

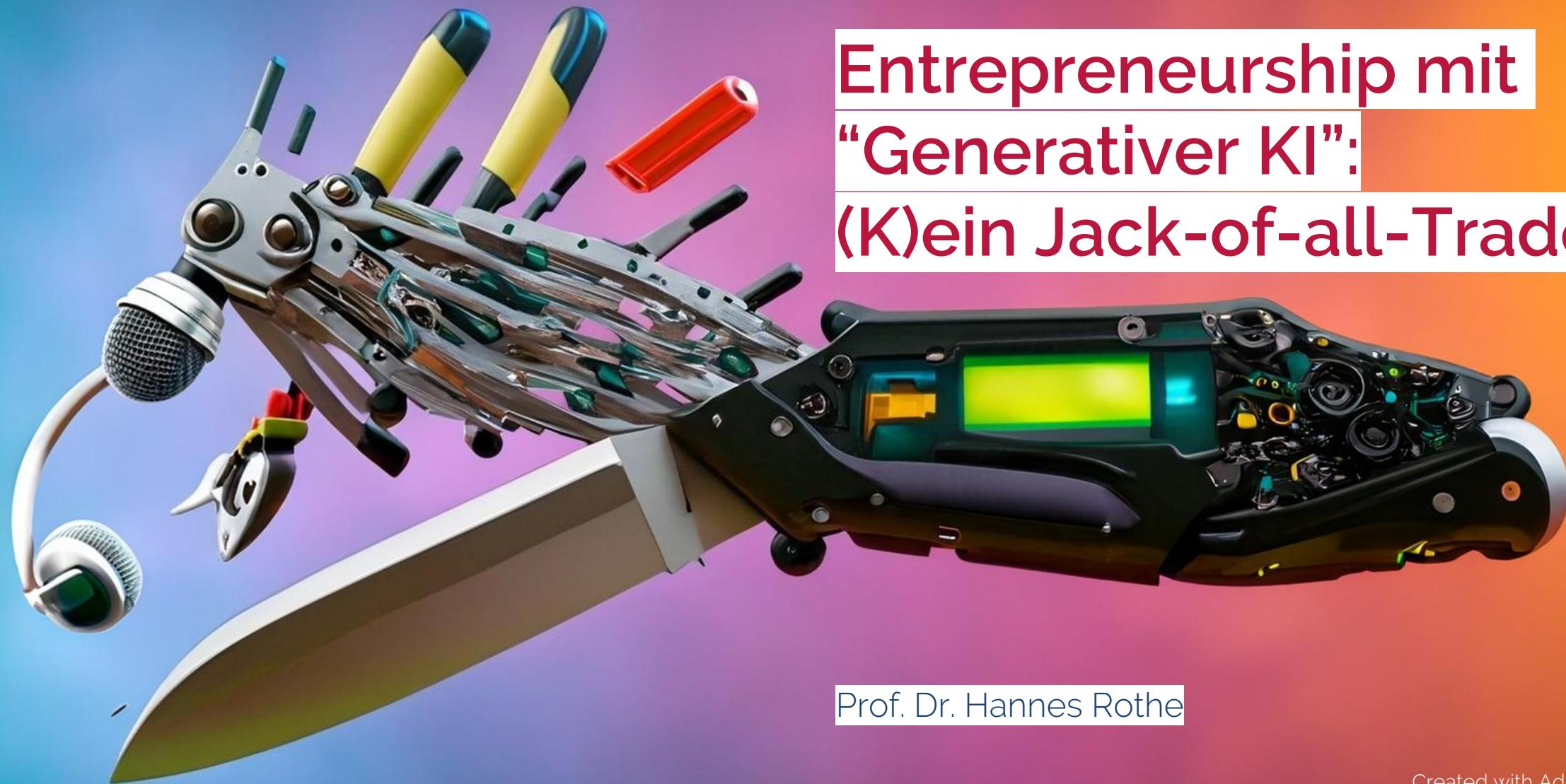


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Offen im Denken

Entrepreneurship mit “Generativer KI”: (K)ein Jack-of-all-Trades



Prof. Dr. Hannes Rothe

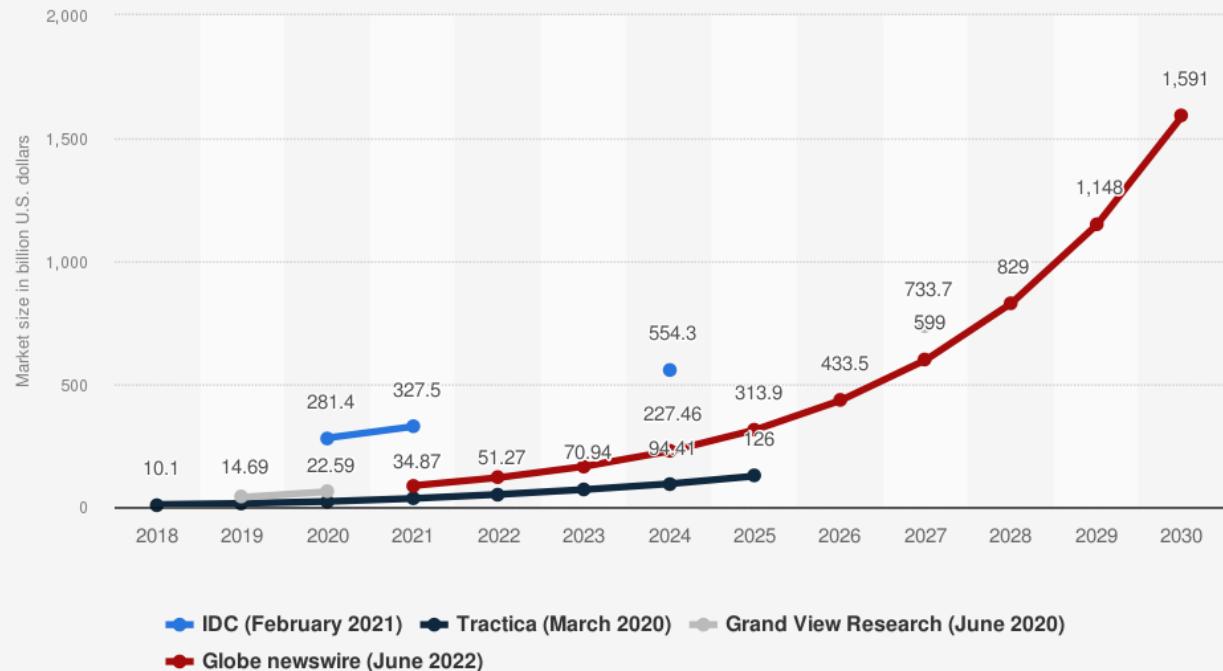
AI is considered a
generative technology
with unprecedented
growth potential

