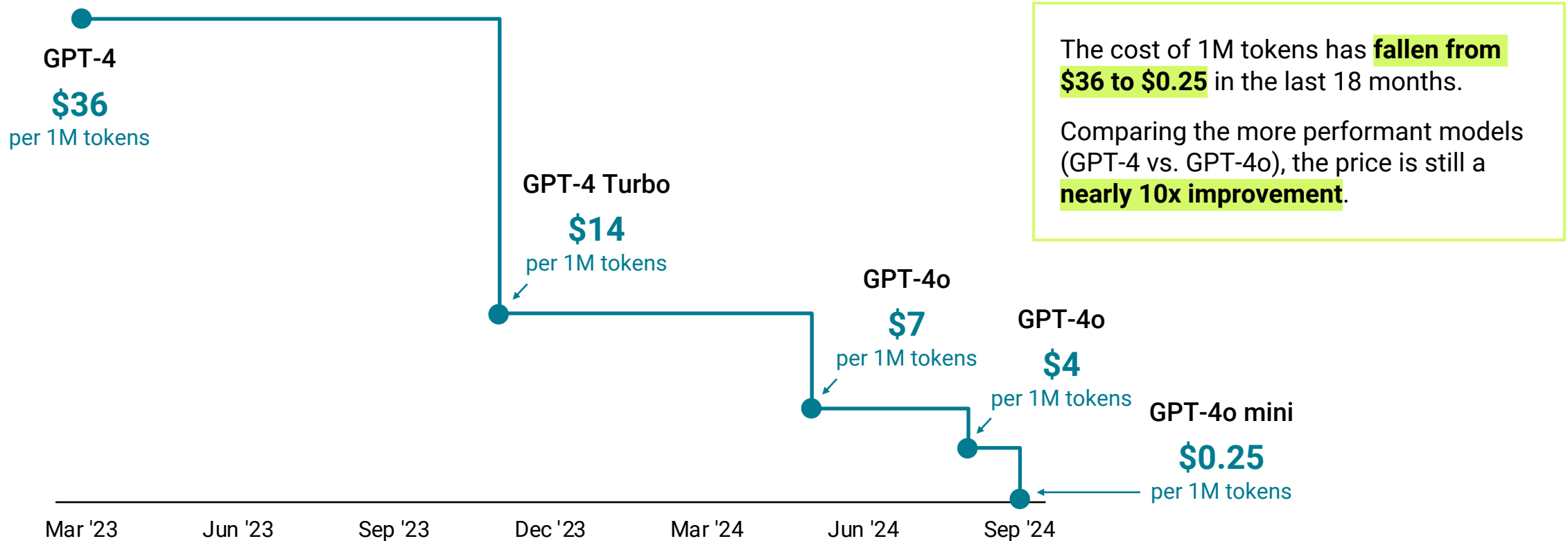
MMLU-Pro and MMLU benchmarks for leading foundation models

Company	Model	MMLU-Pro	MMLU	Release date
 ANTHROPIC	Claude 3.5 Sonnet* CLOSED SOURCE	76.1%	88.3% (0-shot CoT)	June 2024
	Grok-2** CLOSED SOURCE	75.5%	87.5% (0-shot CoT)	August 2024
 Meta	LLama3.1-405B OPEN SOURCE	73.3%	88.6% (0-shot CoT)	July 2024
 OpenAI	GPT-4o CLOSED SOURCE	72.6%	88.7% (0-shot CoT)	May 2024
 Alibaba	Qwen2.5-72B OPEN SOURCE	71.6%	86.1% (5-shot)	September 2024
 Google	Gemini-1.5-Pro CLOSED SOURCE	69.0%	85.9% (0-shot CoT)	May 2024

Source: Company releases. Note: Scores from release date. Select leading models visualized. *Claude 3.5 Sonnet (new) released October 2024 scores 78.0% on the MMLU-Pro. **As of its beta release, Grok-2 is not open-source, though Elon Musk indicated on X it will be once the next version is released.

Proprietary models become more cost-effective for enterprise use

Falling inference costs and growing context windows, combined with managed infrastructure and enterprise support, are strengthening the business case for API-based solutions



A few frontier, closed models will dominate sophisticated enterprise work

Though enterprises will adopt smaller, open-source models for [task-specific applications](#) where locally hosted models are preferred



“The reason that we have focused on the large closed-source solutions is one, just objectively, their models are better right now, meaning they have higher accuracy, lower hallucination. I think the second reason as well is because we get a lot of valuable enterprise support from OpenAI and Google... [We] would not get that level of support with an open-source solution.”

Lead Architect, Gen AI at publicly traded communications company



“At this point in time, a lot of customers come to us and say, **‘I’m not sure I can trust my sensitive data with something that is outside my service boundaries**, so I want you guys to go ahead and get an open-source foundational model and then fine-tune the model so that the model resides within my service boundary.”

