

Navigating the Future: GenAI, Technology & Economics in Oil & Gas

Paula Doyle

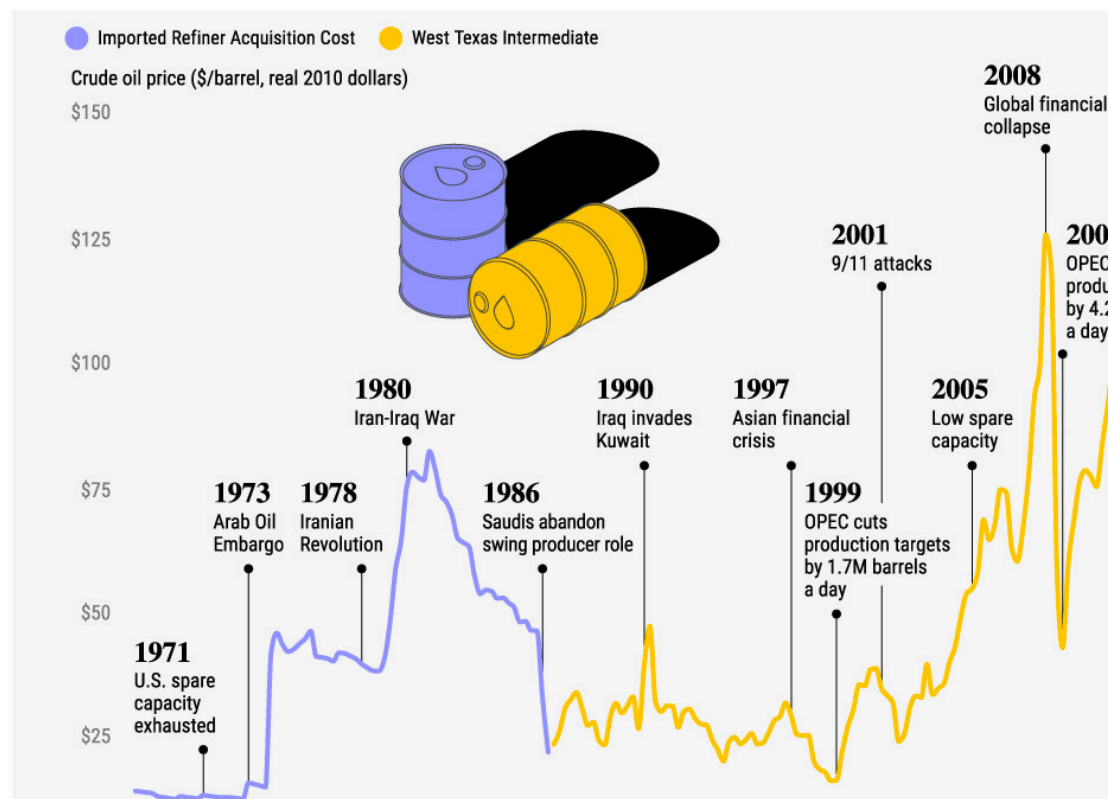
CDO Aker BP

06 November 2024

The Economic Landscape of Oil & Gas

Historic Volatility – Now overlay the energy transition with increasing geopolitical tension