(Bresnahan and Trajtenberg 1995, Iansiti and Lakhani 2020)

for scale (Burström et al. 2021)

and scope (Brynjolofsson et al. 2018)

Market size and revenue comparison for artificial intelligence worldwide from 2018 to 2030 (in billion U.S. dollars)



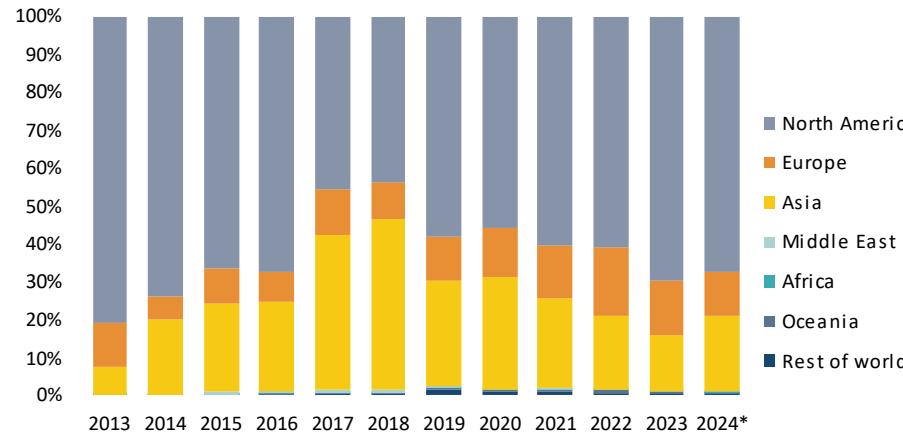
Sources
IDC; Tractica; Grand View Research; Statista;
GlobeNewswire
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Additional Information:
Worldwide; Statista; 2022

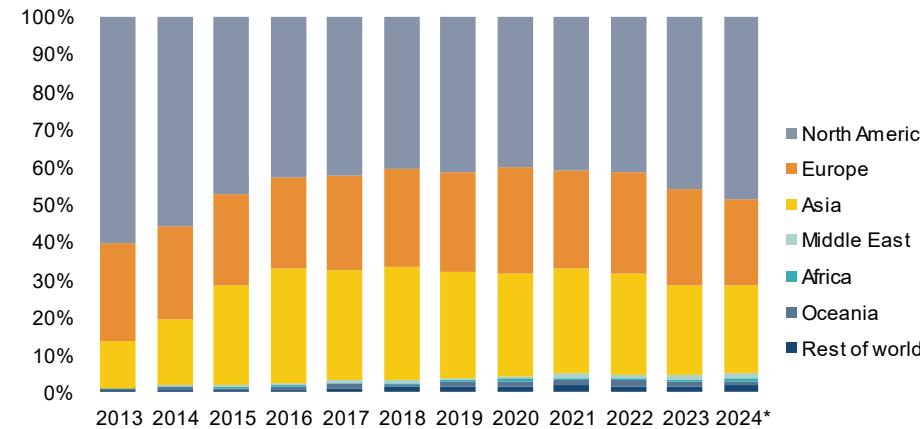
AI Venturing: Status Quo (Investments)



