

IS AI THE GPT OF THE 21ST CENTURY? IMPLICATIONS FOR BUSINESSES

INSME 19TH ANNUAL MEETING

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The Brookings Institution (Washington, DC US)

50+ YEARS OF DIGITALISATION

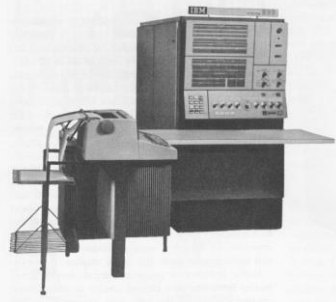


Figure 100. Console - IBM System/360 Model 30
IBM 360: 1964



**IBM PC:
1981**



**Internet,
WWW,
Browser, 2G
1992-95**



**WIKIPEDIA
The Free Encyclopedia**

2005

**iPhone
2007**



**Streaming
Facebook
4G
2007-9**



**cloud
2010**



**assistants
2011-14**



2017



ChatGPT

2022

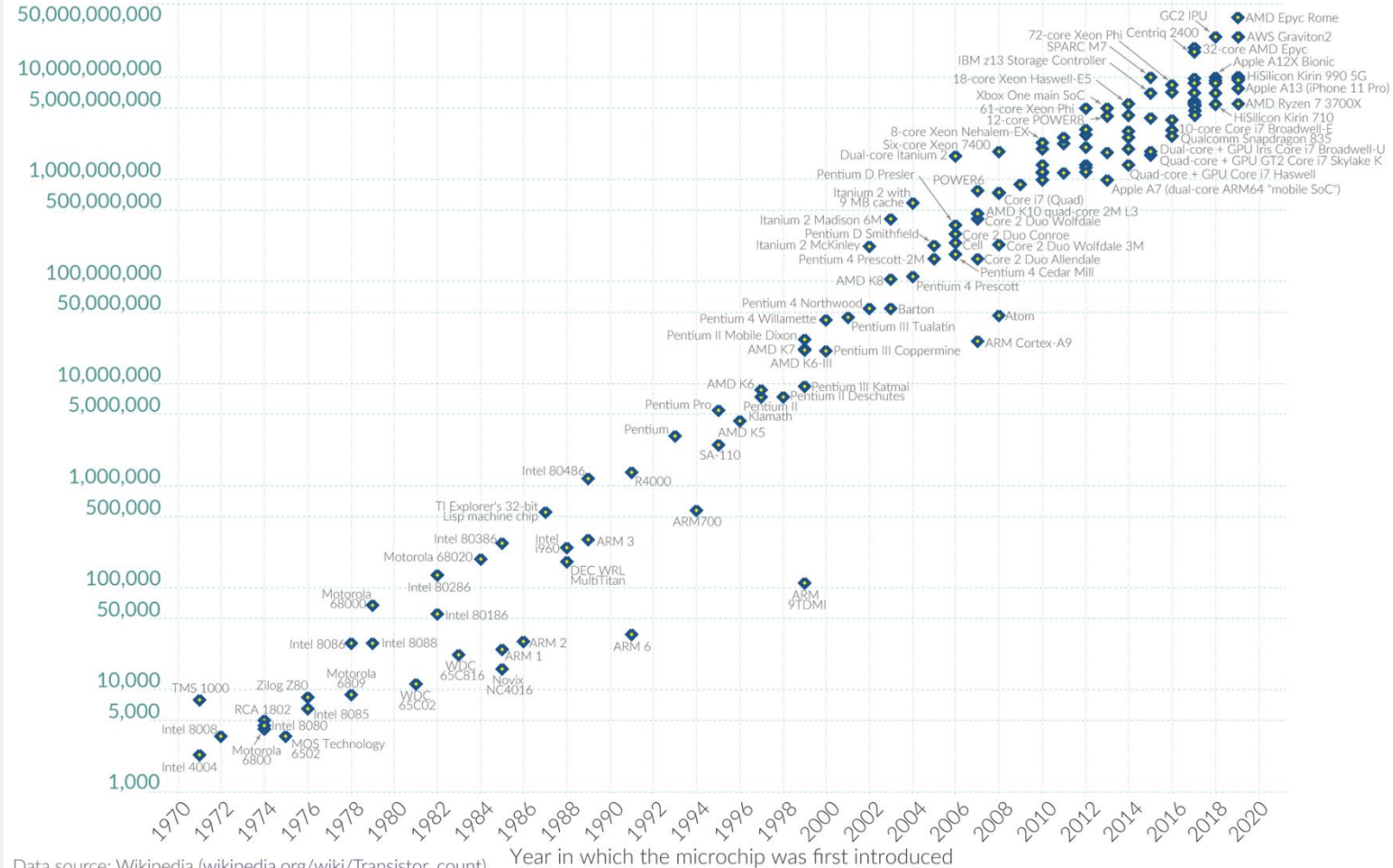
DRIVEN BY VAST INCREASES IN COMPUTING POWER...