Chief Architect, Fortune 500 company

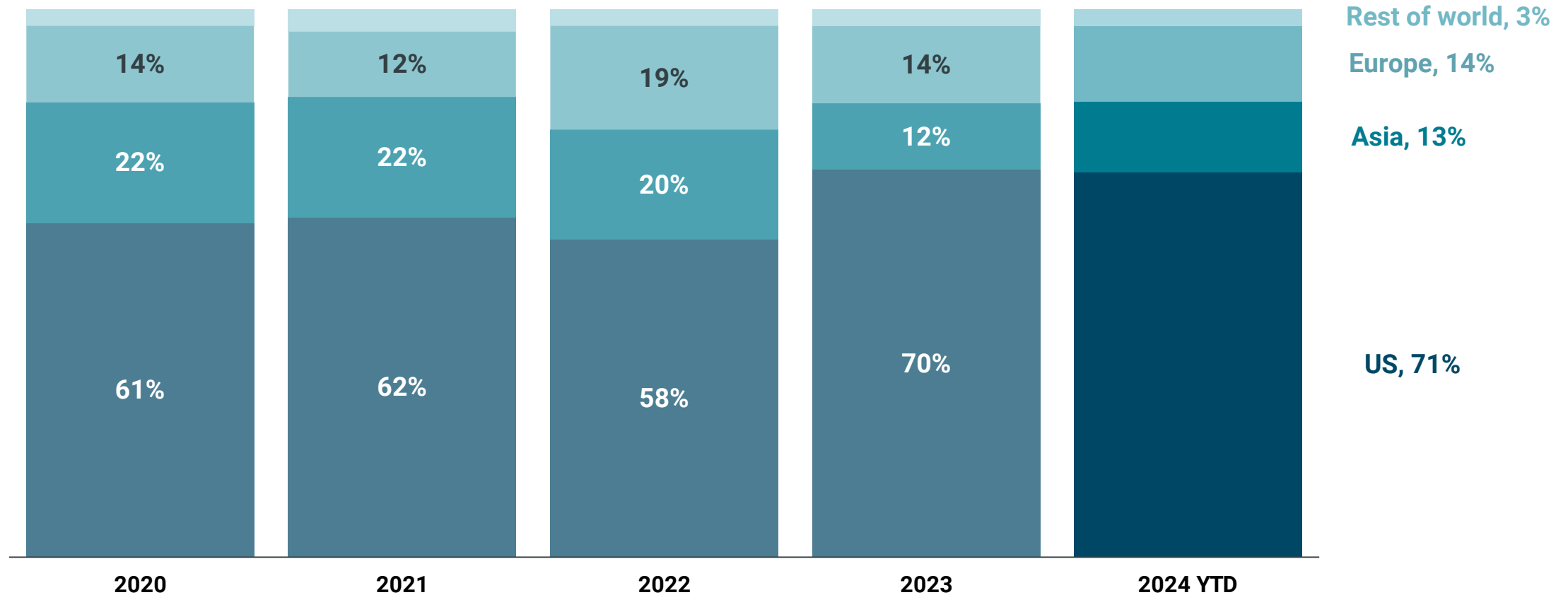
AI

The US is leading the AI arms race — for now



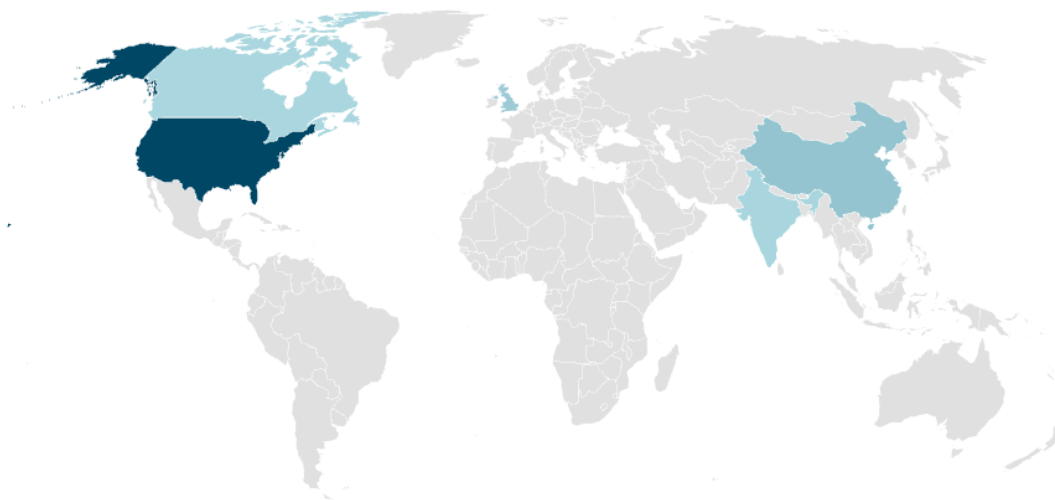
The US is running away with AI funding

American startups now take 71 cents of every dollar of global AI equity funding



AI talent is concentrated in the country, spurring a potential innovation gap between the US and everywhere else

Over 40% of the world's AI companies are based in the US



Country	Share of AI companies
United States	43%
China	9%
United Kingdom	7%
India	4%
Canada	4%

China is the only global power likely to rival the US' dominance in LLMs, especially on the open-source front




China's tech giants are simultaneously developing advanced models and investing in startups doing the same

Alibaba's Qwen2 tops Hugging Face's leaderboard* of open-source LLMs (as of June '24)...

Rank	Model
1	Qwen/Qwen2-72B-Instruct
2	meta-llama/Meta-Llama-3-70B-Instruct
3	microsoft/Phi-3-medium-4k-instruct
4	01-ai/Yi-1.5-34B-Chat
5	CohereForAI/c4ai-command-r-plus
6	abacusai/Smaug-72B-v0.1
7	Qwen/Qwen1.5-110B
8	Qwen/Qwen1.5-110B-Chat
9	microsoft/Phi-3-small-128k-instruct
10	01-ai/Yi-1.5-9B-Chat

...And China's big tech firms are backing startups that could threaten the leadership of US firms like OpenAI

China's private foundation model developers valued at \$1B+























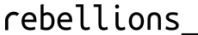




Company	Valuation	Notable investors
 Moonshot AI	\$3.3B	Alibaba Tencent HONGSHAN 红杉中国 Meituan
 ZHIPU AI	\$3.0B	Alibaba Tencent HONGSHAN 红杉中国 Meituan Prosperity
 百川智能 BAICHUAN AI	\$2.8B	Alibaba Tencent mi xiaomi
 MINIMAX	\$2.5B	Alibaba Tencent HONGSHAN 红杉中国
 零一万物 01.AI	\$1.0B	Alibaba 创新工场 INNOVATION VENTURES

Source: CB Insights; Hugging Face.

*Based on results from Hugging Face's Open LLM Leaderboard v2, launched in June 2024, which measures open-source LLMs' abilities across general tasks like reasoning and mathematics. Models are ranked according to performance across 6 benchmark evaluations.

While the AI market will solidify around frontier models in the US and China, watch for other specialized AI hubs to emerge in specific domains

Eight countries outpace the US on AI funding growth *and* headcount growth. Their AI startups may face less competition in home markets and better understand local data regulations – signaling partnership opportunities for int'l firms eyeing expansion.

Country	AI equity funding, Nov. '22 – Nov. '23	AI equity funding, Nov. '23 – Nov. '24	YoY change in funding	Median YoY headcount growth*	Select local AI startups gaining traction (funded in the last year + headcount growth)
 Belgium	\$21M	\$141M	571%	25%	TECHWOLF  ROBOVISION SODA
 Brazil	\$34M	\$194M	471%	19%	crm bonus  netlex  Arvo
 Italy	\$63M	\$346M	449%	15%	BENDING SPONS  MMI  iGenius
 Australia	\$233M	\$639M	174%	9%	SafetyCulture  InDebted  RDC
 Norway	\$86M	\$216M	151%	16%	 THORVALD Findable+
 India	\$648M	\$864M	33%	11%	 GoKwik  newspace  HABER
 Switzerland	\$204M	\$271M	33%	14%	 LEM SURGICAL  NEURAL CONCEPT  LatticeFlow
 South Korea	\$641M	\$825M	29%	18%	42dot  rebellions_  upstage
 United States	\$40.4B	\$52.1B	29%	8%	 OpenAI Harvey.  glean


Source: CB Insights. Data as of 11/8/2024.

Excludes countries that received < \$100M in AI funding over the last year. *To measure median headcount growth, we started with 15,000+ AI companies and filtered for those with disclosed change (positive or negative) in headcount over the last year (as of 11/8/24). We grouped these by HQ and filtered out countries with fewer than 10 companies meeting the criteria. We then used the median headcount change for each country.

As nations prioritize AI investment to remain competitive, infrastructure providers like Nvidia will only grow in power

Nvidia expects that helping nations establish “sovereign AI,” which refers to using their “own infrastructure, data, workforce, and business networks,” will drive “single-digit billions” in revenue for the company this year



Earnings Calls




View Transcript | Q3 2024

▶ 07:45 Jensen Huang

You're seeing sovereign AI infrastructures, people, countries that now recognize that they have to **utilize their own data, keep their own data, keep their own culture, process that data and develop their own AI.**

1x 15s  15s 



Earnings Calls



View Transcript | Q1 2025

▶ 06:42 Colette Kress

From a geographic perspective, **data center revenue continues to diversify as countries around the world invest in sovereign AI.** ... From nothing the previous year, **we believe sovereign AI revenue can approach the high single digit billions this year.** The importance of AI has caught the attention of every nation.