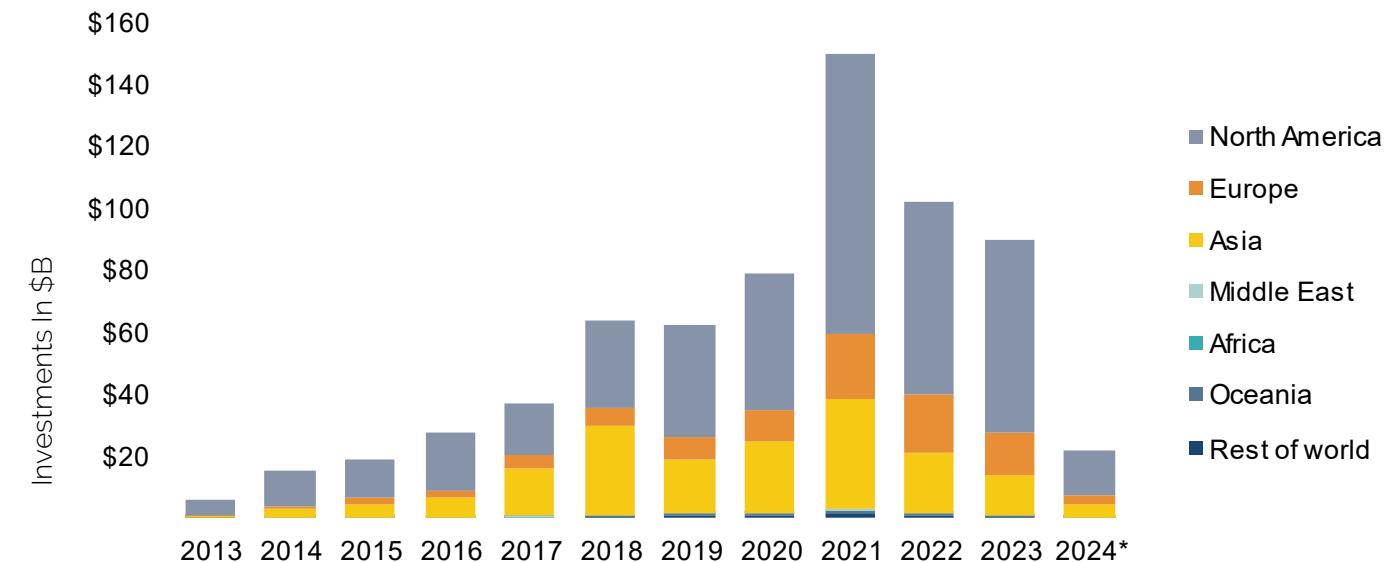
AI&ML VC deal **value** (\$B) by region



AI&ML VC deal **count** by region

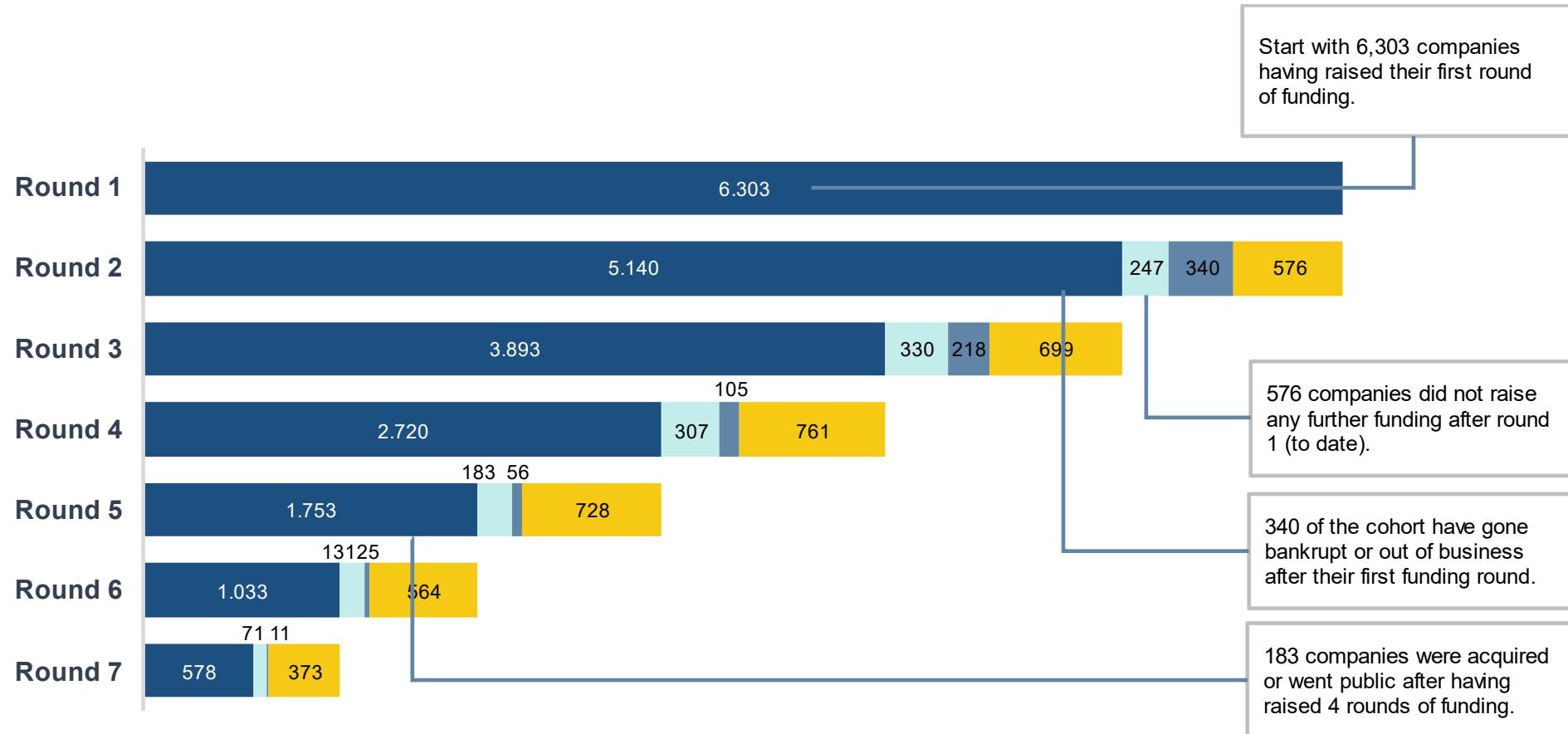


AI remains **hot**



in Europe:
we have more deals, but less valuation

AI Venturing: Status Quo (Funnel)

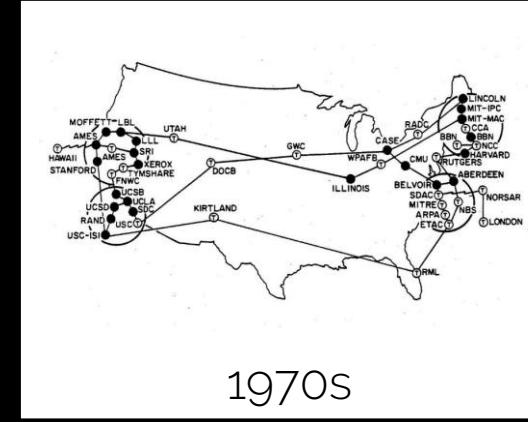


~67.89 % survival rate (either follow up round or self-sustaining)

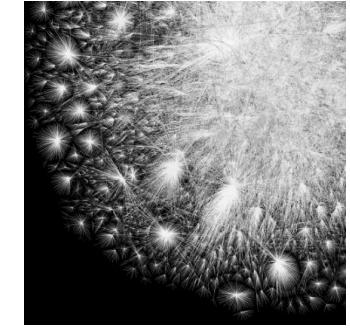
- Raised a VC Round,
- Acquired/Buyout/Public Listing.
- Out of Business/Bankruptcy,
- Did Not Advance/Self-Sustaining

Some technologies have
the “*capacity to produce
unprompted change*
*driven by large, varied,
and uncoordinated
audiences*”

(Zittrain, 2006, p. 1980)



1970s



2000s

Generative AI: Text to Text Transformation



what is the most surprising fact about Essen, Germany?