Moore's Law: The number of transistors on microchips doubles every two years



Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important for other aspects of technological progress in computing – such as processing speed or the price of computers.

Transistor count

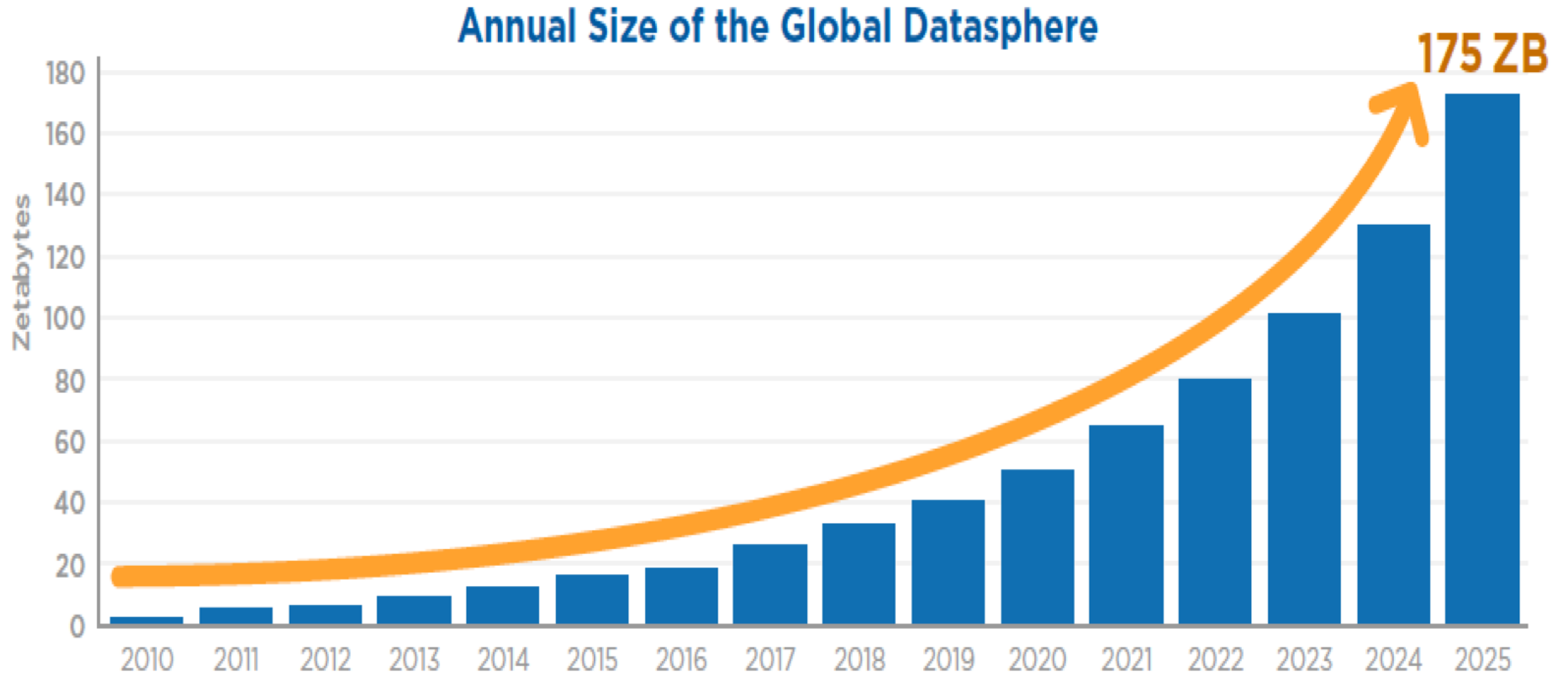


Data source: Wikipedia (wikipedia.org/wiki/Transistor_count)

OurWorldinData.org – Research and data to make progress against the world's largest problems.