1x 15s  15s 

Enterprise

Spatial computing for enterprises is here to stay



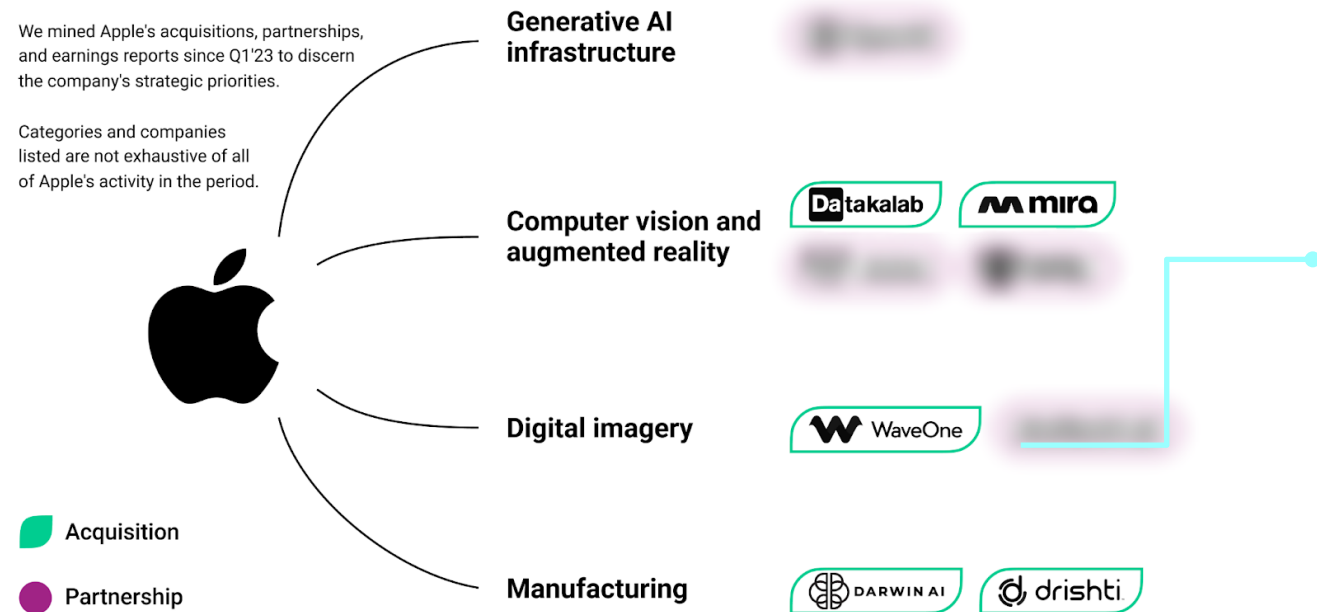
The Apple Vision Pro's 2024 launch sparked buzz around spatial computing for immersive experiences






Apple has been building out its spatial computing capabilities via the acquisition of enabling tech (e.g., augmented reality, computer vision, image recognition)

Apple's AI Strategy Map

We mined Apple's acquisitions, partnerships, and earnings reports since Q1'23 to discern the company's strategic priorities.

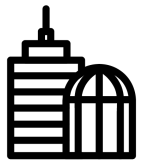
Categories and companies listed are not exhaustive of all of Apple's activity in the period.



	Computer vision and AI compression
	Augmented reality headsets
	Video compression
	Visual quality inspection
	Video analytics

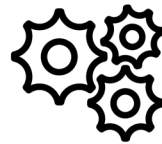
Immersive devices could find applications across industries

Spatial computing is focused on creating immersive experiences where digital content interacts with and responds to its real-world surroundings



The office

- Customizable digital workstations to boost employee productivity
- Simulated “in-person” collaboration for remote teams
- Experiential training for employee onboarding
- Interactive, immersive data visualization for enhanced financial decision-making



Industrials

- Visualization and testing of facility layouts prior to building
- Immersive facility dataset visualization for bottleneck identification/workflow optimization
- Remote training and assistance for production line operators
- Immersive 3D modeling for product design and development

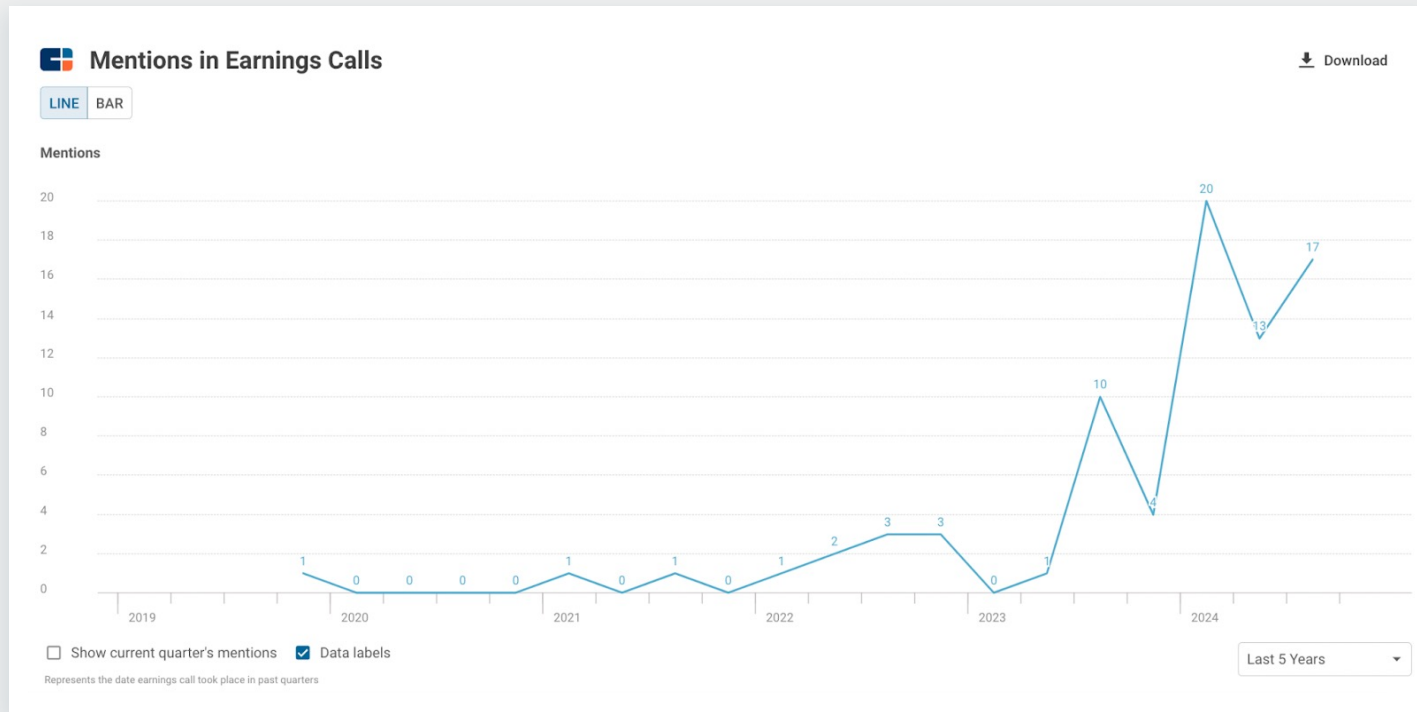


Healthcare

- 3D visualization of anatomical images for diagnosis
- Immersive, realistic training for medical students and clinicians
- Visualization of surgical plans and procedures to augment preoperative and intraoperative workflows
- Condensed data visualization for distributed, digital command centers

While the cost of devices like the Apple Vision Pro impedes mass-market adoption, spatial computing is capturing the imagination of businesses

Earnings call mentions of “spatial computing” have climbed, while more than half of the Fortune 100 have purchased Apple Vision Pro units