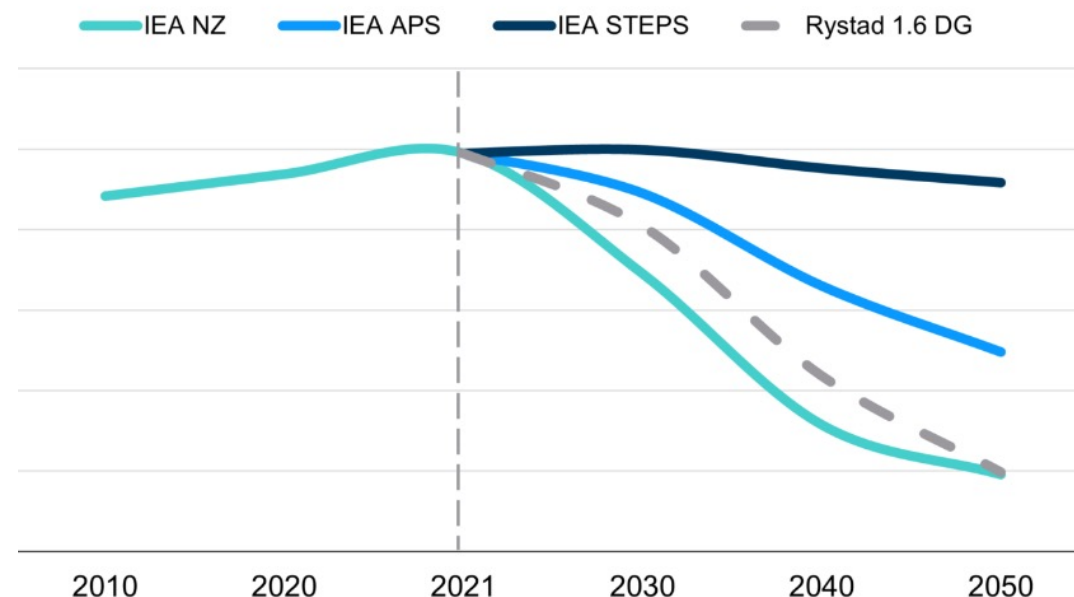
Oil price volatility – look back



The energy transition – look ahead

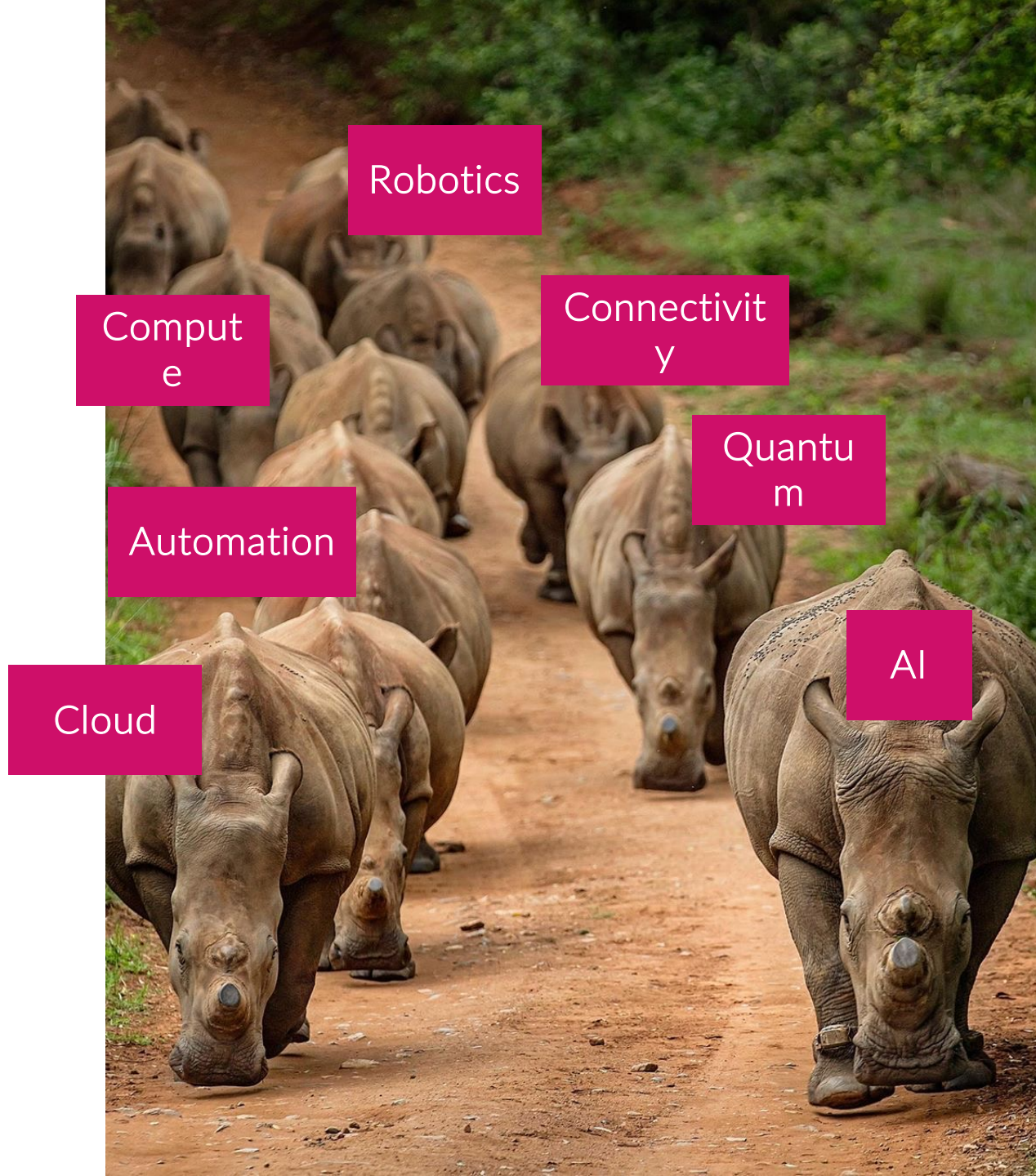
fuel demand across IEA's scenarios

demand has peaked; the question is the length of the plateau



WEO 2022, Rystad Energy.
Net Zero by 2050, APS is Announced Policies and STEPS is Stated Policies