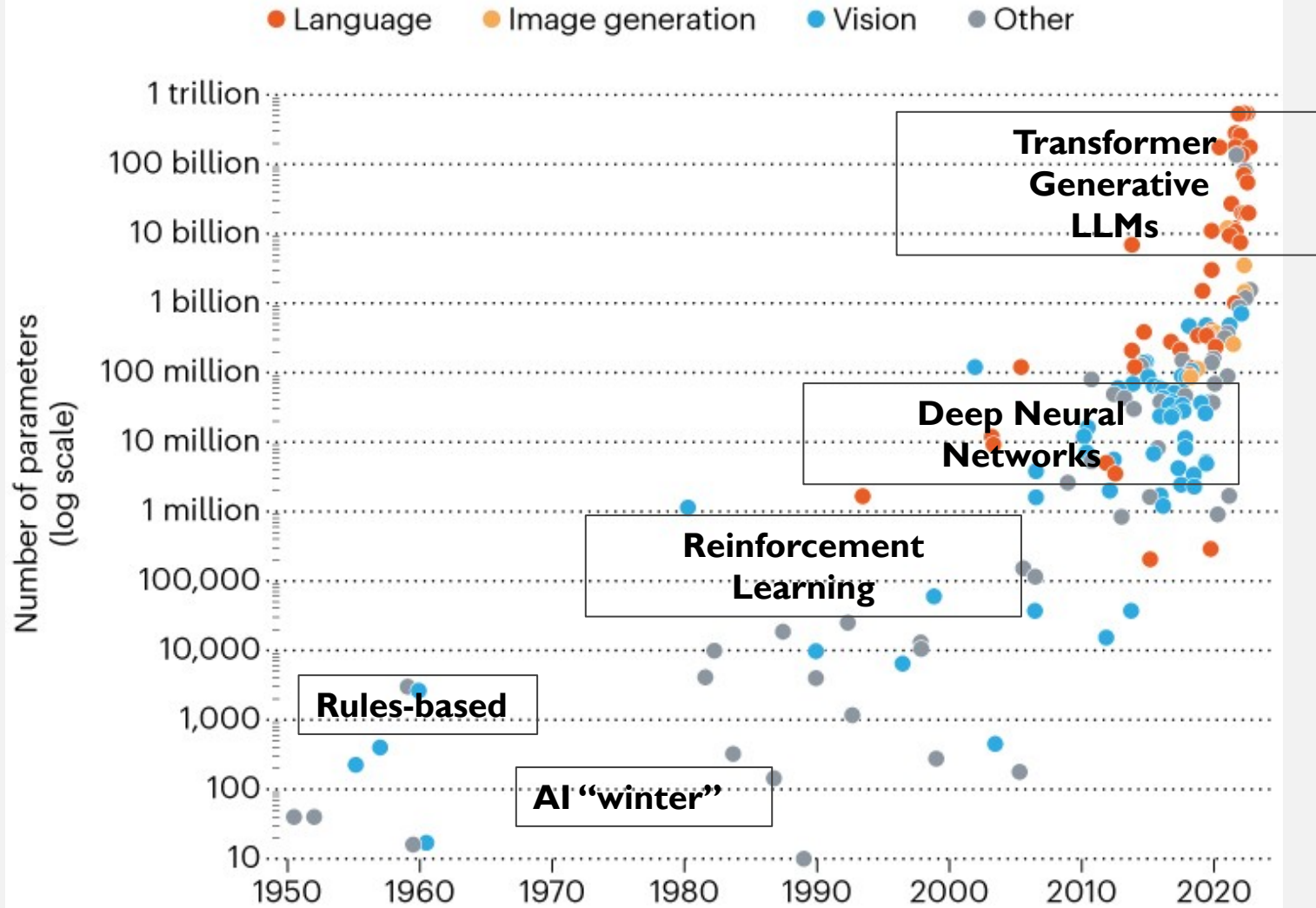
Licensed under CC-BY by the authors Hannah Ritchie and Max Roser.

