

State of AI

Vom Katzenbild zum geopolitischen Spielball

Vienna, November 7th, 2024

Clemens Wasner

 @ClemensWasner

 Clemens Wasner

 www.AI-Landscape.at

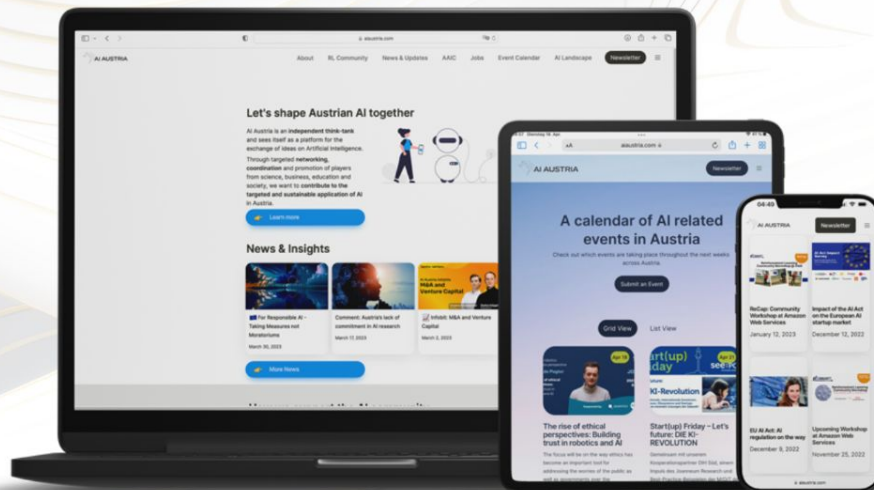


AI AUSTRIA

Shaping the Future of AI in Austria



- Non-profit organisation , est. 2018
- Supports the AI ecosystem in Austria
- 100% independent



LANDSCAPE AUSTRIA 23



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AI STARTUPS & COMPANIES

AgriTech & FoodTech Beetle, FARMBOOK, METOS, Pixofarm, SMARTSOU, smkTec	Big Data EPIVIVE, Digital, GONARISE, HESPA, KIVU, nexyo, symflow	Green & CleanTech alteso, BRAINBOX AI, misteriaz, NISTA, PagaHarm	EdTech EdTech	Energy & ClimateTech ENERGY, EMBALI, FAICOIN, PowerBot, serviceW	Enterprise CYARA, EDDI, Microsoft, SAP, Siemens, ubitec
Frameworks MAZE, navio, KNECCION, rskine, SPARTAN, twingz	FinTech, InsurTech & RegTech dolphin, moneycare, FAIT, ATLAS	Gaming ATLAS	GenAI & Asset Inspection DatoKit, N VISION, STRUCINSPECT	Health & MedTech BRIGHTMIND, Celeris, clir, cogivis, Diagnosis, medius, TREATOR MEDICAL	LegalTech LeReTo, JAAPER.DS
HR Tech DAPHOS, employaa, jobiqo	Image & Video Processing NTLINE, CarCutter, GDEKI, forlan, ivii, kaledo, LALAND, Mokker, play, QUANTIFACE, Snap Inc., SWARM	Industry & Robotics AGILITI, Asiliax, GYROCONCEPT, craftbotics, INNOX, VISIO, partum, visplare, WORKHELD	Language & Text Kodak, RCI, RHEINER, Pindcheck, READ, TactiView, Tobby	Logistics Logistics, Caplio, AppFactor, PROCHECK, MEGAS, PROX, SDOCK, ZACKPLAN	Retail & Commerce ZVTX, checkkins, D E T E G O, danube.ai, SHTRACKER, smartengine, ZOO
Marketing & Media Analytics advertising, JENTIS, newswood, Lyzard	MedTech Mentalite, DISCOVER, Legitay, HIRSCHENBERGER, NEWSGEMAL	Mobility AFIYO, MOTION3D, STUBiq	Privacy Celantur, MOSTLY.AI	Productivity 500, ef field, proX, SDOCK, ZACKPLAN	PropTech COMEX, COMEX.K, ZACKPLAN
Sales & Marketing 3LIOT.ai, emarsys, FLOWTAP, QUOMATIC.AI, Redem, smec	SportsTech Z'NE14	SupplyChain D'AVILA, MAGNA	FinTech & InsurTech BLU DELTA, digicust, FINMATICS, Legum, optadaba, yakov	Tourism MAGNATOUR, VISITORS	Trustworthy AI Daki, GFK, Impact AI
					Development & Consulting BRZ, ISV, L_NIZ, StadtWien, GeoSphere Austria

EARLY ADOPTERS

Corporate A1, ANDRIZ, ERBATA, AT&S, brantner, bitpanda, Caritas, ecom, FFI, GoStudent, Infireen, MAGNA, Raiffeisen Bank, SPRINGER, TRICENTIS, TTEch, undaschgroup ventures, DIGITAL SOLUTIONS	Development & Consulting BRZ, ISV, L_NIZ, StadtWien, GeoSphere Austria
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ENABLERS & EXTENDED ECOSYSTEM

Accelerators, Incubators & Investors A1, BSC, BSCISE, BREEZEMINT, ELEVATE, ELEVAT, E.L.C.T, NDI, PUSH, Speedinvest, Verbund X, lista	Communities & Non-profit Organizations AI AUSTRIA, DATA NAUTS, DID, HUMOR, WIVVOX	Conferences & Events AIIC, confare, EXPERIMENT KI, LSZ	Education & Course Providers ARS, A.Lands, FIVESQUARE, goodays, Learn-Xi, mylearnix, UNIVISION
Government & Official Portals AM.AT 2030, Digital Austria, SFG, W.K.O.	Innovation & Startup Support ABA, FFG	Media & Podcasts infuture, DATA	Research AIT, amazon, BSC, CMC, Fraunhofer, ELIA, EM, Gartner, ICM, scch, TIEVOY, TIMEWARP
Universities FH DANUBEUR, FH JOHANNES KEPLER LINZ, JKU, M O T, WU	Infrastructure TIMEWARP	Presented by © Clemens Wasner in collaboration with rebeAI AI AUSTRIA 3LIOT.ai Logo design by becom	

GENERATIVE AI - CLASS OF 2023

Audio & Video LiviaAI	Adresses & Artiste 3LIOT.ai, SUNAI, S.MYSSELLE, ATLAS	Image & 3D modeling Mokker	Corporate APA, Östereich Werbung	Tech mygr, 500, ONTEC, STRG	Code generation Magic
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A brief look back 🙄

2012

2016

2017

2018



2012

2016

2017

2018



2012

2016

2017

2018

TECHNOLOGY AND IIOT

AI Could Add \$15 Trillion to Global Economy by 2030

Amid warnings of the economic disruption that robots and automation could unleash, researchers are finding that new technologies will help fuel global growth as productivity and consumption soar.

Bloomberg

JUN 29, 2017

50 National Artificial Intelligence Policies as at February 2020.

2012

 **Argentina**
Drafting the "National Plan of Artificial Intelligence". Falls under the Innovative Argentina 2030 Plan and the 2030 Digital Agenda.

 **Canada**
2017 federal budget announced five-year, \$125m plan. Led by CIFAR. Research and talent focus. First National AI Strategy.

 **Denmark**
March 2019, Denmark announced the "National Strategy for Artificial Intelligence" with four key objectives.

 **Hungary**
October 2019, Hungary announced an AI Action Plan, the first pillar of a national AI strategy, expected in 2020.