Robotics

Computer

Connectivity

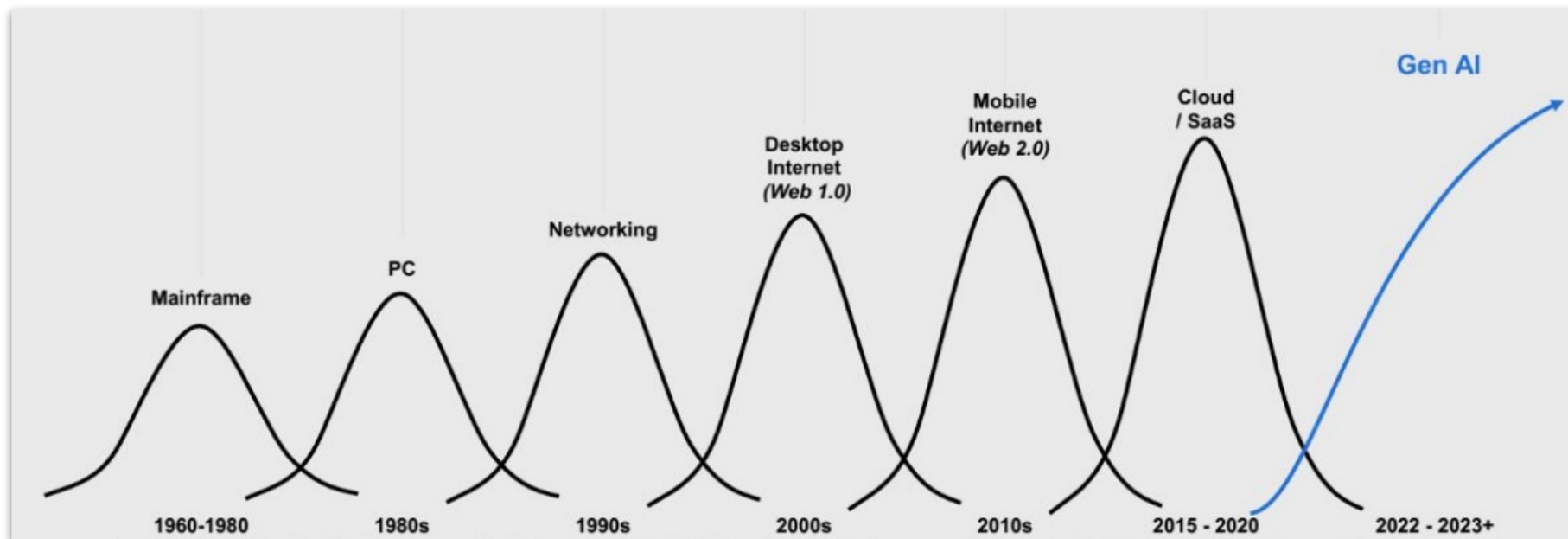
Quantum

Automation

AI

Cloud

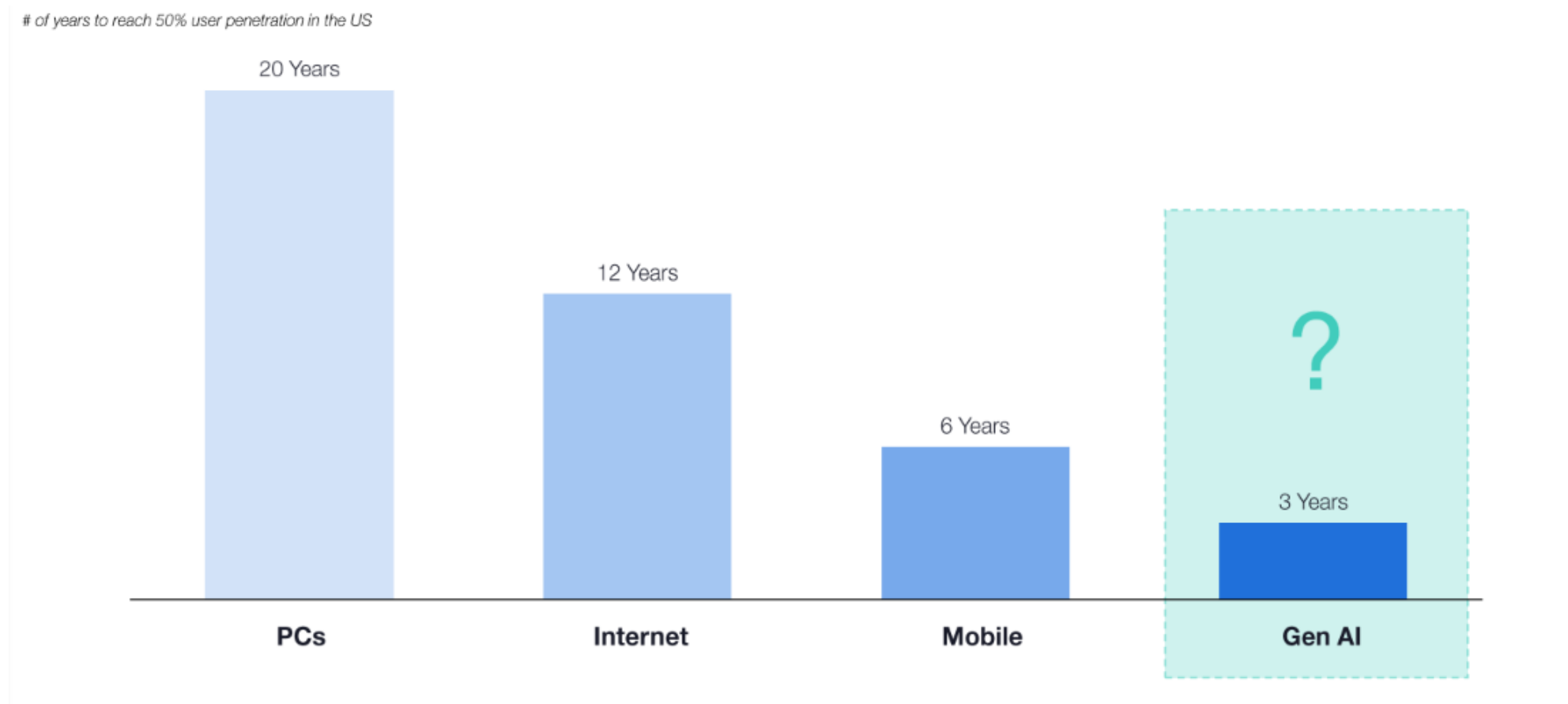
We are experiencing a new platform shift



Historically, each platform shift moves faster and with greater magnitude than the last