One of the most surprising facts about **Essen**, Germany, is that it was once one of the most **heavily industrialized cities in Europe**, but today, it is recognized as one of the **greenest cities in the country**.

Essen was historically the heart of Germany's coal and steel industries, home to the massive **Zollverein Coal Mine Industrial Complex**, a UNESCO World Heritage Site. This mine was so significant it was once dubbed the "**most beautiful coal mine in the world**" due to its striking Bauhaus architecture. However, after the decline of heavy industry in the late 20th century, Essen undertook a massive transformation. By 2017, the city was honored as the **European Green Capital** for its impressive environmental and urban renewal efforts.

This drastic shift—from a hub of pollution and heavy industry to a modern green city with extensive parks, restored waterways, and innovative urban spaces—is a surprising and inspiring turnaround.

Gemini Advanced ▾
1.5 Pro

Essen is one of the greenest cities in Germany. Despite its industrial heritage, Essen has transformed itself into a leader in urban sustainability. ▾

Here's why this is so surprising:

- **Industrial Past:** Essen was a major center for coal mining and steel production. This typically leaves a legacy of pollution and environmental damage. ▾
- **Green Transformation:** Today, Essen boasts extensive parks, green spaces, and a commitment to sustainable practices. They even won the European Green Capital award in 2017. ▾

This transformation highlights how cities can overcome their industrial past and embrace a greener future. It's a testament to Essen's dedication to environmental sustainability and innovation. ▾

Gemini

perplexity

DeepL
Write

HyperWrite

Hemingway
Editor

QuillBot

grammarly

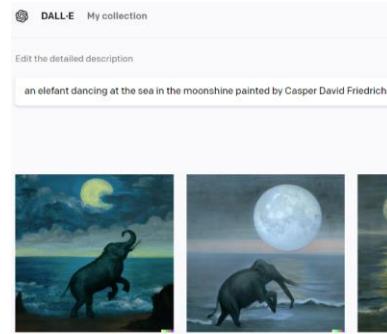
Generative AI: Text to Sound Transformation



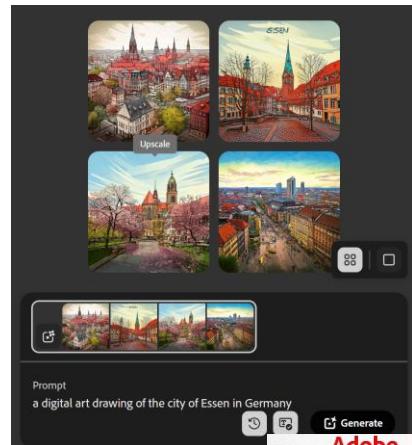
Text to Sound

Sound to Text

Generative AI: Text to Image Transformation



OpenAI



Adobe
Firefly



THE SHIFT

An A.I.-Generated Picture Won an Art Prize. Artists Aren't Happy.

"I won, and I didn't break any rules," the artwork's creator says.

Give this article 1.5K



Generative AI: 2d Image to 3d Image Transformation



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GenerIO.ai

We make 3D modeling child's play.

1 Sketch Outline

2 Describe Look

3 Your 3D Model

www.generio.app
(a venture from UDE)



www.goava.ai
(a venture from Essen)