...LARGE INCREASES IN DATA...



Source: Data Age 2025, sponsored by Seagate with data from IDC Global DataSphere, Nov 2018

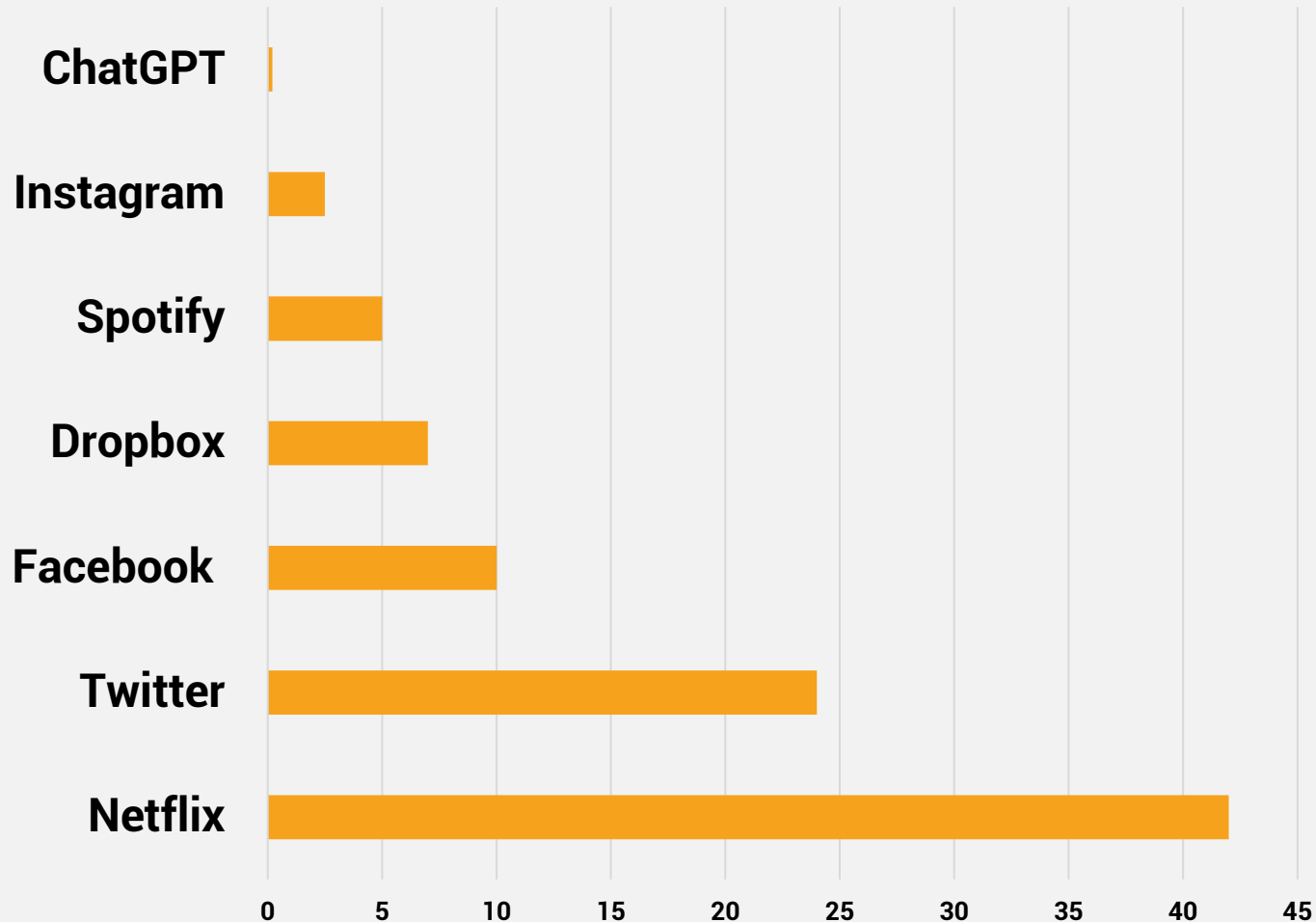
... THAT HAVE COMBINED TO FUEL SOPHISTICATED ALGORITHMS: AI



*'Sparse' models, which have more than one trillion parameters but use only a fraction of them in each computation, are not shown.