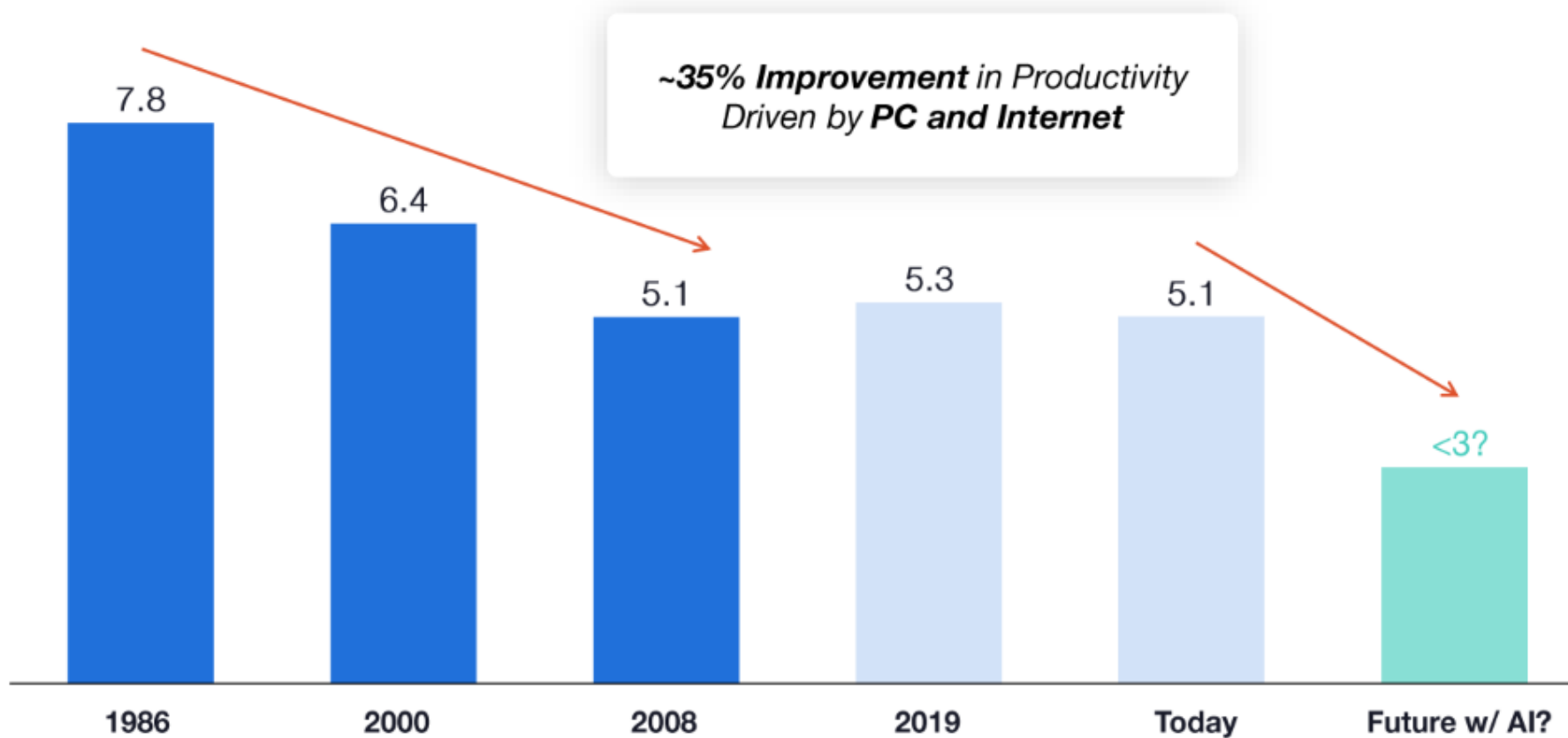
Each technology wave sweeps up users faster than before

Number of years to reach 50% user penetration in US



And drives major productivity gains...

Number of employees / 1m USD revenue (inflation adjusted S&P 500 companies)



The pace of development is tremendous

Please navigate to a new Chrome window, navigate to claude.ai, and once loaded, ask Claude to create a personal website with a 90s style theme.