“Of course, this past quarter, we were thrilled to launch Apple Vision Pro, and it has been so wonderful to hear from people who now get to experience the magic of spatial computing...**It's also great to see the enthusiasm from the enterprise market. For example, more than half of the Fortune 100 companies have already bought Apple Vision Pro units.**”

Apple CEO Tim Cook,
Q2 FY 2024 Earnings Call

Big tech is betting on expanded business use cases for immersive devices

While product rollouts so far have come in fits and starts, track enterprise adopters for the immersive tech use cases that stick

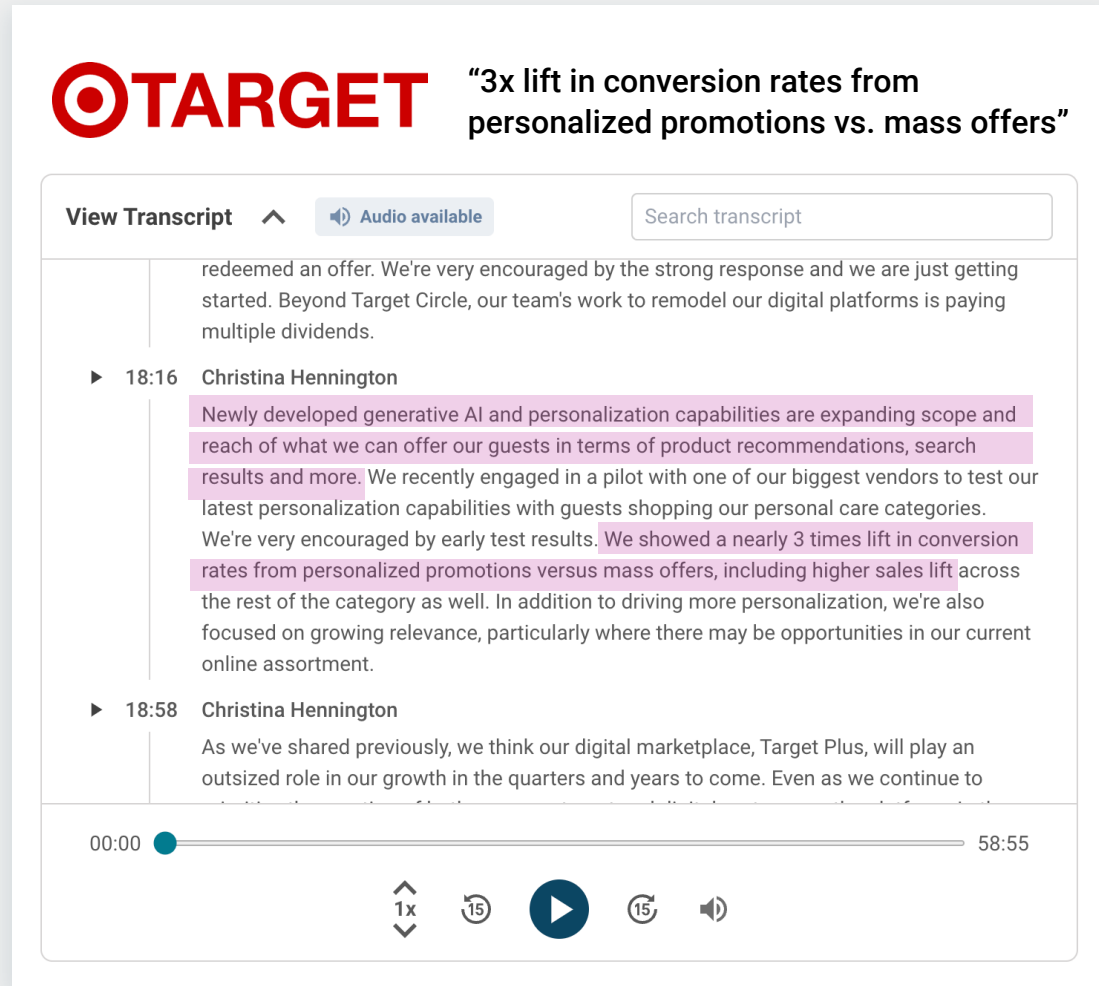
Company	Solution(s)	Status
	Vision Pro Spatial computing headset	Launched in February 2024 – used by organizations including Boston Children’s Hospital, Lufthansa, and Porsche. Apple scaling back Vision Pro production to shift toward a more affordable model, exploring foray into smart glasses.
	Quest series/Orion VR headset/AR glasses	Multiple Quest launches from 2019 (Oculus) to 2024 (3S) – used by organizations including Mortenson and Pfizer. Orion announced in September 2024, targeting 2027 release.
	Omniverse Development platform for 3D applications and services	3D photorealistic environments built using the platform can be streamed to headsets to bring them into the physical world. Omniverse launched in September 2022 – used by organizations including Lowe’s and General Motors.
	Project Starline High-fidelity telepresence system	The system simulates depth in virtual face-to-face meetings without glasses. Project launched in 2021 for experimental use in Google offices. Google and HP plan to introduce a commercial solution in 2025.
	HoloLens series Mixed reality headset	HoloLens 2 discontinued in October 2024, although headsets remain operational – used by organizations including CBRE, Sanofi, and L’Oréal.

Retail & consumer

Retail's personalization imperative



Personalized retail proves essential to improving conversions



TARGET “3x lift in conversion rates from personalized promotions vs. mass offers”

View Transcript Audio available

redeemed an offer. We're very encouraged by the strong response and we are just getting started. Beyond Target Circle, our team's work to remodel our digital platforms is paying multiple dividends.

▶ 18:16 Christina Hennington
Newly developed generative AI and personalization capabilities are expanding scope and reach of what we can offer our guests in terms of product recommendations, search results and more. We recently engaged in a pilot with one of our biggest vendors to test our latest personalization capabilities with guests shopping our personal care categories. We're very encouraged by early test results. We showed a nearly 3 times lift in conversion rates from personalized promotions versus mass offers, including higher sales lift across the rest of the category as well. In addition to driving more personalization, we're also focused on growing relevance, particularly where there may be opportunities in our current online assortment.

▶ 18:58 Christina Hennington
As we've shared previously, we think our digital marketplace, Target Plus, will play an outsized role in our growth in the quarters and years to come. Even as we continue to

00:00 58:55

1x 15s Play 15s



“The broad strategy of most companies, retailers and brands in our space is to evolve personalization. **It’s the number-one thing you can do to improve loyalty, to improve profitability, to improve relevance. AI and technology helps to deliver that.**”

Mark Adams, SVP at BigCommerce to Financial Times

Generative AI unlocks 1:1 experiences across touchpoints

INTELLIGENT SEARCH



Personalized results & AI search guidance in response to queries



AI search tool powered by ChatGPT with personalized search prompts

DYNAMIC CONTENT



Personalizing Walmart.com for each user (by end of 2025 in the US)

Leveraged LLMs to add or improve 850M data points in its product catalog (important for helping customers find items), which would have required 100x the headcount to accomplish in the same timeframe

SMART RECOMMENDATIONS



Plans to leverage its membership card shopping data to recommend healthier products in natural language



Rufus assistant provides product recommendations & additional product details



Generative AI in e-commerce market map

Marketing and digital content tools

Generative AI – marketing copy generation



Generative AI – photo and video editing tools



Generative AI – synthetic human & fashion design



Customer service

Generative AI – customer feedback analytics



Generative AI – customer support operations



E-commerce site optimization

AI-optimized e-commerce UX



Generative AI – e-commerce search

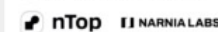


Composable AI



Product and packaging design

Generative AI – product design and simulation



Generative AI – packaging design



Supply chain

Supply chain AI copilots



Retail & consumer

Proliferating ecosystem of vendors targeting e-commerce use cases

Source: CB Insights research – [The generative AI in e-commerce market map](#) (October 2024)

The store that follows you: personalization becomes omnipresent

Most notably, retailers and ad agencies will leverage generative AI and consumer data to personalize ads at scale

Publicis CEO highlights AI's capacity to personalize advertising on retail media networks

The screenshot shows a video player interface from CB Insights. The title is "Earnings Calls" and the transcript is for "Q3 2024". The speaker is Arthur Sadoun at 56:29. The transcript text is: "We **have a leading retail media offer** that allows us not only to achieve the growth of our client, but to be able to measure it, to be able to know when you invest X, you get Y in terms of business return. And then on personalization ... **what you can achieve with AI to truly get to personalization is truly amazing and super promising.**" The video player includes a progress bar and playback controls at the bottom.