THE RISE OF WIDESPREAD USE OF AI...

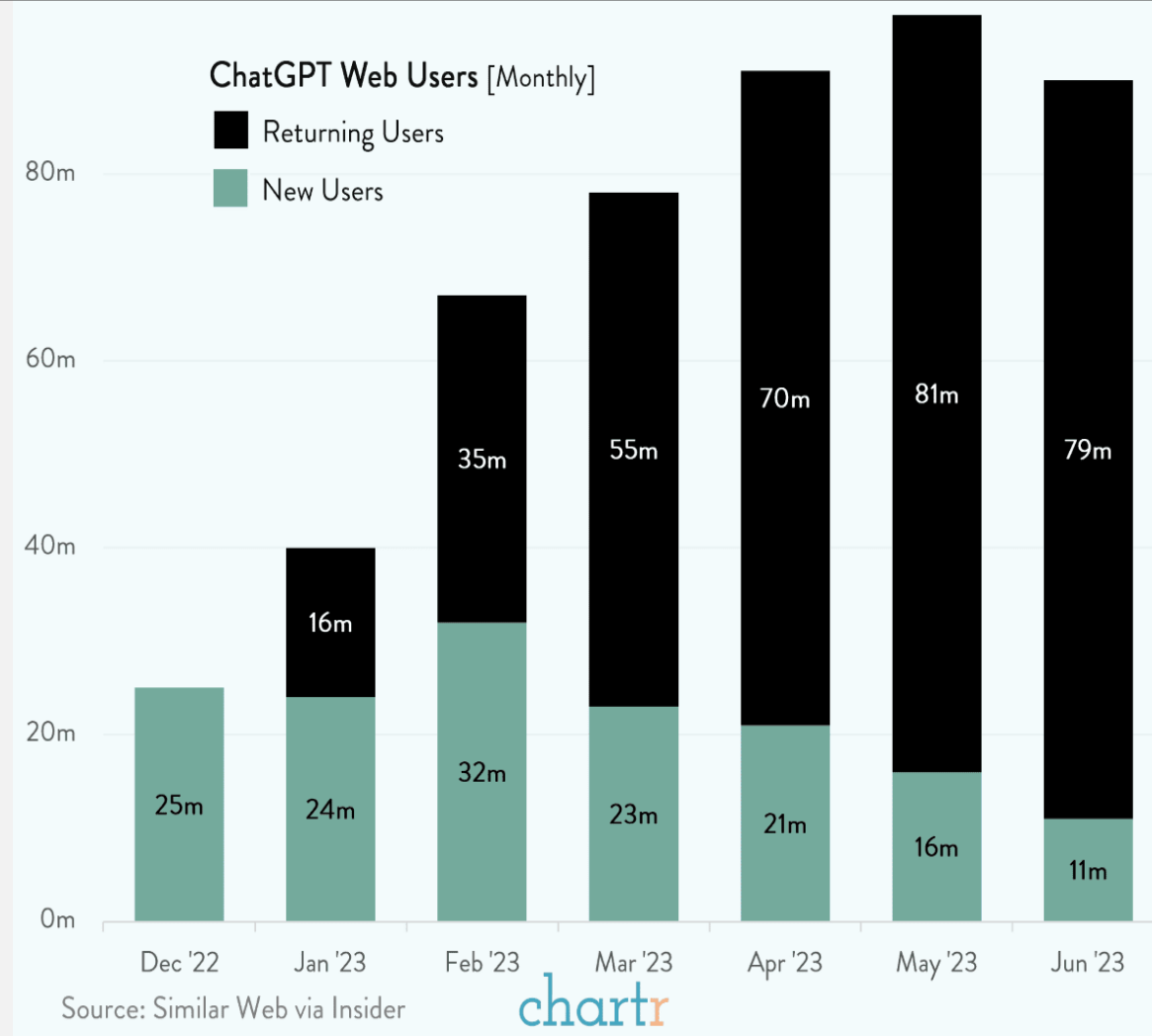
Months to reach one million users



ChatGPT gained **one million users in five days** after its launch on 30 November 2022.