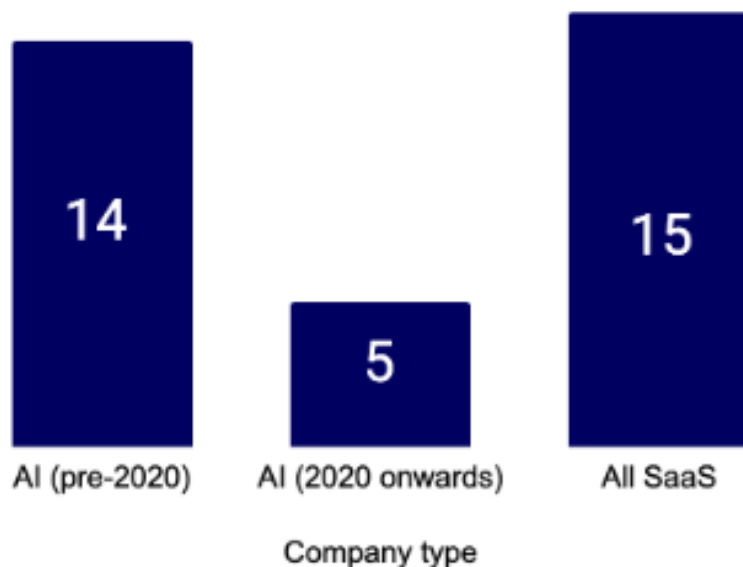
Send

And the transition pace from consumer->enterprise is unprecedented

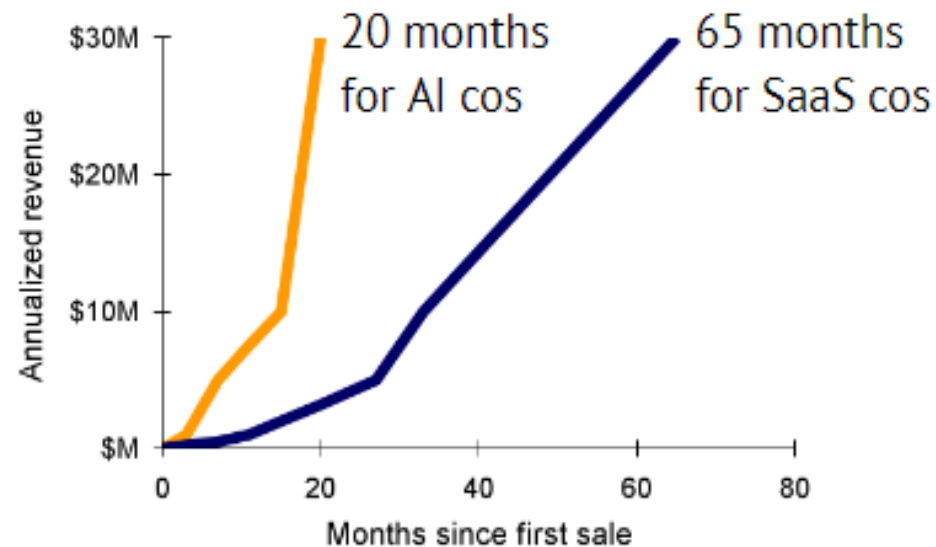
Model	OpenAI Release Date	Azure Release Date	Days to Azure Availability
GPT-3.5	March 15, 2022	March 22, 2022	7 days
GPT-4	March 14, 2023	March 21, 2023	7 days
GPT-4o	September 3, 2024	September 10, 2024	7 days
OpenAI o1	September 12, 2024	October 1, 2024	19 days