Google will fully roll out virtual try-on in ads later in 2024

The screenshot shows a video player interface from CB Insights. The title is "Earnings Calls" and the transcript is for "Q2 2024". The speaker is Philipp Schindler at 15:03. The transcript text is: "I also hear great feedback from our customers on many of our other new AI powered features. We're **beta testing virtual try on in shopping ads** and plan to roll it out widely later this year. Feedback shows **this feature gets 60 percent more high quality views than other images and a higher click out to retailer sites.**" The video player includes a progress bar and playback controls at the bottom.

Industrials

The future data center arrives



Traditional data centers can't handle AI's demands

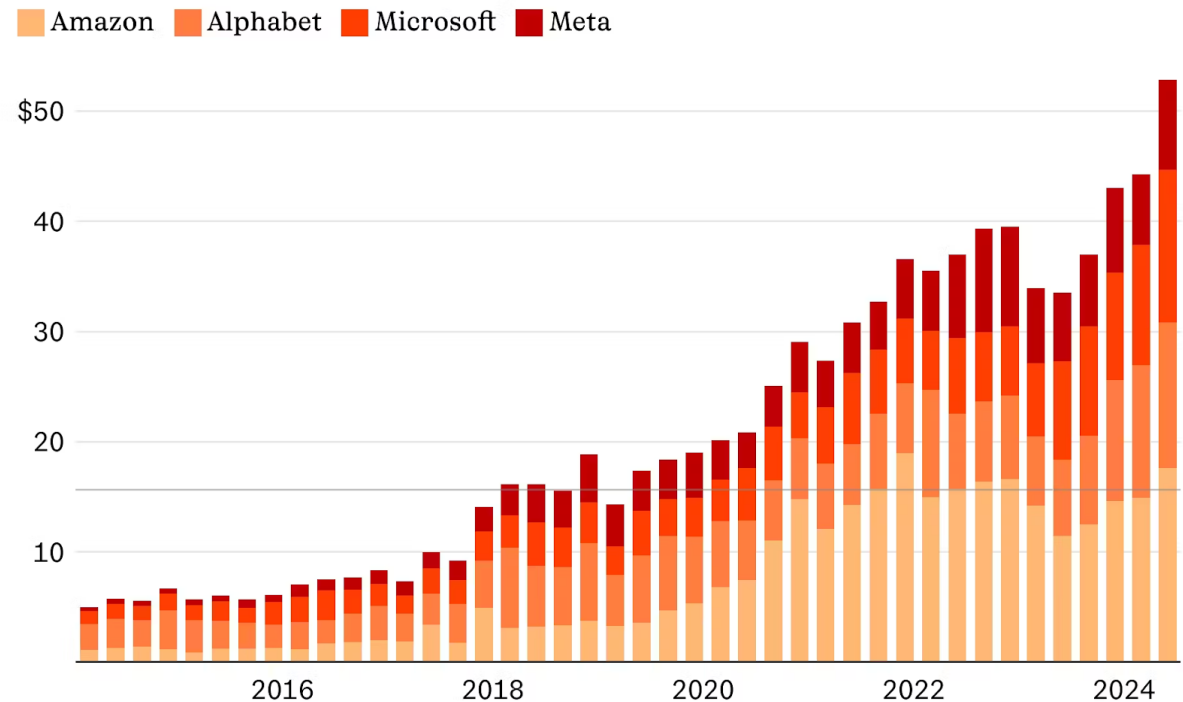
US companies are set for massive data center buildout, with \$1T+ in AI infrastructure spending ahead*



“The faster we grow demand, the faster we have to invest capital in data centers and networking gear and hardware.”

Amazon CEO Andy Jassy,
[Q3'24 Earnings Call](#)

Standardized quarterly capital expenditure, in billions











Source: CB Insights – [Amazon Q3'24 earnings call transcript](#).

*Goldman Sachs estimate. Chart via Sherwood News with data as of Q2'24.

Big tech companies morph into leading energy innovators to support AI workloads

Data center power usage will more than double from 460 TWh in 2022 to 1,000+ TWh by 2026 – equivalent to Japan’s energy consumption*

Category	Big tech	Company/partner	Description	Date
Nuclear	 Microsoft	 Constellation.	Reopening Three Mile Island nuclear plant for data centers	September 2024
Nuclear	 Google	 Kairos Power	Agreement for up to 500 MW of nuclear power from its SMRs** (deployment by 2030)	October 2024
Nuclear	 amazon	 ENERGY NORTHWEST  energy  Dominion Energy	Signed agreements to support deployment of SMRs in the US	October 2024
Fusion	 Google	 Commonwealth Fusion Systems  tae	GV portfolio companies	2021, 2022
Fusion	 Microsoft	 HELION	Aims to buy fusion-produced electricity starting in 2028	May 2023
Geothermal	 Meta	 SAGE GEOSYSTEMS	Collaborating to deliver 150 MW of geothermal power to data centers starting in 2027	August 2024
Geothermal	 Google	 FERVO ENERGY	Developed a 3.5 MW geothermal power plant to power data centers in Nevada	November 2023

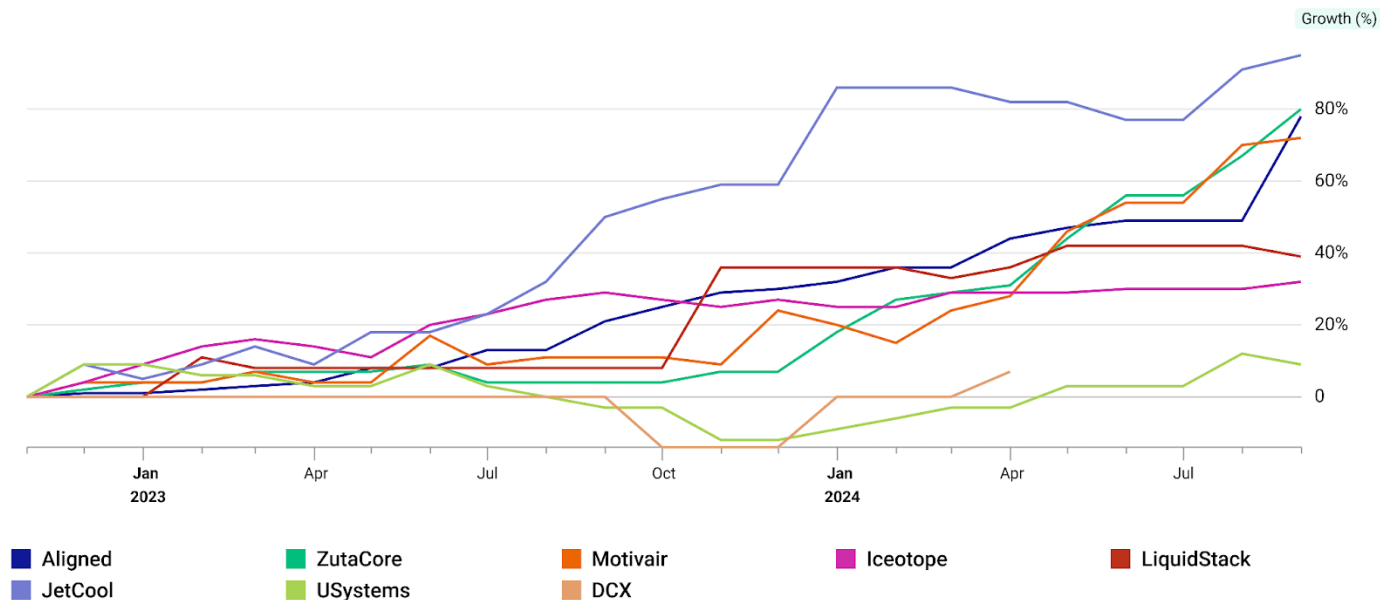
Source: CB Insights research – [The AI data center value chain](#). Note: Select partnerships.