 **Italy**
March 2018, AGID released a White Paper called "AI at the service of citizens," which was edited by the AI Task Force.

 **Malaysia**
2018, Malaysia revealed a National Artificial Intelligence Framework expanding the National Big Data Analytics Framework.

 **Norway**
January 2020, Norway issued its National Strategy for Artificial Intelligence.

 **Qatar**
October 2019, National AI Strategy as a blueprint produced by Qatar Computing Research Institute (QCRI).

 **South Korea**
May 2018, five-year AI development plan launched with \$195B budget.

 **Tunisia**
AI Task Force and Steering Committee to develop a national AI strategy. The strategy was scheduled to be published in the first quarter of 2019.


 **Australia**
November 2019, AI Roadmap focused on specialization in health, infrastructure and natural resources. Planning for an additional 161,000 AI specialists by 2030.

 **Chile**
Expected April 2020. Ministry of Science, Technology, Knowledge, and Innovation created a committee of 10 experts to develop.

 **Estonia – Kratts Strategy**
May 2019, Estonian AI experts, led by government CIO produced a roadmap, later adopted as the Estonian National AI Strategy in July 2019.

 **India**
June 2018 working paper on using AI to ensure social growth, inclusion and positioning the country as a leader in AI.

 **Japan**
March 2017, Japan's AI policy, the "Artificial Intelligence Technology Strategy," was announced second only to Canada with "Society 5.0".

 **Malta**
October 2019, "A Strategy and Vision for Artificial Intelligence in Malta 2030" Malta.ai launched and aspiring to be the "Ultimate AI Launchpad".

 **Pakistan**
Presidential Initiative for Artificial Intelligence launched December 2018, focused on training beginners in AI and advanced technology.

 **Russia**
October 2019, Russia published its National Strategy for the Development of Artificial Intelligence by 2030.

 **Spain**
March 2019, the Spanish Ministry of Science, Innovation and Universities launched the RDI Strategy in Artificial Intelligence.

 **United Arab Emirates**
October 2017 announced strategy. First country to create a Ministry of AI and first in the Middle East to launch an AI strategy.

 **Austria**
June 2019, "Artificial Intelligence Mission Austria 2030 (AIM AT 2030)". Outlines seven fields for which AI will be critical

 **China**
July 2017, China launched the most comprehensive AI strategy globally with 2030 targets for a \$1T RMB AI industry.

 **Finland**
June 2019, "Leading the Way into the Age of Artificial Intelligence" identified 11 key actions following May 2017 Steering Group announcement.

 **Indonesia**
Indonesian Artificial Intelligence Society (AIS) inaugurated under Smart Indonesia in October 2019. National Strategy expected in 2020.

 **Kenya**
January 2018, government announced task force to create a five-year strategy on national use of emerging technologies.

 **Mexico**
June 2018, "Towards an AI Strategy in Mexico: Harnessing the AI Revolution," serves as a foundation for building full AI strategy.

 **Philippines**
November 2019, AIM, Aboltiz School of Innovation, Technology and Entrepreneurship (ASITE) appointed to craft an AI roadmap.

 **Saudi Arabia**
September 2019, Royal decree to establish an AI center, to align with the Kingdom's Vision 2030 program.

 **Sweden**
National Approach for Artificial Intelligence launched in May 2018.

 **United Kingdom**
April 2018, "Sector Deal" announced. \$1.24B funding as part of the UK's larger industrial strategy.

 **Belgium**
November 2019, "AI 4 Belgium" launched and includes seven major objectives.

 **Colombia**
November 2019, first draft issued for "National Policy for Digital Transformation". Medellín to become an AI & Robotics Centre of Excellence.

 **France**
€1.5 billion plan announced in 2018 influenced by the "Villari Report" to transform France into a global leader in AI.

 **Ireland**
Irish Economic Development Agency led process. AI Master program launched in 2018 and is 100% industry driven.

 **Lithuania**
April 2019, Artificial Intelligence Strategy announced "to modernize and expand the current AI ecosystem and ensure that the nation is ready"

 **Netherlands**
November 2018, AINED published a roadmap for developing a full national strategy.

 **Poland**
November 2019, "Assumptions for the AI strategy in Poland" as an action plan towards developing an AI strategy.

 **Singapore**
May 2017, AI Singapore is a five-year, \$350 million national program launched in to enhance Singapore's capabilities in AI.

 **Switzerland**
An Artificial Intelligence (AI) expert group has published its recommendations for a Swiss AI strategy.

 **United States of America**
February 2019 by Executive Order to promote and protect AI technology. AI.gov launched Mar 2019. Followed by the National Artificial Intelligence Research and Development Strategic Plan.

 **Brazil**
Consultation period ended January 2020. Building a network of eight research facilities focused on artificial intelligence.

 **Czech Republic**
May 2019, "National Artificial Intelligence Strategy of the Czech Republic" was launched.

 **Germany**
€3 billion plan announced Nov 2018 with a dedicated AI strategy to make Germany & Europe a global leader in AI.

 **Israel**
Innovation Authority, tasked with AI policies, has warned that a strategy is needed to prevent falling behind.

 **Luxembourg**
May 2019, launched "Artificial Intelligence: a strategic vision for Luxembourg".

 **New Zealand**
May 2018, AI Forum of New Zealand, released "Artificial Intelligence: Shaping a Future New Zealand."

 **Portugal**
February 2019, "AI Portugal 2030", seeks strengthen economic growth, scientific excellence, and human development using with AI.

 **South Africa**
Intsimbi Future Production Technologies Initiative" launched in 2018 with aim to advancing manufacturing sector.

 **Thailand**
Thailand's Digital Economy and Society (DES) Ministry has drafted the country's first artificial intelligence (AI) ethics guidelines.

 **Vietnam**
Ministry of Information and Communications developing a broad AI strategy.

Source: HolonIQ and source government strategy and policy papers.

www.holoniq.com

Expectations - Autonomous Driving



Expectations - Voicebots



TL, DR: The last 10 years in one picture



Applied AI



First Wave of AI

2012 - 2021

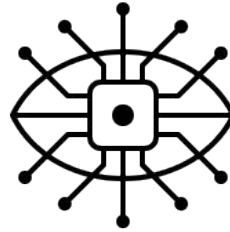


First Wave of AI Technology view

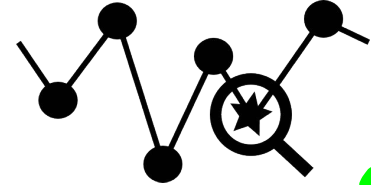
Forecasting
& time series analysis



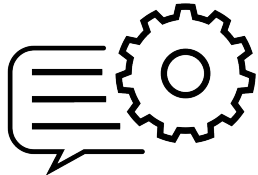
Computer
Vision



Anomaly detection



Natural Language
Processing

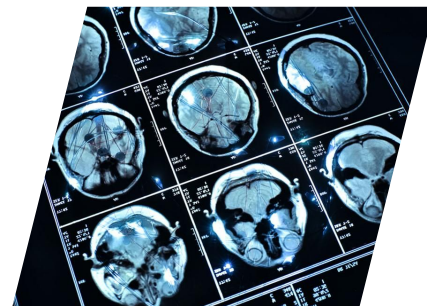
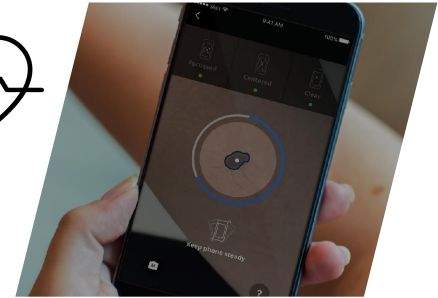
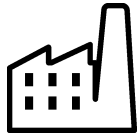