It's not just hype

Months to \$1M revenue

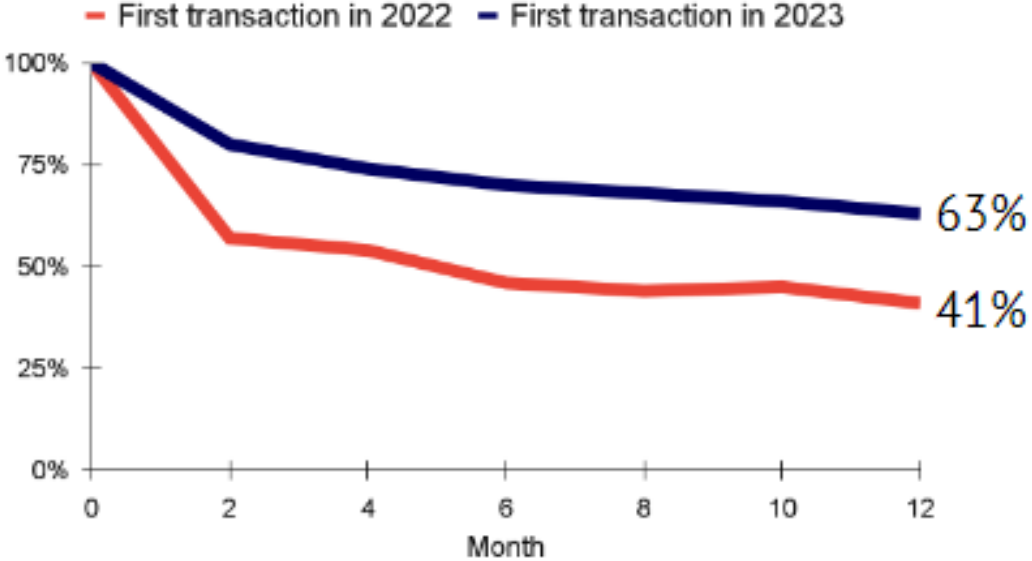


Months to scale to \$30M+

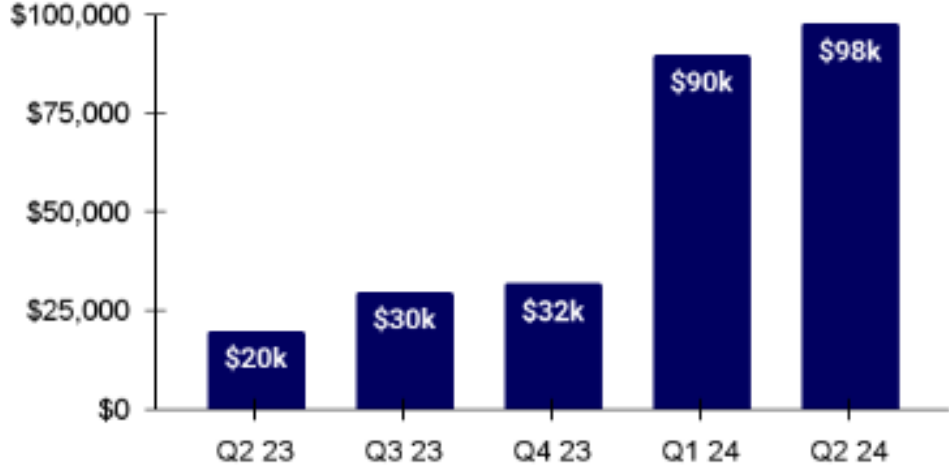


stateof.ai 2024

User retention over time



AI product billing by quarter



stateof.ai 2024



What is Generative AI (GenAI)?

A **generative model** is a joint probability distribution $p(\mathbf{x})$, for $\mathbf{x} \in \mathcal{X}$. In some cases, the model may be conditioned on inputs or covariates $\mathbf{c} \in \mathcal{C}$, which gives rise to a **conditional generative model** of the form $p(\mathbf{x}|\mathbf{c})$.

For the maths nerds



For the less sophisticated ;)

- GenAI is a subset of artificial intelligence that focuses on creating new content or information. This content can be text, video, code, images etc.
- GenAI uses deep learning – a type of machine learning that simulates the learning & decision making patterns of the human brain
- GenAI is used in a wide range of industries, including music, finance, industry, art, and writing.
- GenAI has the potential to revolutionize the way we work by enabling machines to take on more creative tasks.

Considerations

Enterprise Deployment

- Data privacy and security
- Integration with legacy systems
- Ethical AI
- Workforce Disruption
- Regulatory frameworks

There are challenges – but we must move through them.
Mindset change from “Yes, but...” to “Yes if...”

“I am not afraid of storms for I am learning how to sail my ship”

Louisa May Alcott



GenAI in Aker BP

- **EXPRES**
 - Exploration Robot – Provides suite of AI/ML tools to interpret subsurface data types

- **EXPRES**
 - Wells – AI/ML and other data science algorithms to automate well interpretation for all assets

- **Supply Chain**
 - Automated extracting information from PDF documents together with Cognite

- **Corporate**
 - Microsoft Copilot 365

- **P&S**
 - Root Cause Analysis using GenAI DIGE together with Cognite

- **PRO**
 - “Mimir - Well of Wisdom” – PRO Learnings Database and Conversational AI System



You don't need to be an AI expert to be a leader in AI...