*International Energy Agency (IEA) projection. **Small modular reactors.

Energy efficiency is a priority, creating opportunities across novel processor architectures, cooling tech, and more

For example, liquid cooling solutions that dissipate heat see growing momentum

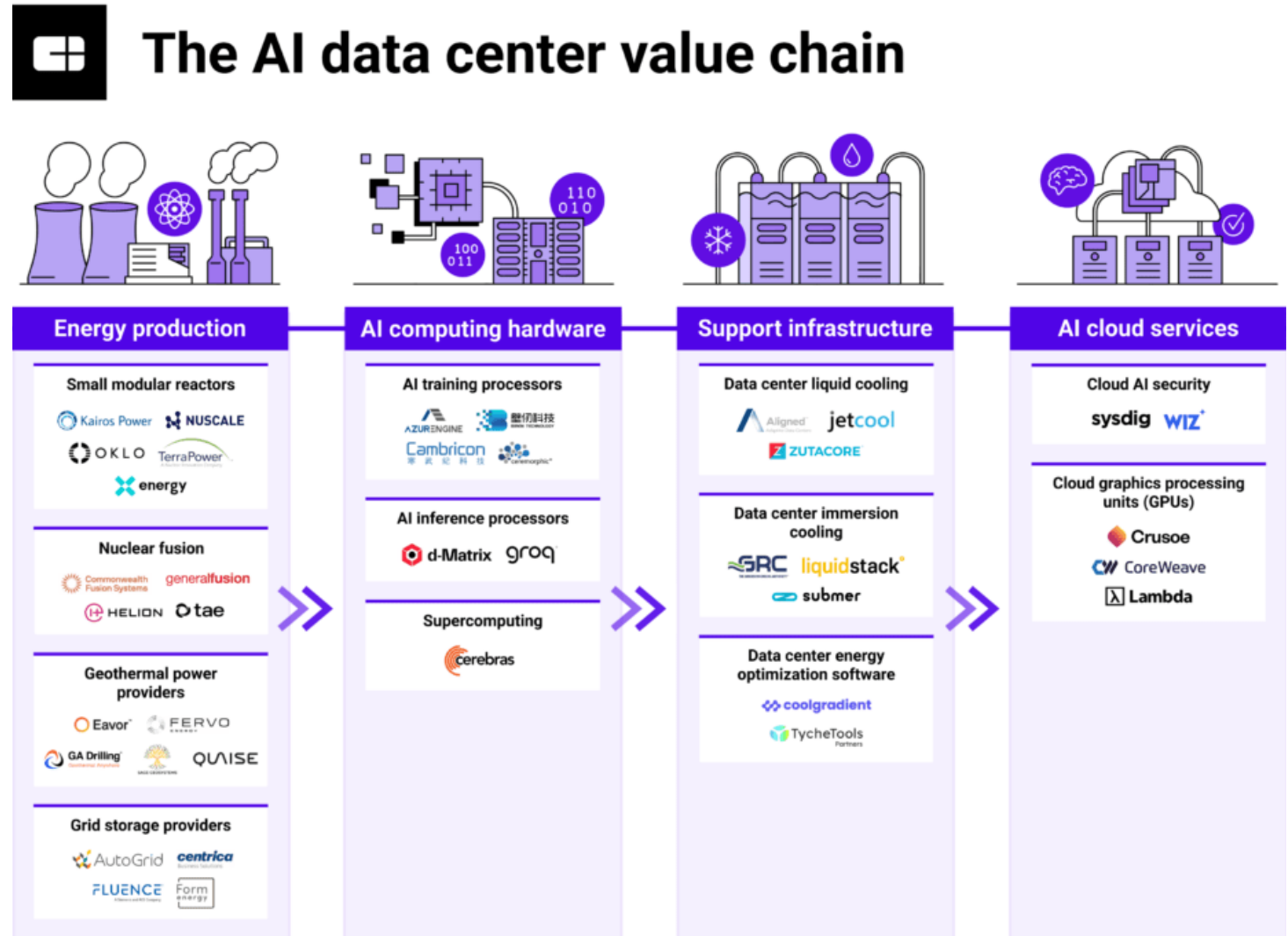
Most liquid cooling vendors grow headcount 20%+ over the last 2 years



By 2026, 38% of enterprises expect to incorporate liquid cooling into their data centers, up from 20% in 2024*

Early investment and partnerships will give companies an edge in scaling AI capabilities

Data center stakeholders should look to [these markets](#) for growth opportunities



Industrials

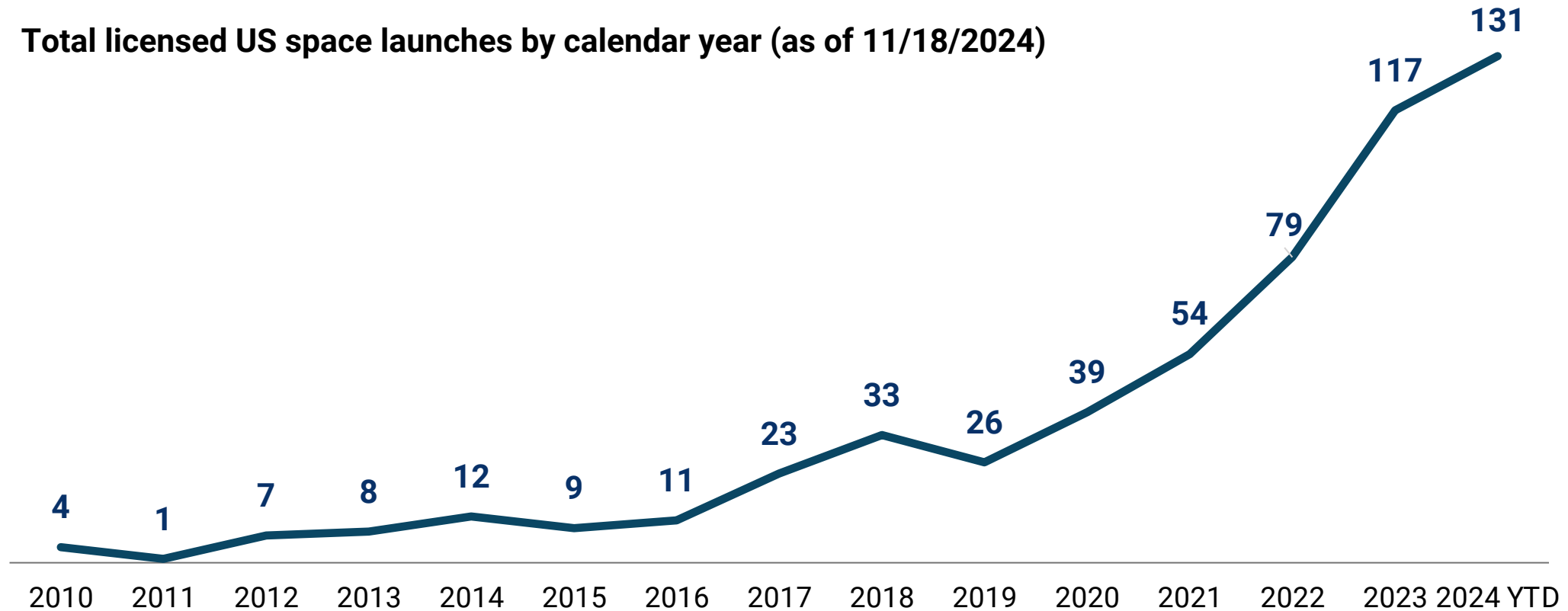
Cheaper access to space sparks investor rush