Speech Processing
& Chatbots



State of AI

Cross-sector view



First Wave of AI = B2B Pattern Matching



First Wave of AI

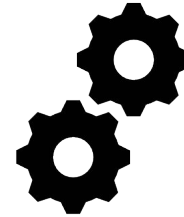
Macro economic view



economic growth



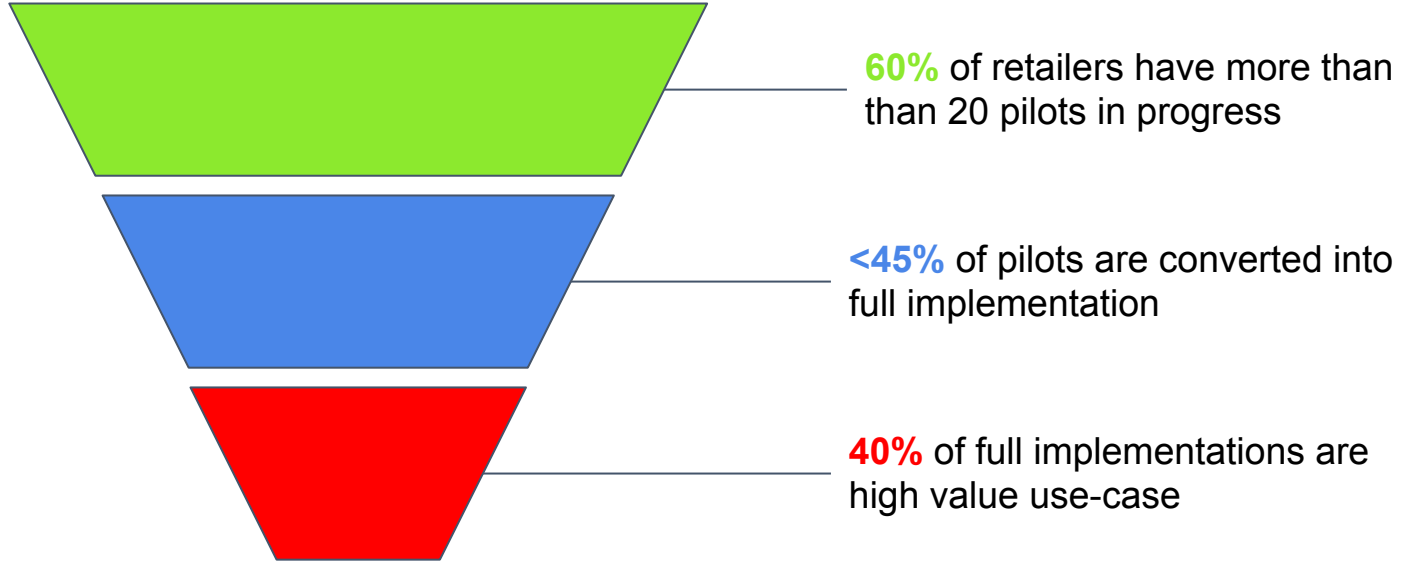
productivity



new business models

Status of global adoption

Example Retail (Google Survey)



First Wave of AI

2012 - 2021



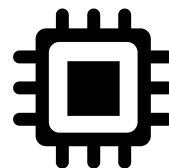
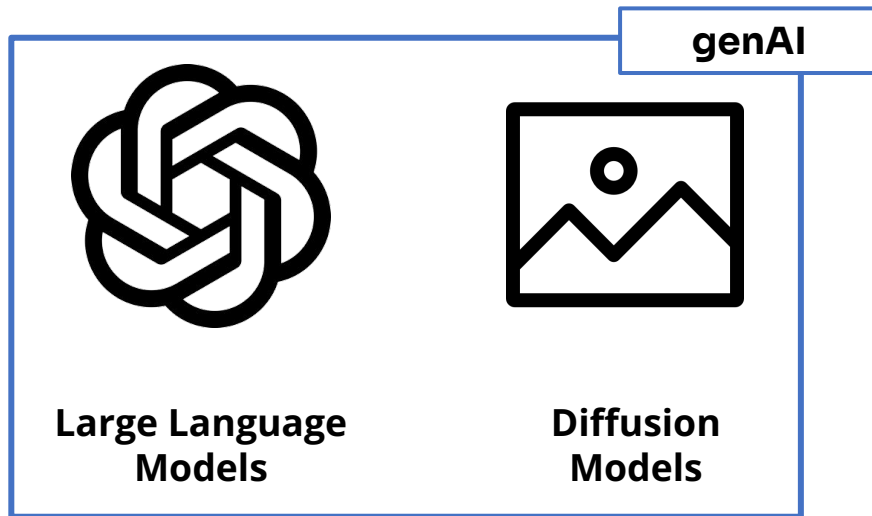
Second Wave of AI

since 2022

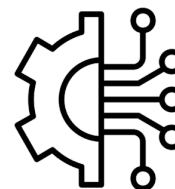


Second Wave of AI

Technology view



AI Semiconductors
& Edge AI



Reinforcement
Learning

Second Wave of AI

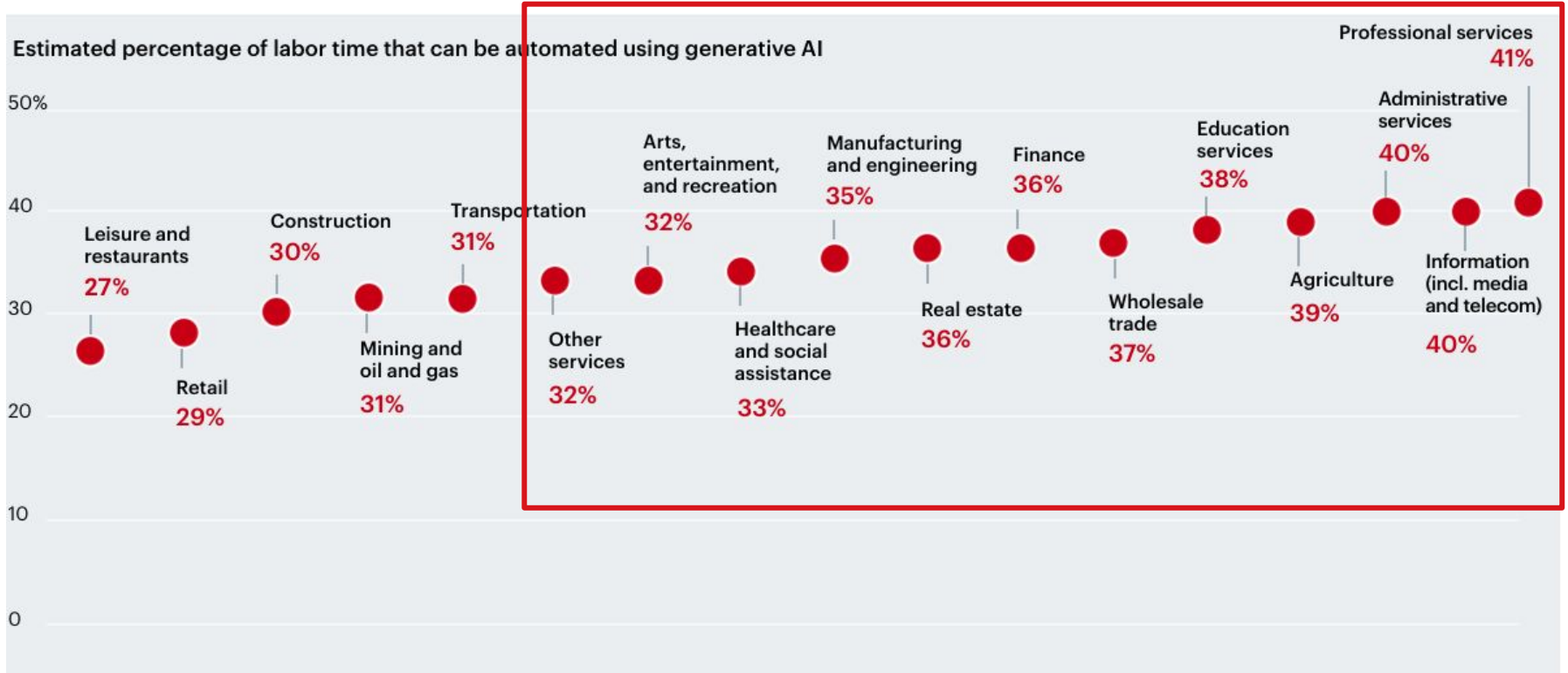
ChatGPT already in Top15 of most visited websites