Source: Statista

...AND STRONG ADOPTION.



IMPLICATIONS FOR BUSINESSES

Prepare for a period of:

- technology-induced structural change led by big businesses;
- technological and regulatory uncertainty;
- asymmetrical risks;
- shifting alliances and dependencies;
- new sources of value generation favouring the nimble and agile.



REGULATORY UNCERTAINTY ABOUNDS

- Defining AI...
- What is high-risk vs. low?
- Applicability of existing regulations vs. new
- At what level of government?: local vs. state vs. national vs. regional vs. international?
- What role for litigation and the courts?
[copyright cases]

SHIFTING ALLIANCES: VW

“Volkswagen brings additional partners to Industrial Cloud”

ABB

ASCon Systems 

BearingPoint.

celonis 

DÜRR

GROB

MHP
A PORSCHE COMPANY

NAVVIS

SYNAOS

teradata.

WAGO

DOES AI DISRUPTION FAVOUR SMALL OR LARGE?

	Advantages	Disadvantages
Small Firms	<ul style="list-style-type: none"> • Streamline administrative procedures, • Ability to make data-driven decisions and predictions • Address skill shortages and retain agility • Advantage of intimate knowledge of customers and clients 	<ul style="list-style-type: none"> • Implementation costs • Dependency on vendors / black box • Acquiring, in demand, skilled staff • Lack of Complementary digital assets • Navigating a regulatory thicket • Winner take most dynamics
Large Firms	<ul style="list-style-type: none"> • Advantage of scale and global reach; • Can invest in cutting edge R&D; • Have the ability to tailor solutions and not off-the-shelf products; • Greater data collection opportunities 	<ul style="list-style-type: none"> • Implementation complexity across silos; • Weighing the potential reputational risk • Coping with job losses • Constrained by internal rules and thresholds • Legacy systems and an attachment to a business model

Sources: adapted from Willy C. Shih and Ali Shakouri "How Smaller Manufacturers Can Upgrade Their Tech" *Harvard Business Review*, September 21, 2023 and <https://www.oecd.org/digital/sme/events/generative-ai-for-smes-separating-the-chit-and-the-chatgpt-key-highlights.pdf> on 26 April 2023, virtual webinar and intervention by Rashad Abelson.

GOVERNMENTS CAN HELP...

CANADA: **Scale AI** is one of Canada's innovation superclusters, aiming to accelerate the adoption of AI in Canadian industries, including SMEs.;

UK: **AI for Services**, helps the accountancy, insurance, and legal sectors adopt AI; **Made Smarter** supports manufacturers adopt tech including AI.

Germany: **Mittelstand 4.0 centres of excellence**

Singapore: **Go Digital Program** seeks to help SMEs use digital technologies and embrace digitalization.

South Korea: **AI Voucher Program** provides SMEs and startups with vouchers to get assistance from larger AI firms and research institutes.

**...AIDED BY MARKET DEVELOPMENTS.
OPEN SOURCE AI COULD BE A LEVELLER...**

Advent of open source AI Tools and new open source AI repositories like Hugging Face