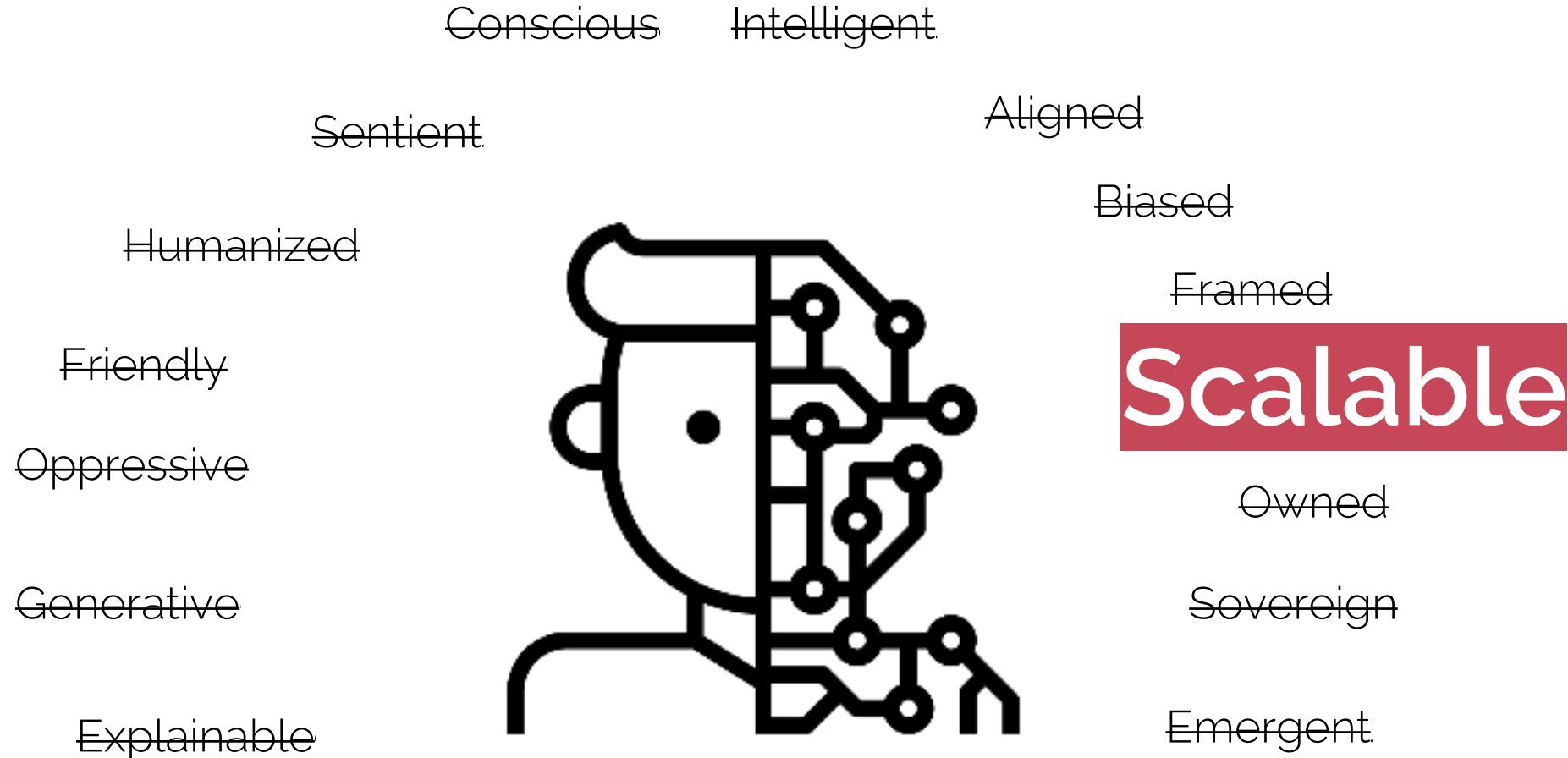
EXAMPLES OF HORIZONTAL PLATFORMS



Capability	Benchmark	Description	GEMINI 1.5 FLASH May 2024	GEMINI 1.5 FLASH Sep 2024	GEMINI 1.5 PRO May 2024	GEMINI 1.5 PRO Sep 2024
General	MMLU-Pro	Enhanced version of popular MMLU dataset with questions across multiple subjects with higher difficulty tasks	59.1%	67.3%	69.0%	75.8%
Code	Natural2Code	Code generation across Python, Java, C++, JS, Go . Held out dataset HumanEval-like, not leaked on the web	77.2%	79.8%	82.6%	85.4%
Math	MATH	Challenging math problems (incl. algebra, geometry, pre-calculus, and others)	54.9%	77.9%	67.7%	86.5%
	HiddenMath	Competition-level math problems, Held out dataset AIME/AMC-like, crafted by experts and not leaked on the web	20.3%	47.2%	28.0%	52.0%
Reasoning	GPQA (diamond)	Challenging dataset of questions written by domain experts in biology, physics, and chemistry	41.4%	51.0%	46.0%	59.1%
Multilingual	WMT23	Language translation	74.1	73.9	75.3	75.1
Long Context	MRCR (1M)	Diagnostic long-context understanding evaluation	70.1%	71.9%	70.5%	82.6%
Image	MMMU	Multi-discipline college-level multimodal understanding and reasoning problems	56.1%	62.3%	62.2%	65.9%
	Vibe-Eval (Reka)	Visual understanding in chat models with challenging everyday examples. Evaluated with a Gemini Flash model as a rater	44.8%	48.9%	48.9%	53.9%
	MathVista	Mathematical reasoning in visual contexts	58.4%	65.8%	63.9%	68.1%
Audio	FLEURS (55 lang)	Automatic speech recognition (based on word error rate, lower is better)	9.8%	9.6%	6.5%	6.7%
Video	Video-MME	Video analysis across multiple domains.	74.7%	76.1%	77.9%	78.6%
Safety	XSTest	Measures how often models refuse to respond to safe/benign prompts. The score represents how frequently models correctly fulfill requests	86.9%	97.0%	88.4%	98.8%



Today



EXAMPLES OF HORIZONTAL PLATFORMS

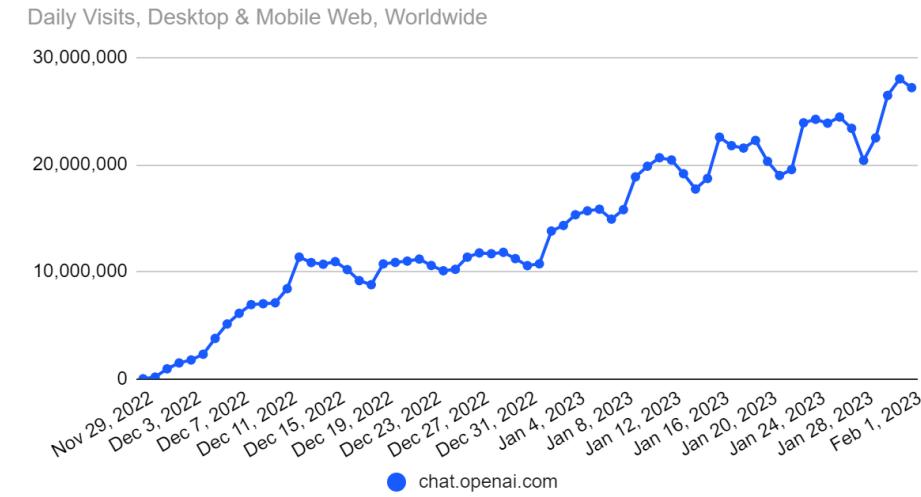


ChatGPT sets record for fastest-growing user base - analyst note

By Krystal Hu

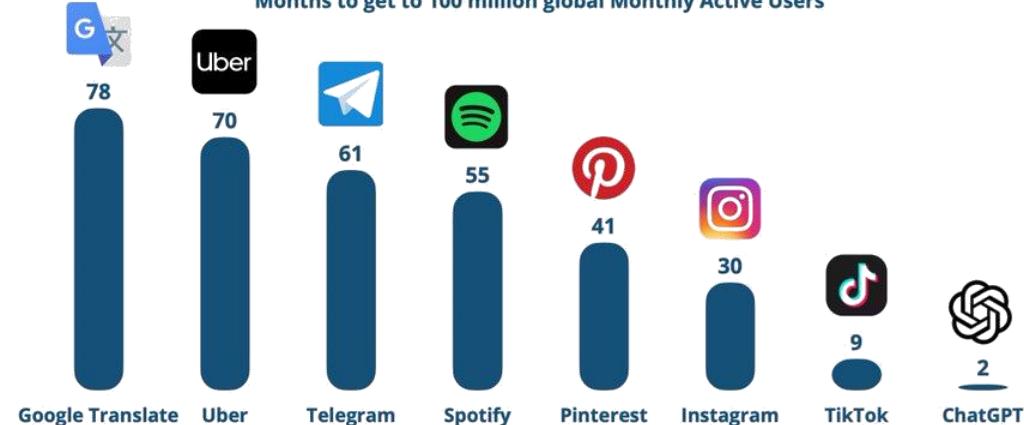
February 2, 2023 4:33 PM GMT+1 · Updated 4 months ago

Feb 1 (Reuters) - ChatGPT, the popular chatbot from OpenAI, is estimated to have reached 100 million monthly active users in January, just two months after launch, making it the fastest-growing consumer application in history, according to a UBS study on Wednesday.