Website	Domain name	Ranking		Type	Company	Country
		Similarweb (May-24)	Semrush (May-24)			
Google Search	google.com	— 1	— 1	Search engine	Google	United States
YouTube	youtube.com	— 2	— 2	Video-sharing platform	Google	United States
Facebook	facebook.com	— 3	— 3	Social network	Meta	United States
Instagram	instagram.com	— 4	▲ 5	Social network	Meta	United States
Baidu	baidu.com	5 (▲)1	—	Search engine	—	China
Wikipedia	wikipedia.org	6 (▲)1	▲ 4	Reference work	Wikimedia Foundation	United States
X (formerly Twitter)	x.com	7 (▼)2	▲ 6	Social network	X Corp.	United States
Yahoo!	yahoo.com	— 8	▲ 11	Web portal	Yahoo!	United States
Yandex Search	yandex.ru	— 9	▲ 15	Search engine	Yandex	Russia
WhatsApp	whatsapp.com	— 10	▲ 10	Instant messaging	Meta	United States
XVideos	xvideos.com	12 (▼)1	— 9	Pornography	—	Czech Republic
ChatGPT	chatgpt.com	13 (▲)33412	—	Artificial intelligence	OpenAI	United States
TikTok	tiktok.com	14 (▼)2	— 16	Social network	ByteDance	China
Reddit	reddit.com	15 (▼)2	▲ 8	Social network	—	United States

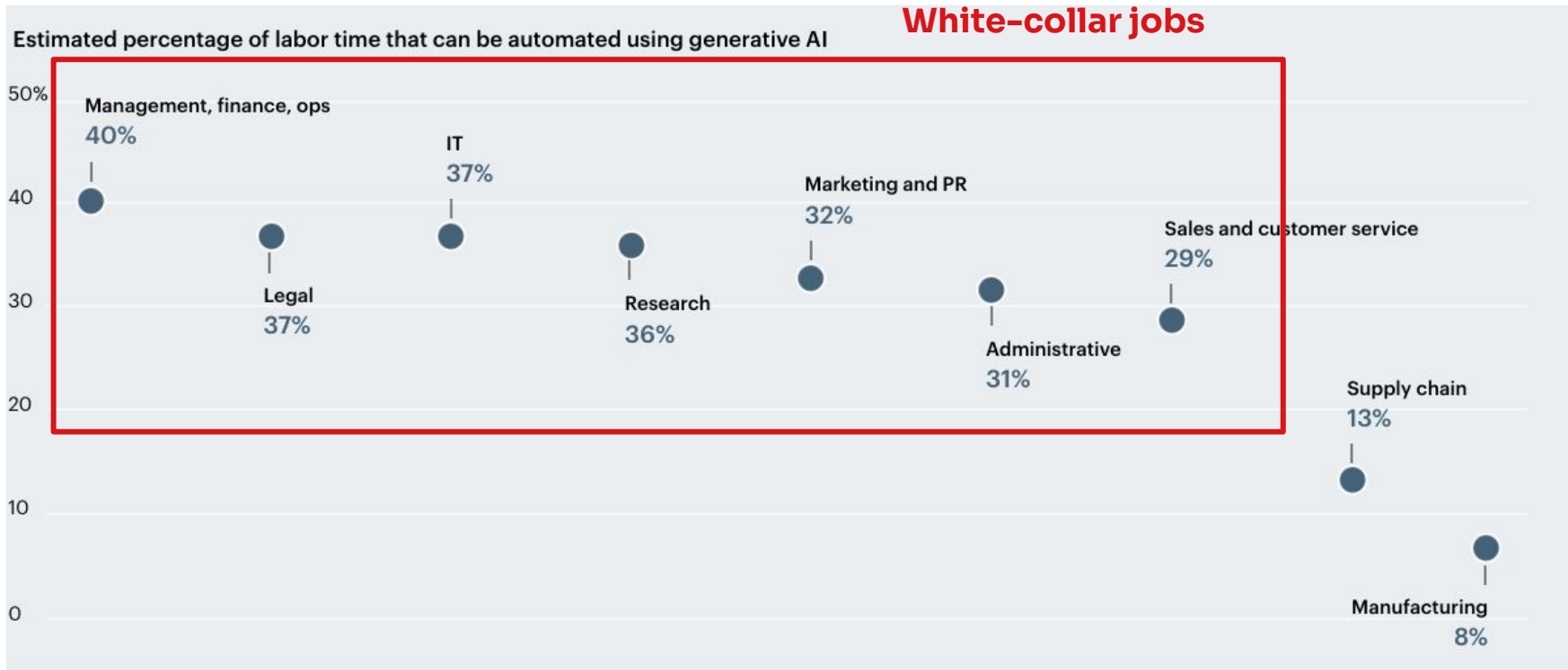
Source: en.wikipedia.org/wiki/List_of_most-visited_websites