Llama 2



**From
Meta**

TensorFlow



**From
Google**

PyTorch



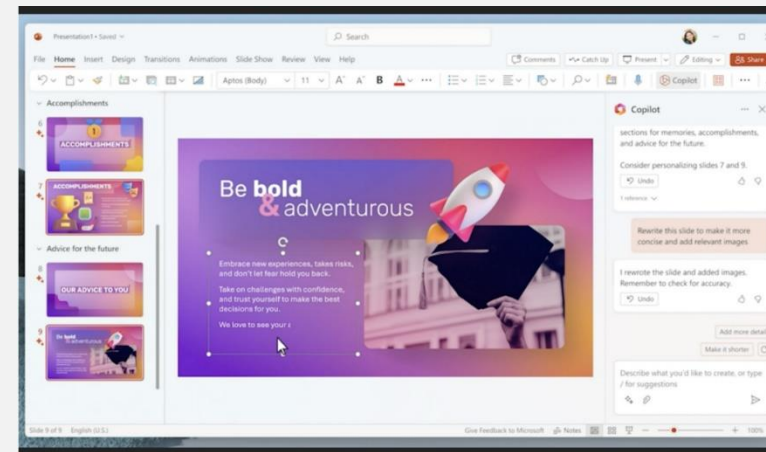
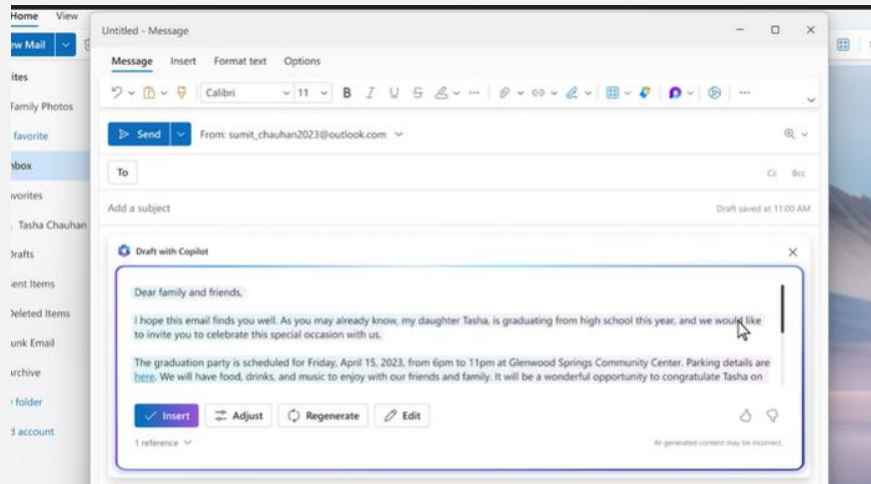
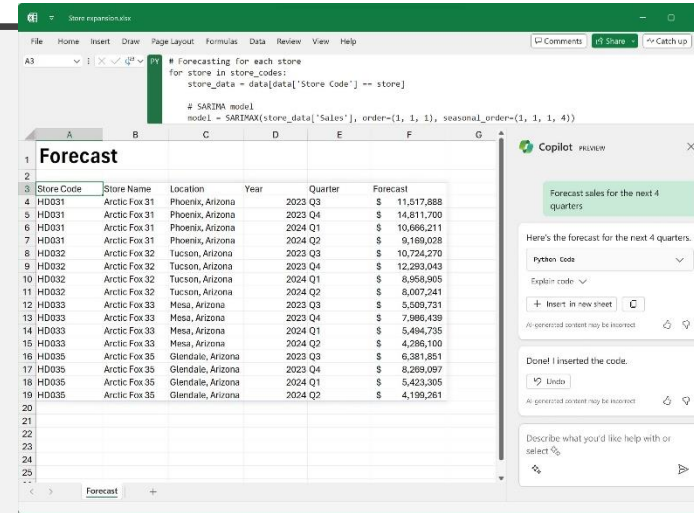
**From
FaceBook**

Keras



**From
ONEIROS**

...AS WELL AS INTEGRATION INTO EXISTING COMMONLY USED SOFTWARE: MS'S COPILOT.



CONCLUSION

1. AI is a powerful technology that **will affect all sectors**, affecting many processes and necessitating a re-think of business models;
2. This **period of disruption** is both a challenge and an opportunity that will confront all businesses: large and small;
3. **Some urgency is warranted.** Use shifting from the experimental stage to applied applications, as AI innovation jumps forward and it gets integrated into existing software tools.
4. All SMEs need to reflect and assess how best to integrate, but it is **dangerous to be complacent.**

THANK YOU

LinkedIn



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