The number of space launches has 5x'd in the last 5 years

This is largely thanks to advances by SpaceX (valued at \$200B), which has 7x the number of licensed launches as its competitors

Total licensed US space launches by calendar year (as of 11/18/2024)



While the cost to reach orbit has fallen by 8x since 2008

SpaceX is expected to drive these costs down further with its future Starship rocket that will cost an estimated \$500 to send a kg of payload to orbit

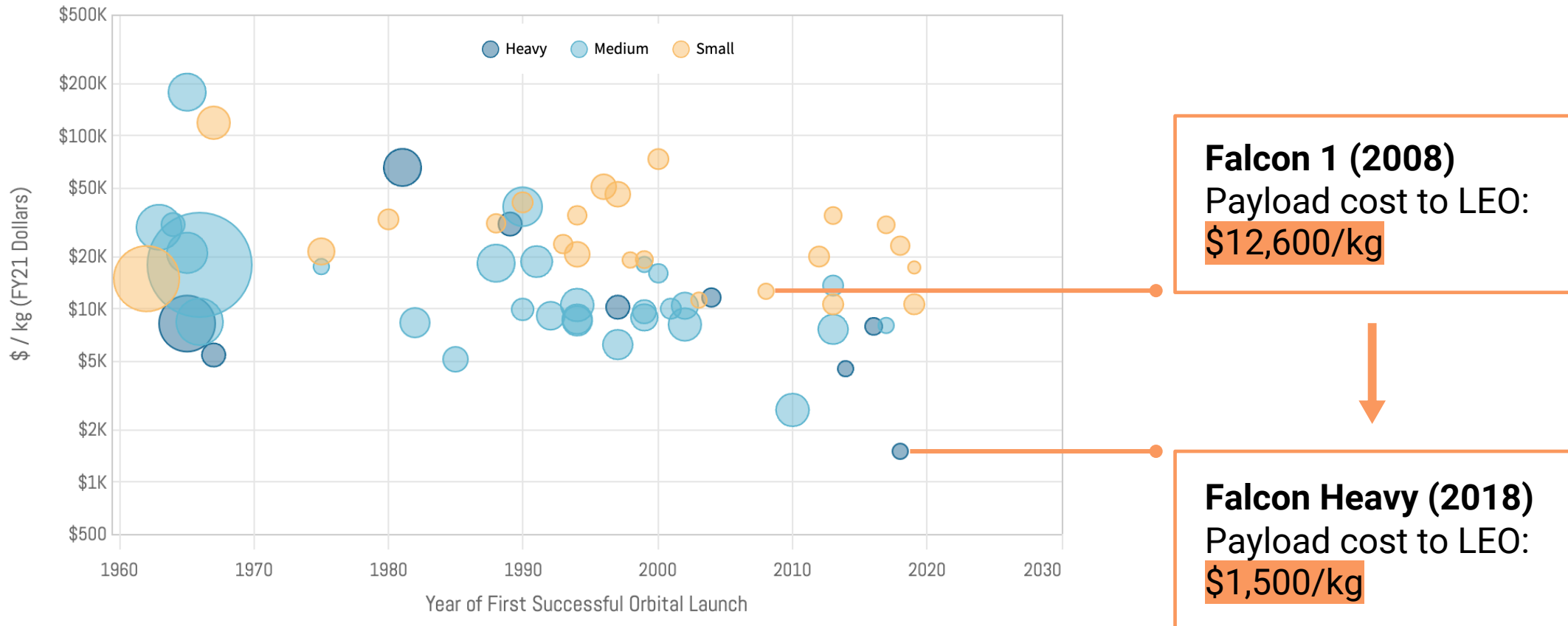
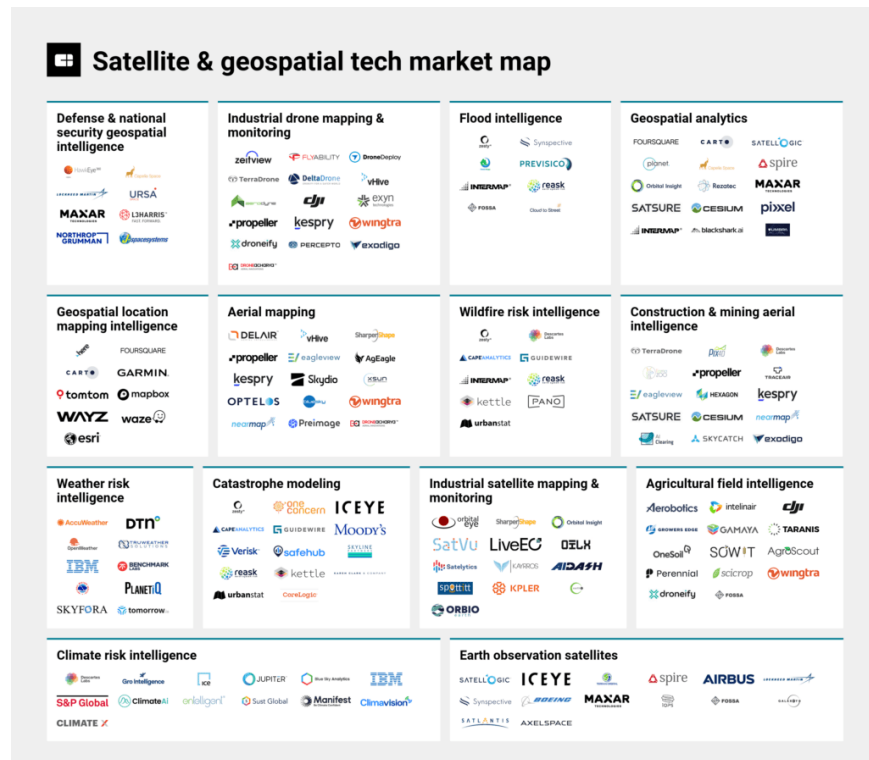