Impact of GenAI by sector / industry

White-collar sectors

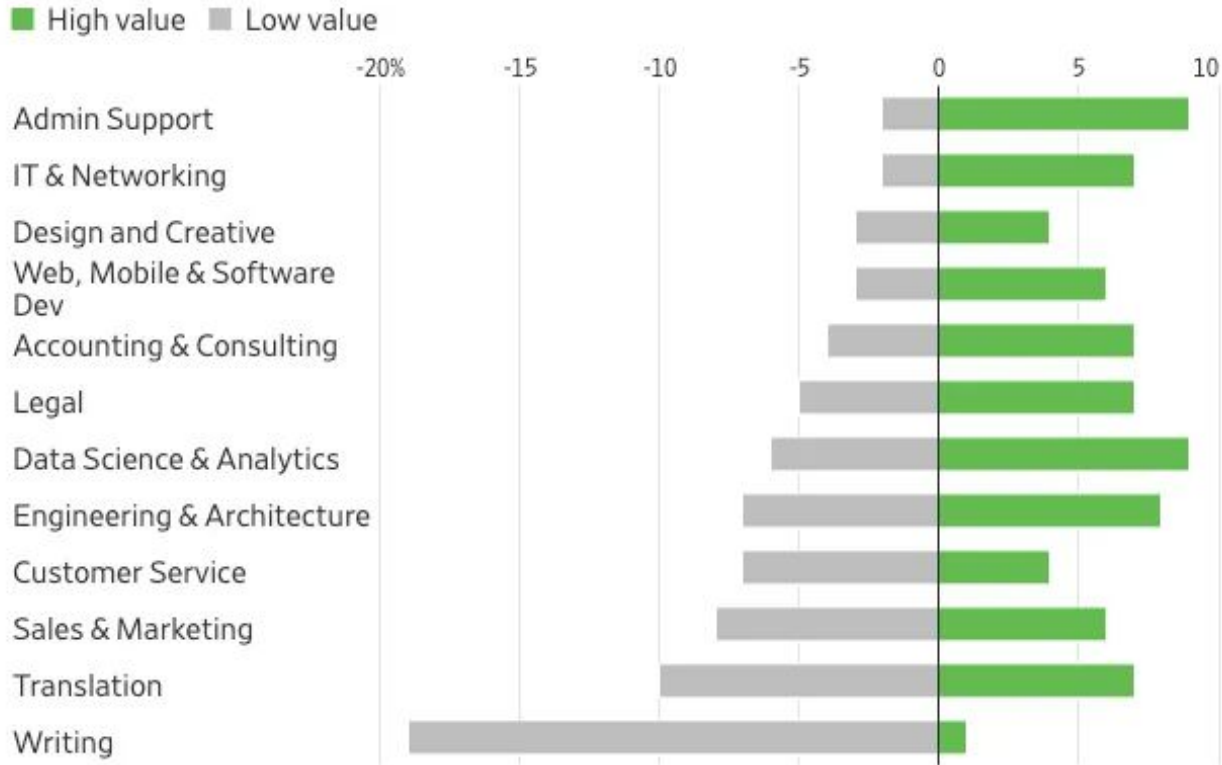


Impact of GenAI by function



Impact of GenAI by task type

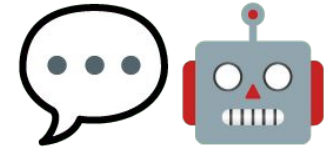
%-change in pay since ChatGPT launched



GenAI is **increasing demand and pay** for higher skilled jobs.

GenAI is powerful but quirky -
it **works best when combined with a skilled human being.**

