Who's winning the AI race

Summary

The article discusses the competition in AI, which is less like a single race and more like a triathlon. There are three main events: developing the most advanced generative AI foundation models, winning customers by making AI useful, and building costly infrastructure that makes the first two goals possible.

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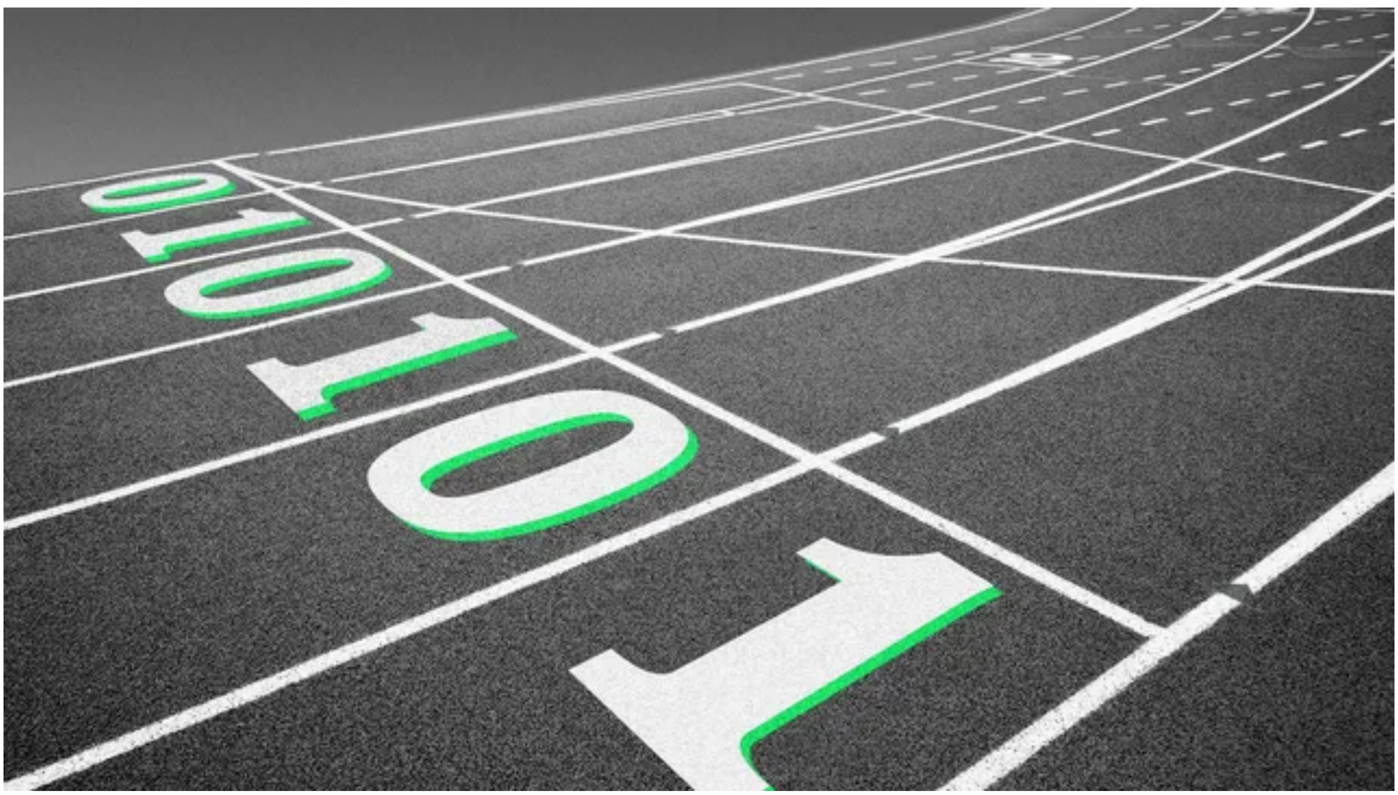

Illustration: Annelise Capossela/Axios

Competition in AI is less a single race than a triathlon: There's a face-off to develop the most advanced generative AI foundation models; a battle to win customers by making AI useful; and a struggle to build costly infrastructure that makes the first two goals possible.

Why it matters: Picking a winner in AI depends on which of these games you're watching most closely. And the competition's multi-faceted nature means there's more than one way to win.

State of play: Below, we offer an overview of where the key players in generative AI stand in each of this triathlon's events.

Between the lines: The benchmarks used in the industry to compare performance among AI models are widely criticized as unreliable or irrelevant, which makes head-to-head comparisons difficult.

- Often, developers' and users' preference for one model over another are very subjective.