Time to Reach 100M Users

Months to get to 100 million global Monthly Active Users



„Generative Systems“

such as the Internet (Zittrain 2008, 2009 ; Hanseth and Lyytinen 2010),

open-source online communities (Faraj et al. 2011, 2016; Shaikh and Vaast 2016),

data infrastructures (Blotenberg et al. 2022),

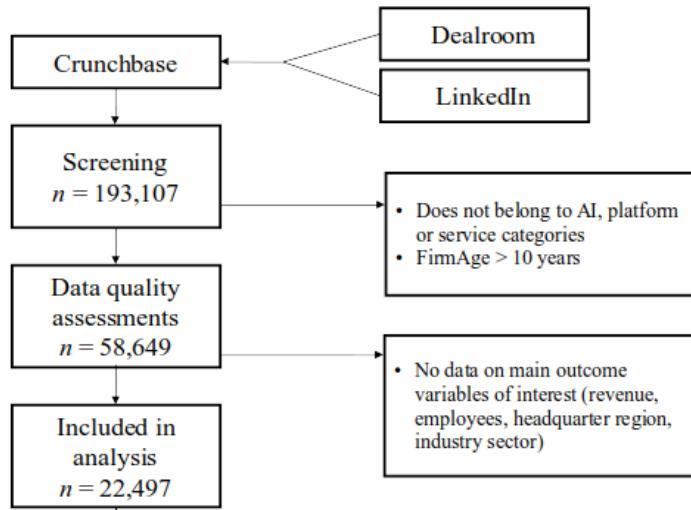
or digital platforms (Constantinides et al. 2018, Foerderer et al. 2018, Hein et al. 2020),



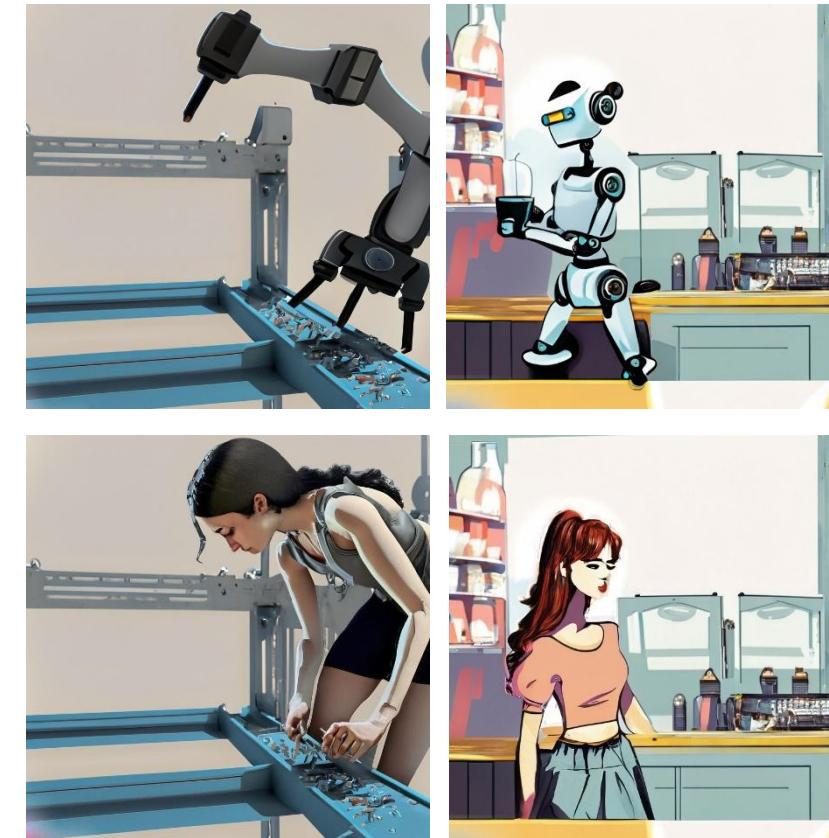
produce unbounded growth.

From Fairy Tale to Real World Data

Focusing on the marginal impact of AI on scaling platform or service ventures
(Gu et al. 2022)



AI-enabled platform
(2,376)



Non-AI platform
(13,125)

AI-enabled service
(606)

Non-AI service
(4,396)

From Fairy Tale to Real World Data



OLS regression results

Indep. Vars.	Scaling Intensity	95% CI	Adj. R^2	Obs.
<i>Empl</i>				
<i>AI-enabled platform</i>	0.32	[0.30, 0.35]	0.14	2,235
<i>non-AI platform</i>	0.28	[0.26, 0.31]	0.12	2,235
<i>AI-enabled service</i>	0.32	[0.27, 0.37]	0.17	510
<i>non-AI service</i>	0.25	[0.19, 0.30]	0.1	510

Note. Observations were matched via NNM, resulting in the same number for each start-up group. Standardized scaling intensity coefficients and 95% confidence intervals are reported. The estimated intensities are used to create estimates of their marginal effects on start-up *Rev*.