Second Wave of AI = Human-Like Interaction



First Wave of AI

2012 - 2021

€ 100.000+ AI model development cost, on top of implementation

6-18 months project duration

Team: PhDs in AI & machine learning + development team



Mostly applied in large corporates

Second Wave of AI

since 2022

€ << 100.000 for custom development

short project durations, measured in weeks

Developers + Consultants



Rising number of SME use-cases

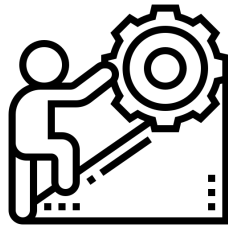
AI Business



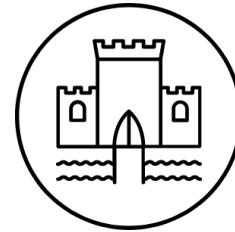
AI differs from traditional software



Lower gross margins

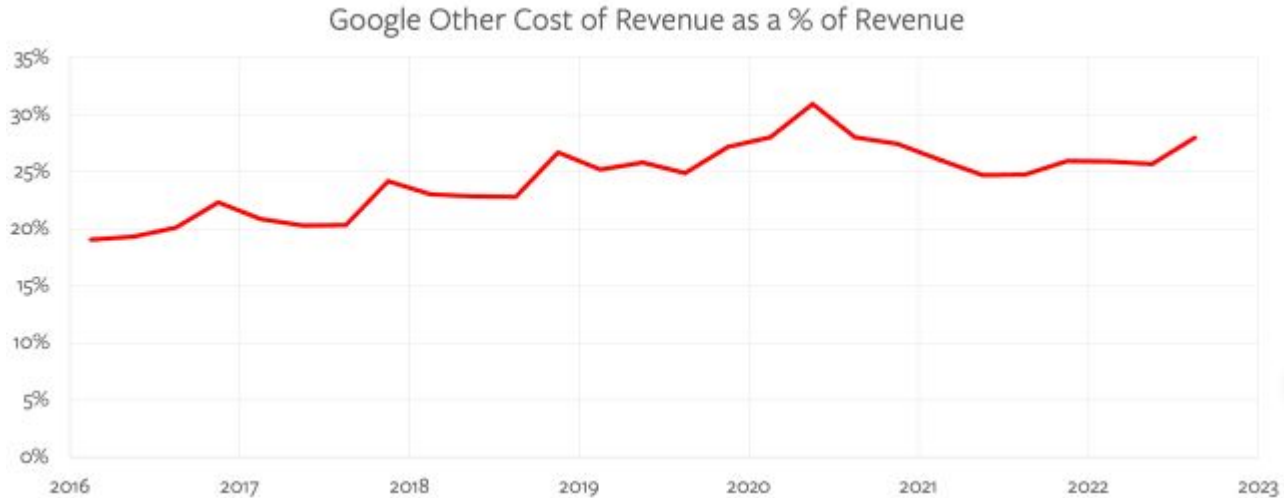


Scaling challenges



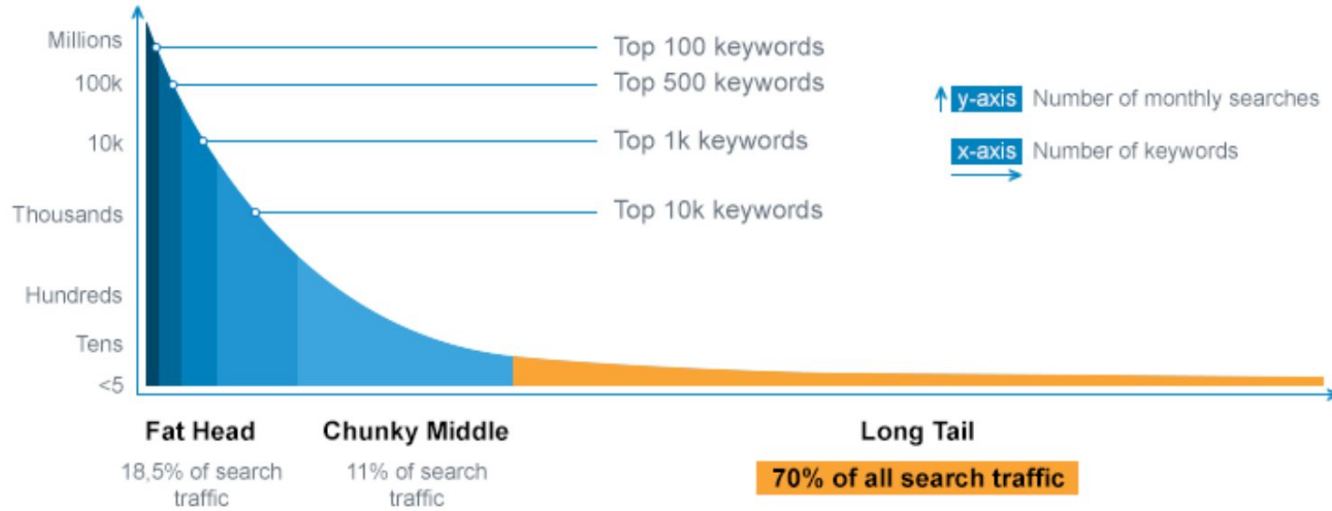
Weaker moats

AI led to 7+pp higher data center cost at Google



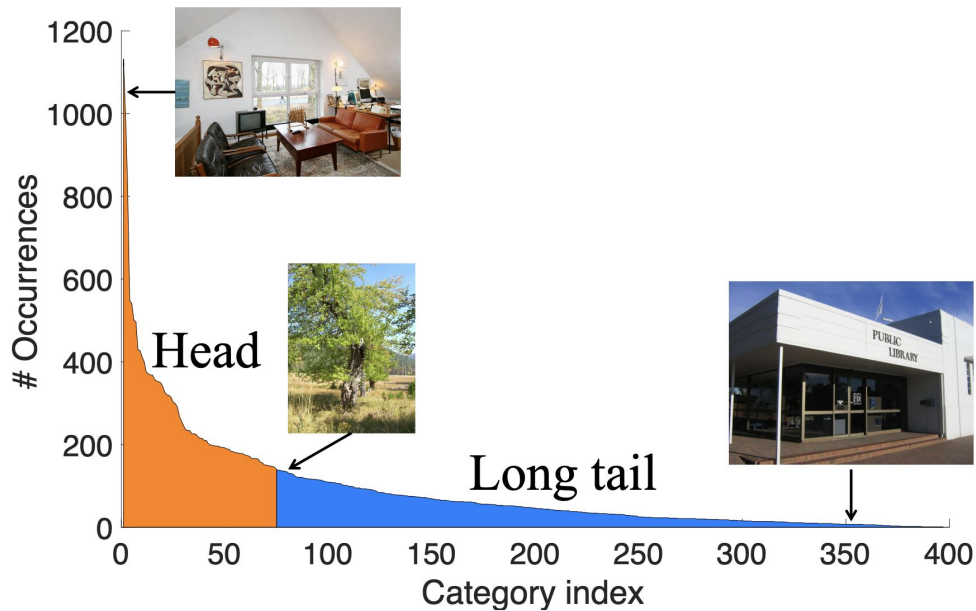
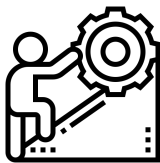
source: Stratechery, 26.10.2022

Long-tail distribution as a challenge for scalability



source: Bill Tancer via Hittail

...especially for AI models and datasets



source: Wang et al 2017

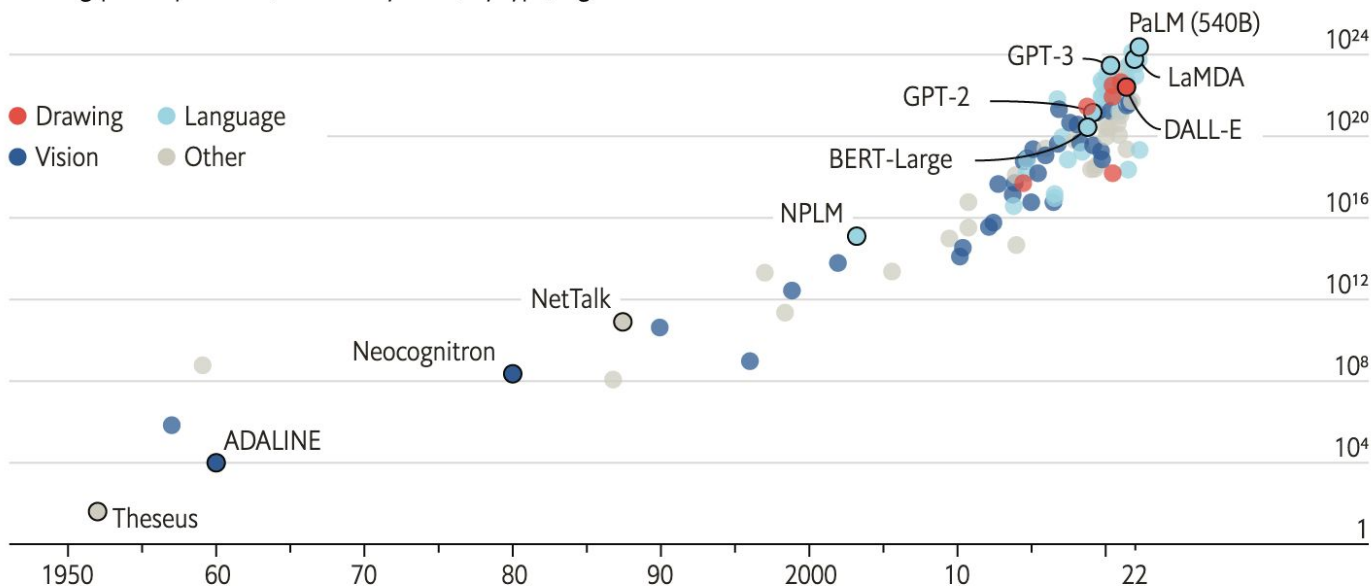
Large AI models as a new business model?



The blessings of scale

AI training runs, estimated computing resources used

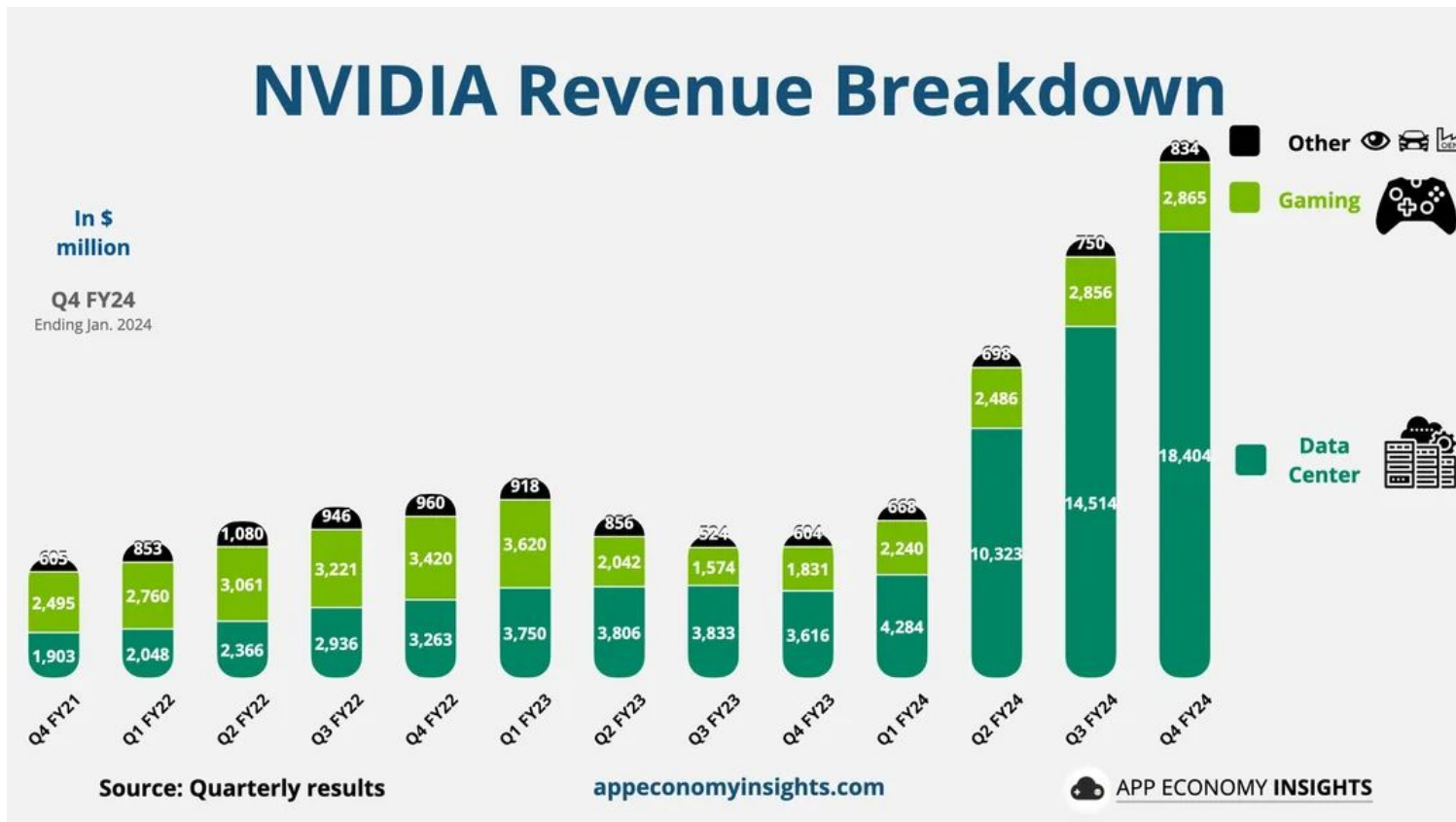
Floating-point operations, selected systems, by type, log scale