OpenAI

Two years after the launch of OpenAI's ChatGPT kicked off the AI wave, the startup remains AI's flagship.

- It has raised about $22 billion and is in the process of retooling itself from a safety-oriented nonprofit to a globe-spanning for-profit tech giant.

Yes, but: OpenAI's last major foundation model release, GPT-4, is now nearly two years old. A long-awaited successor had its release pushed back into 2025 amid a swirl of reports that its advances may not be game-changing.

- Meanwhile, OpenAI has pushed the field's edge with innovations like its "reasoning" model, o1, and impressive voice capabilities.

Models: OpenAI still has a lead, but it's shrinking.

Customers: OpenAI has direct access to a vast pool of over 200 million weekly active ChatGPT users and indirect access to the huge installed base of Microsoft users, thanks to its close alliance with that giant.

Infrastructure: OpenAI is highly dependent on Microsoft for the cloud services that train and run its AI models, though it has recently begun an effort to expand its partnerships.

Anthropic

Like Avis to OpenAI's Hertz, Anthropic seems to be trying a little harder. It has also faced fewer distractions from high-profile departures and boardroom showdowns than its competitor.

Anthropic was founded by ex-OpenAI employees aiming to double down on OpenAI's commitment to caution and responsibility in deploying AI.

- But it has now raised roughly $14 billion and begun to embrace OpenAI's philosophy of putting AI in the public's hands to pressure test its dangers.

Models: Anthropic's Claude 3.5 Sonnet is widely viewed as a worthy competitor to GPT-4 that, in some cases, even surpasses it.

Customers: Claude's usage numbers are much smaller than ChatGPT's, but the company is partnering with big and medium-sized firms looking for a counterweight to Microsoft.

Infrastructure: Amazon, which recently invested $4 billion into Anthropic, is putting its massive cloud resources behind the company, and Google's parent Alphabet has also provided some investment and support.

Google

Google's long-term investments in AI research made generative AI's breakthrough possible.

- But ChatGPT's overnight success caught the search giant flat-footed.
- Google has spent much of the last two years in catch-up mode — uniting its DeepMind research team and Brain unit and injecting its Gemini AI across its product line.

Models: Google's Gemini is very much in the same league as OpenAI's and Anthropic's models, though some reports suggest that it hasn't found as much pickup among AI developers.

Customers: By pushing its own AI summaries to the top of search results and integrating its AI with its Android mobile operating system, Google has ensured that its own AI would get in front of a global user base.

Infrastructure: Google has the know-how and the resources to scale up as much AI power as it needs, but the field's competitive frenzy has left it off-balance.

Meta

Meta has embraced and promoted open source AI via its Llama models.

- The strategy is a way to avoid becoming dependent on a competitor for AI services — the way it found itself reliant on Apple and Google in the smartphone era.

- Meanwhile, Meta has been deploying its own custom version of the technology, dubbed Meta AI. The chatbot lives inside Messenger and

WhatsApp, has taken over search in Instagram and powers the assistant on Meta Ray-Ban glasses. The future has Meta AI even spitting out its own posts.

Models: Meta's models haven't directly taken on OpenAI and its competitors. Instead, they've offered better performance at smaller scales and the cost savings and freedom that the open source approach allows.

Customers: Over 3 billion social media users provide Meta with an enormous pool of consumers, while some business customers will be won over by Llama's low price and adaptability.

Infrastructure: Meta doesn't run its own B2B cloud, but has plenty of experience scaling up data centers.

Other players

Microsoft has tied its AI fate to OpenAI, but it has also begun to build out its own in-house strategy.

- It's developing its own models in a project led by DeepMind co-founder and former Inflection CEO Mustafa Suleyman.

Amazon has concentrated on meeting the AI boom's enormous demand for cloud services, but it's also investing in its own series of models.

xAI, Elon Musk's venture, raised about $6 billion in the spring and another $5 billion this month — along the way building what it calls the world's largest AI data center at impressive speed.

- But it's not yet clear how xAI intends to compete beyond making vague promises around freedom of speech.

Apple has played catch-up as it works to weave Apple Intelligence into its mobile and desktop operating systems and upgrade its Siri assistant.

Other races

AI's leading competitors are also engaged in an increasingly tough scramble to find more training data for their models.

- Tech giants that have been stockpiling data for years have a natural advantage.
- But data access faces challenges from copyright law, distrust of the technology by creators and the public, and privacy commitments some companies have made.

Zoom out: Most of these companies have also explicitly committed themselves to the quest for artificial general intelligence, or AGI — a level of autonomous intelligence that matches or exceeds human capabilities.

- But since everyone has a different definition of AGI, it may be tough for anyone to lay a claim to achieving it first.