Results remain robust, controlled for regions, sectors, and different size metrics

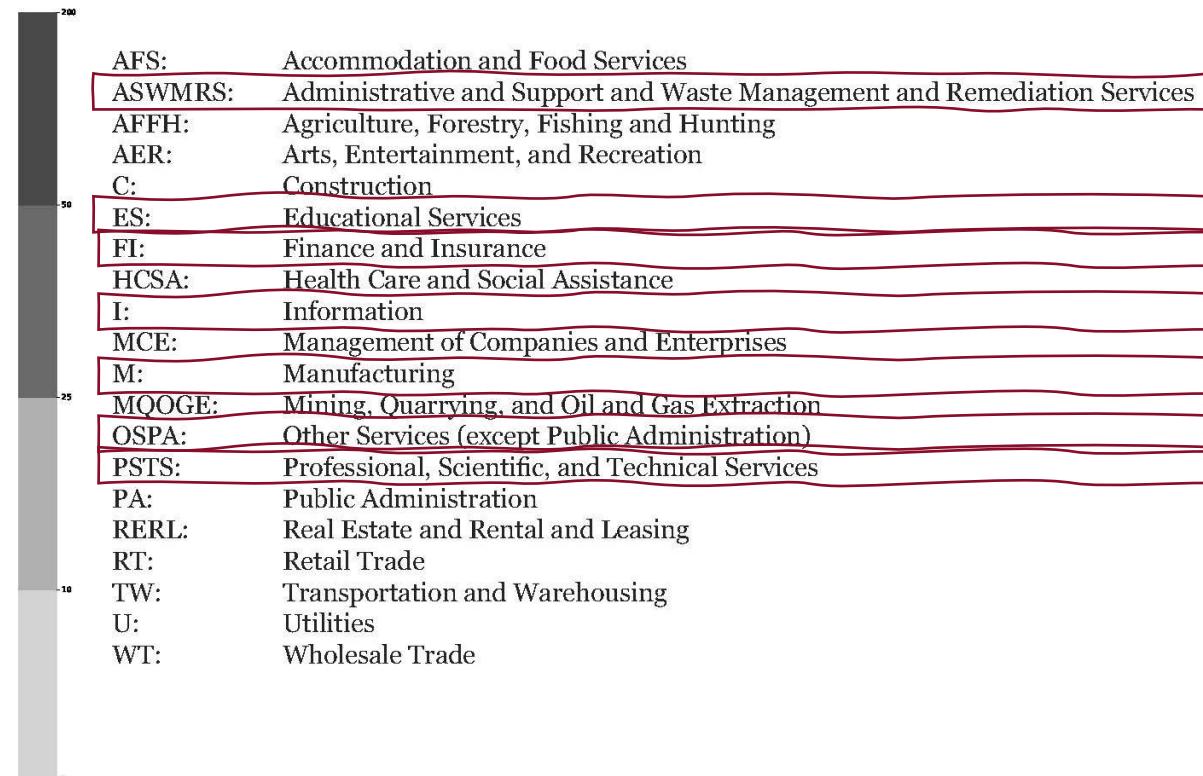
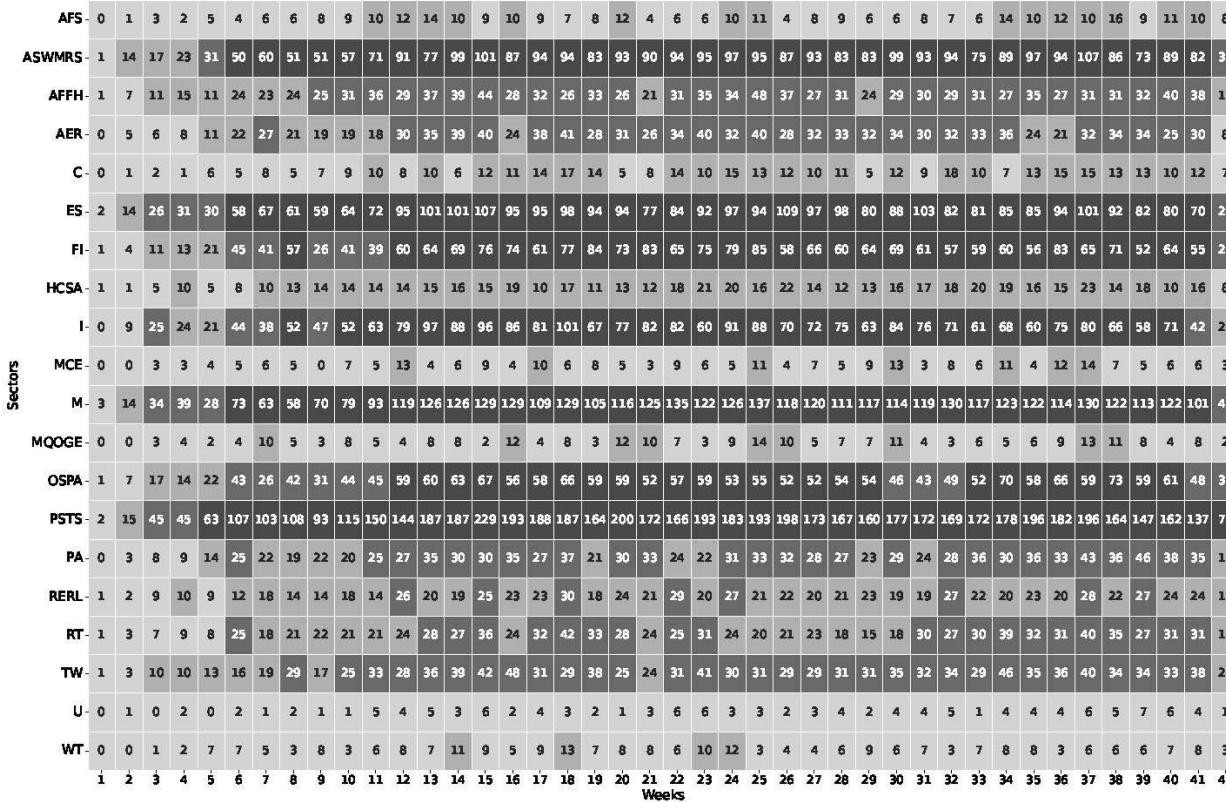
AI-enabled ventures have higher scaling intensities, but *confidence intervals overlap*