Sources: "Compute trends across three eras of machine learning", by J. Sevilla et al., arXiv, 2022; Our World in Data

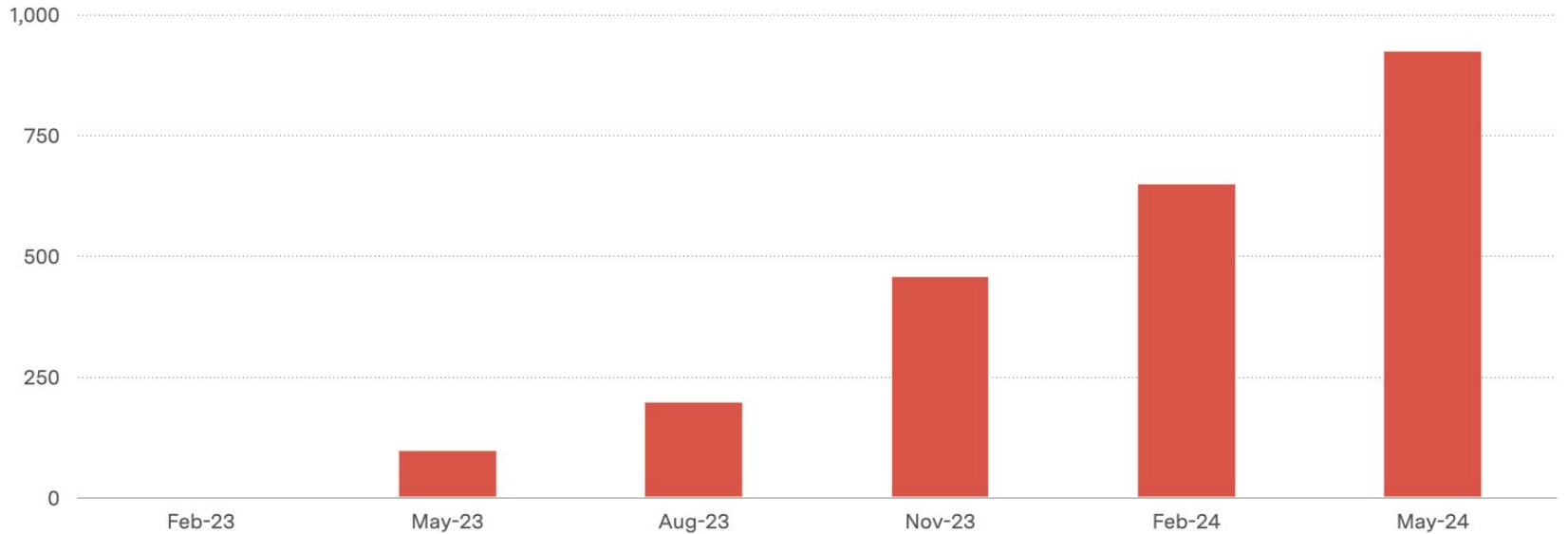
June 2022

Who profits from the current AI Boom?



Who profits from the current AI Boom?

Accenture reported 'generative AI bookings' (\$m)



AI Geopolitics



US chip makers hit by new China export rule

1 September 2022

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Annabelle Liang
Business reporter



Technology

UAE-based G42 working with US to meet AI standards amid China concerns

By Reuters

August 1, 2024 12:32 PM GMT+2 · Updated 3 months ago



DUBAI, Aug 1 (Reuters) - UAE-based artificial intelligence company G42 is actively working with U.S. partners and the Emirati government to comply with AI development and deployment standards, amid concerns about its ties to China.

A spokesperson for the company told Reuters on Thursday that the firm will work with partners "to comply with the highest global standards" in AI, the first remarks from G42 since the UAE [scuttled meetings](#) between it and U.S. Congressional staffers in July.

Talent

Pressured to relocate, Microsoft's AI engineers in China must choose between homeland and career

As geopolitical tensions grow, many employees have decided that a career with the Silicon Valley tech giant isn't worth giving up the comforts of home.

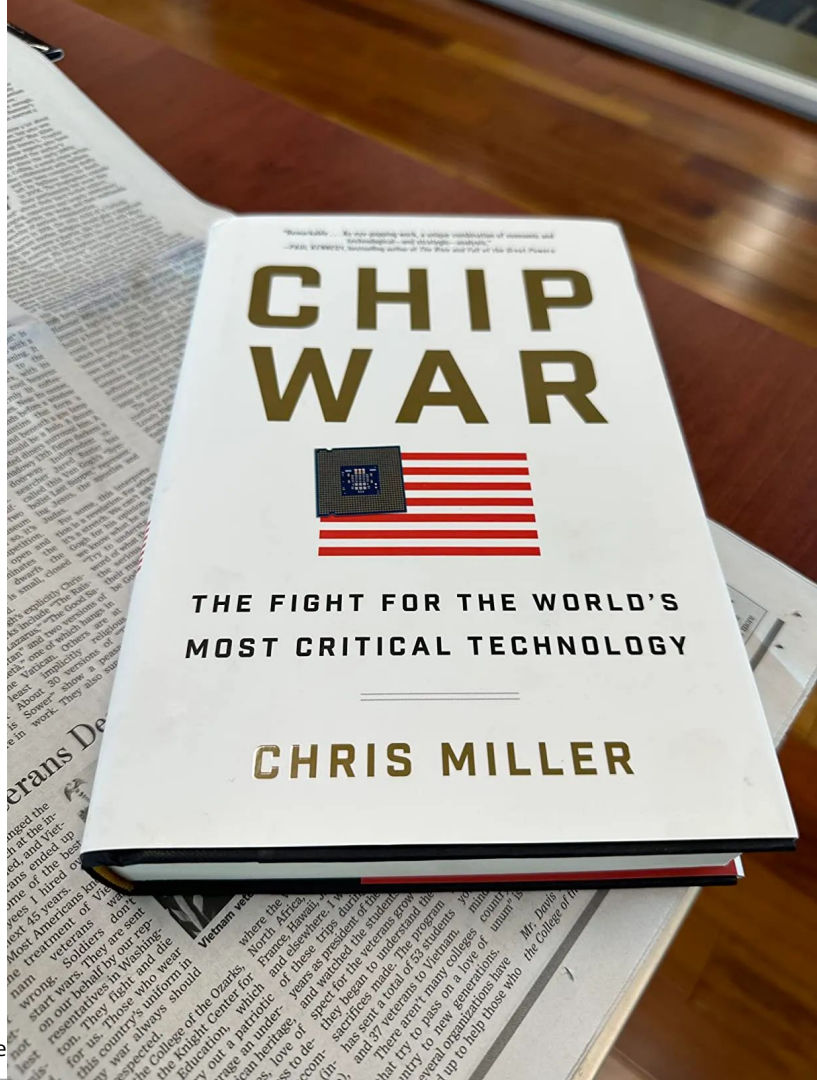


Policy Levers

Policy Tool	Description	Example
 Export Controls	Regulates export of strategic goods.	US export controls on semiconductors to China.
 Sanctions	Blocks assets or bans transactions.	Global Magnitsky Sanctions.
 Tariffs	Taxes on imports/exports to protect industries.	US tariffs on \$200B of Chinese imports.
 Industrial Policy	Government support for key industries.	US CHIPS Act for semiconductors.
 Investment Screening	Reviews foreign investments for security risks.	CFIUS reviews on critical tech investments.