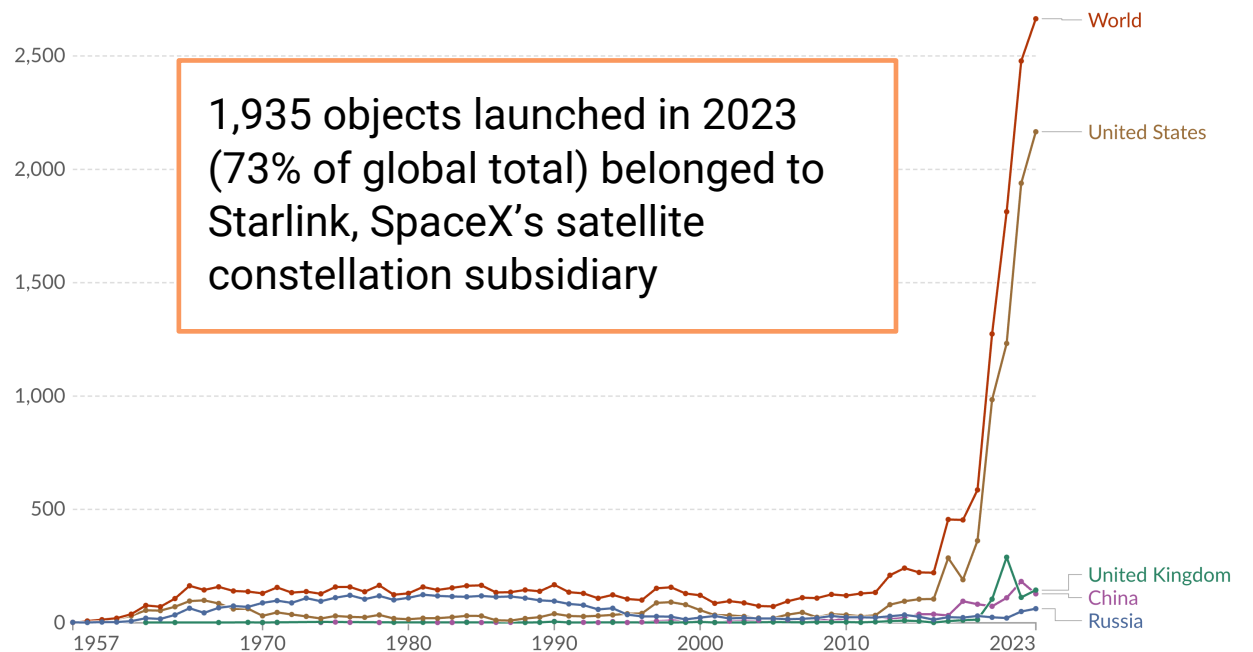
Chart source: CSIS Aerospace Security Project.
Note: LEO = low Earth orbit.

The proliferation of satellites is improving how organizations communicate, monitor operations, and manage risk

Startups and incumbents are expanding geospatial use cases across national defense, industrial mapping, and environmental monitoring



Annual number of objects launched into space*














Source: CB Insights – [The satellite & geospatial tech market map](#). Chart source: United Nations Office for Outer Space Affairs (2024) via Our World in Data. *This includes satellites, probes, landers, crewed spacecrafts, and space station flight elements launched into Earth orbit or beyond.

Cheaper access to space spawns startups across satellite tech, advanced propulsion systems, and more

Leading accelerator Y Combinator publicly calls for more space tech startups in September 2024

Aviation and space startups funded by Y Combinator in 2023 vs. 2024 YTD (11/12/2024)

2023		
Company	Focus	Founded year
 STRALIS	Hydrogen electric aircraft	2021
 RADICAL	High-altitude solar-powered aircraft	2022

2024		
Company	Focus	Founded year
 BIFROST ORBITAL	Connectivity for satellites	2024
 Forerunner AI	AI copilot for aerospace engineering	2024
 Lumen Orbit	Data centers in space	2024
 ARES INDUSTRIES	Cruise missiles	2024
 Spaceium	In-space refueling	2023
 ELODIN	Aerospace software	2023
 ASTRO MECHANICA	Jet engines	2021
 basalt	Satellite software	2023
 Navier AI	Simulation software	2023

Founder(s) with prior experience at SpaceX



Source: CB Insights – [Where Y Combinator is investing](#); Y Combinator.

Expect rising investment in startups focusing on satellite applications and space infrastructure & support

Evaluate opportunities among high-momentum* space tech companies

<input type="checkbox"/>	Companies	Description	Mosaic (Over...	Total Funding	Commercial Ma
<input type="checkbox"/>	Stoke Space	Stoke Space focuses on advancing the aerospace industry...	861	\$176.27M	4: Scaling
<input type="checkbox"/>	Astranis	Astranis specializes in the development of small, low-...	856	\$762.57M	4: Scaling
<input type="checkbox"/>	Starfish Space	Starfish Space provides satellite servicing within the...	844	\$53.50M	4: Scaling
<input type="checkbox"/>	Varda	Varda Space Industries is a microgravity-enabled life scien...	838	\$147.40M	4: Scaling
<input type="checkbox"/>	Skylo	Skylo provides a non-terrestrial network in the...	826	\$153.00M	4: Scaling
<input type="checkbox"/>	Muon Space	Muon Space specializes in the development and operation...	825	\$91.70M	4: Scaling
<input type="checkbox"/>	D-Orbit	D-Orbit focuses on space logistics and orbital transportati...	822	\$254.74M	4: Scaling
<input type="checkbox"/>	Voyager Space	Voyager Space is a space exploration company focused or...	820	\$253.68M	4: Scaling
<input type="checkbox"/>	True Anomaly	True Anomaly specializes in space security technology witl'...	820	\$126.32M	3: Deploying
<input type="checkbox"/>	Pixxel	Pixxel focuses on hyperspectral earth imaging and analytic...	818	\$73.77M	4: Scaling
<input type="checkbox"/>	Orbex	Orbex operates a space launch company focusing on the...	815	\$134.53M	4: Scaling

Explore 150+ high-momentum space tech companies

Source: CB Insights — [Aerospace & Space Tech Collection](#). *High-momentum private companies developing space/satellite applications based on Mosaic scores (>400) and Commercial Maturity scores of 1-4 (out of 5); data as of 11/18/2024.

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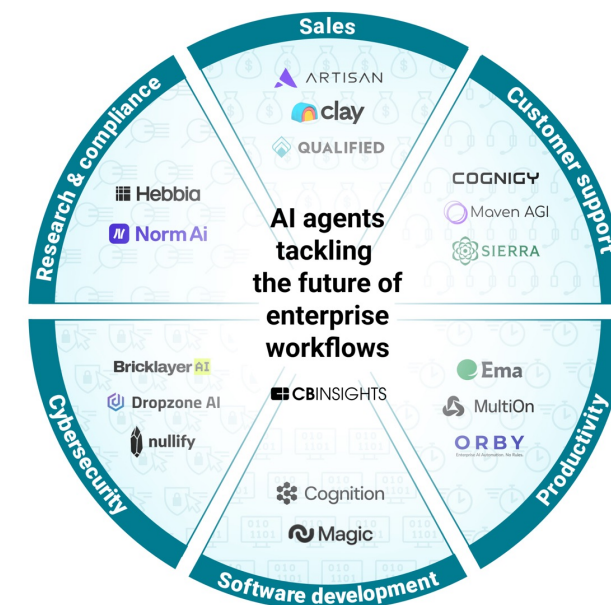
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Game Changers

2025

CBINSIGHTS



Includes leading privately held startups developing AI agents based on a minimum Mosaic score of 500. Not exhaustive of companies in the space.

CBINSIGHTS



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