...but if you want to be a leader in the future you need to embrace this technology

Attributes of Industrial AI Leadership (*ARC Technology Leadership Report, Jan 2024*)

- Invest in Industrial (Grade) Data Infrastructure
- Consider data quality & availability their greatest technical challenge
- Invest in building in-house AI expertise
- Govern data and AI with highly inclusive multi-disciplinary teams
- Prioritize AI use cases with fast time to value
- Invest in Industrial use cases across their whole value chain
- Use Governance Councils to ensure access to AI investment funding

For organizations and their employees, this looming shift has massive implications. In the future many of us will find that our professional success depends on our ability to elicit the best possible output from large language models (LLMs) like ChatGPT—and to learn and grow along with them. To excel in this new era of AI-human collaboration,

- HBR, Oct'24

10 predictions for the next 12 months

- ▶ 1. A \$10B+ investment from a sovereign state into a US large AI lab invokes national security review.
- ▶ 2. An app or website created solely by someone with no coding ability will go viral (e.g. App Store Top-100).
- ▶ 3. Frontier labs implement meaningful changes to data collection practices after cases begin reaching trial.
- ▶ 4. Early EU AI Act implementation ends up softer than anticipated after lawmakers worry they've overreached.
- ▶ 5. An open source alternative to OpenAI o1 surpasses it across a range of reasoning benchmarks.
- ▶ 6. Challengers fail to make any meaningful dent in NVIDIA's market position.
- ▶ 7. Levels of investment in humanoids will trail off, as companies struggle to achieve product-market fit.
- ▶ 8. Strong results from Apple's on-device research accelerates momentum around personal on-device AI.
- ▶ 9. A research paper generated by an AI Scientist is accepted at a major ML conference or workshop.
- ▶ 10. A video game based around interacting with GenAI-based elements will achieve break-out status.

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AI Strategy

Solving Problems of Scale

AI Operations

Technology

Partnerships

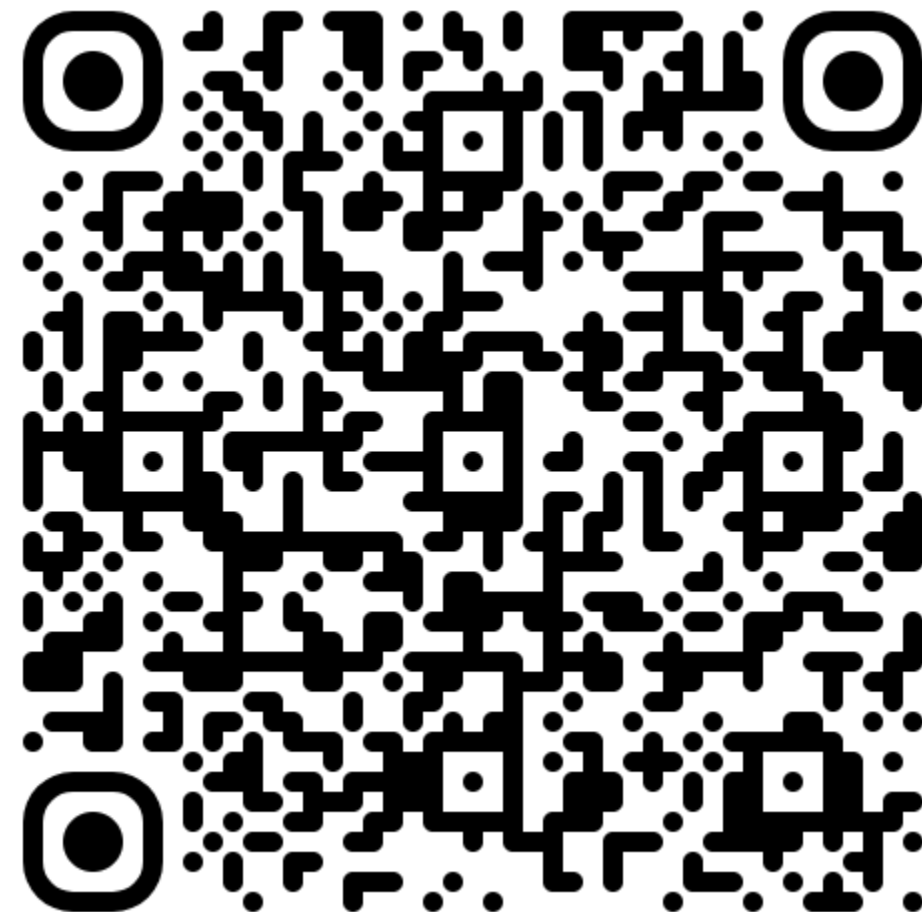
People

ResponsibleAI

Empowering Distributed Teams



Collective Solutions Required



Aker BP AI Strategy – In Brief



www.akerbp.com