Why the Fuss?

- Dual use technology 🚀 & 📈
- Frontier for the next decades



AI in Europe

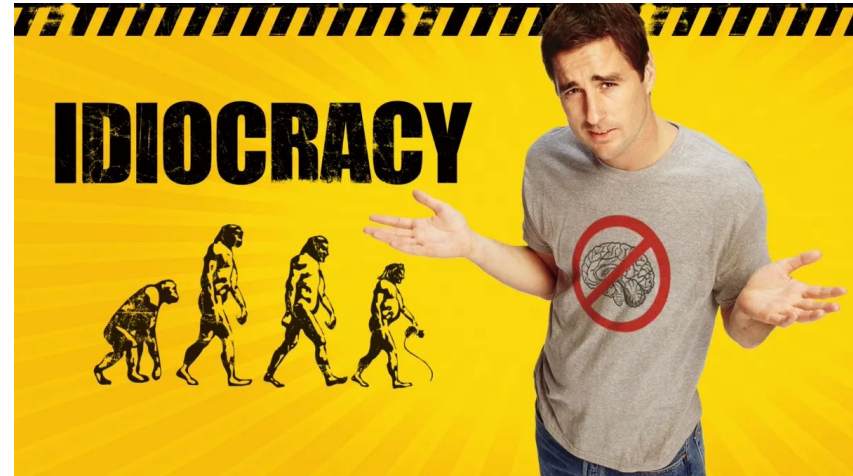
Europe has no Tech Sector



What we feared



What we got





Thierry Breton 
@ThierryBreton



Historic!

The EU becomes the very first continent to set clear rules for the use of AI 

The [#AIAct](#) is much more than a rulebook — it's a launchpad for EU startups and researchers to lead the global AI race.

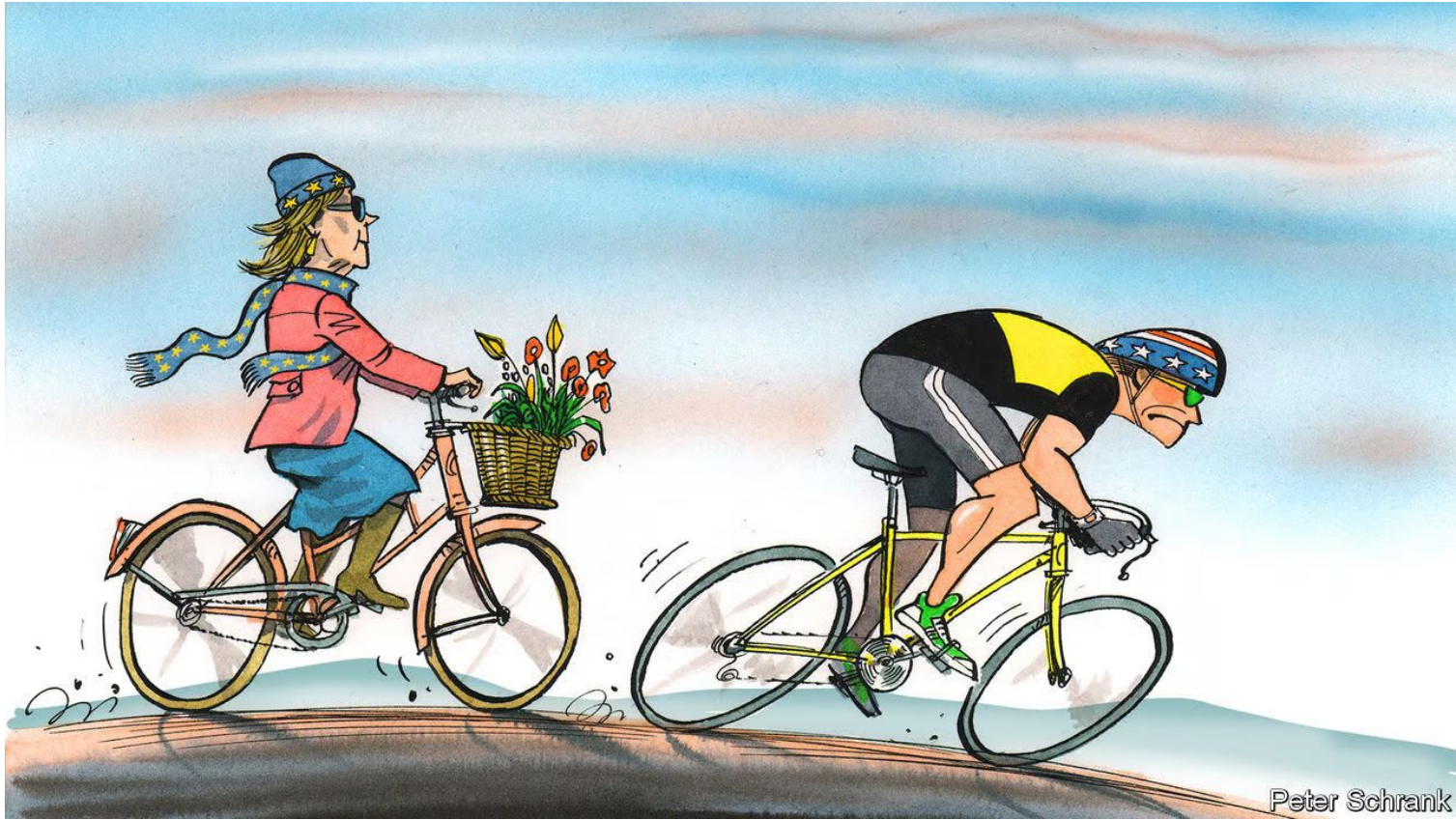
The best is yet to come! 



11:45 PM · Dec 8, 2023 · **7.8M** Views

TL, DR: Europe lost 20 years

- The EU and its members set the wrong priorities
- Tech & Defense strategy are non-existent
- Underdeveloped capital markets
- Overregulation and red tape
- Too few startups, most of them underfunded



How to change course? One petition at a time



SIGN TODAY
JOIN 12168 SUPPORTERS


Name

Email

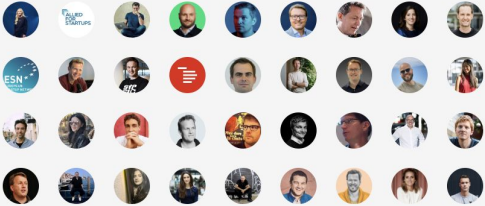
Company

Role

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Contact



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