AI ventures **do not significantly scale** better than other digital ventures

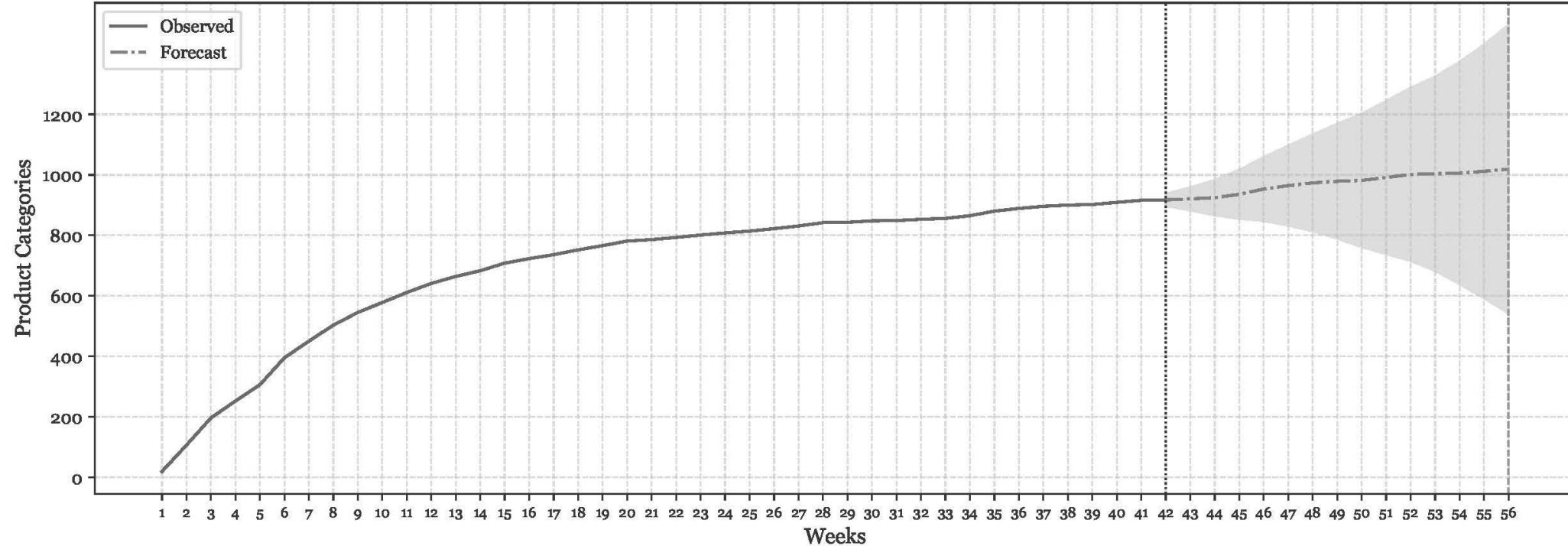


Maybe platforms are not generative,
because users do not „use them broadly“?

Maybe LLM platforms are not horizontal?



Maybe LLM platforms are not horizontal?



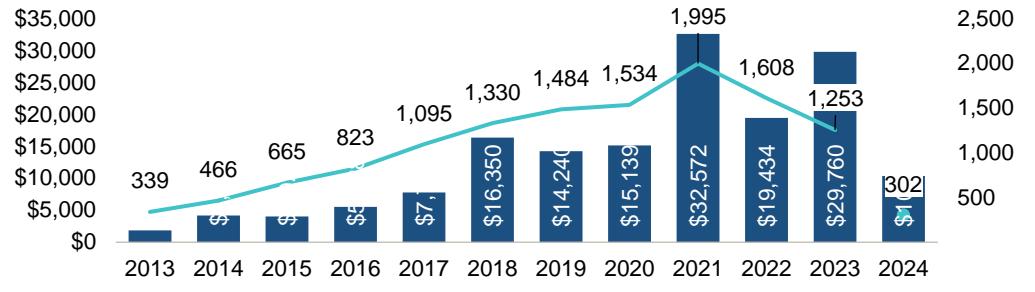
No („exponential“) growth of new use cases (in b2b contexts)



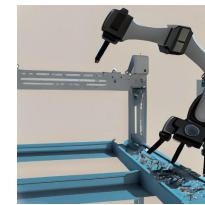
Maybe platforms are not generative,
because investors do not „invest right“?

Horizontal vs. Vertical AI platforms

VC deals: horizontal AI platforms



■ Deal value (\$M)
■ Deal count



VC deals: vertical AI Services



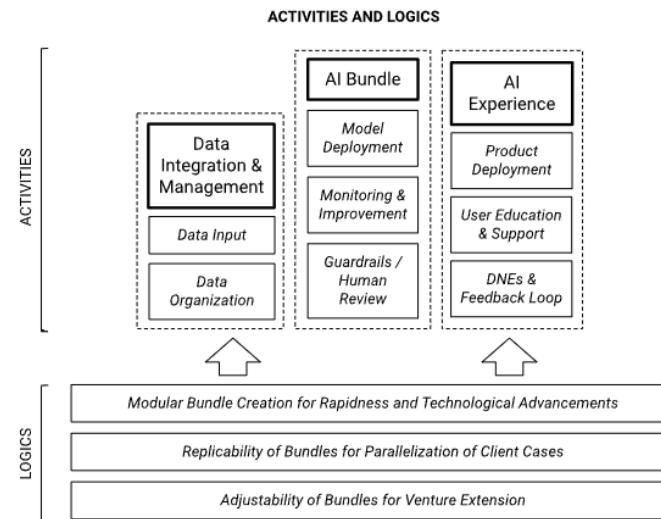
■ Deal value (\$M)
■ Deal count





Maybe platforms are generative,
but we we have to get it „right“?

Dissimilar to regular platforms, **you create the use cases** – not your broad audience



Build your platform with Business & Code Templates

- How to collect, manage, integrate your data
- How you deploy, evaluate, improve your models
- How you deploy your product and include feedback data

for
quick testing of various use cases (verticals)



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