

AI, Big Data and the Path Ahead for Productivity

Business Leader Perspective

Kent Cunningham

Chief Technology Officer

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AI is
transforming
the world.



Scaling laws

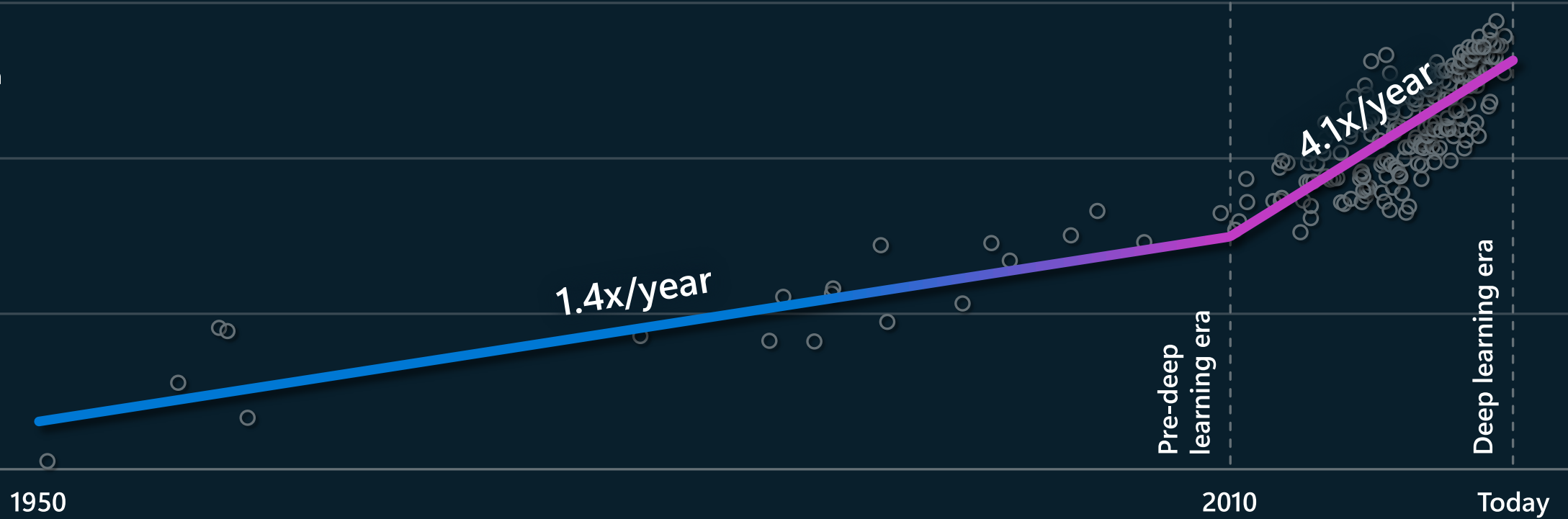
Training compute of notable machine learning systems over time (FLOP)

1e+26
(1 septillion
FLOPS)

1e+18
(1 quintillion
FLOPS)

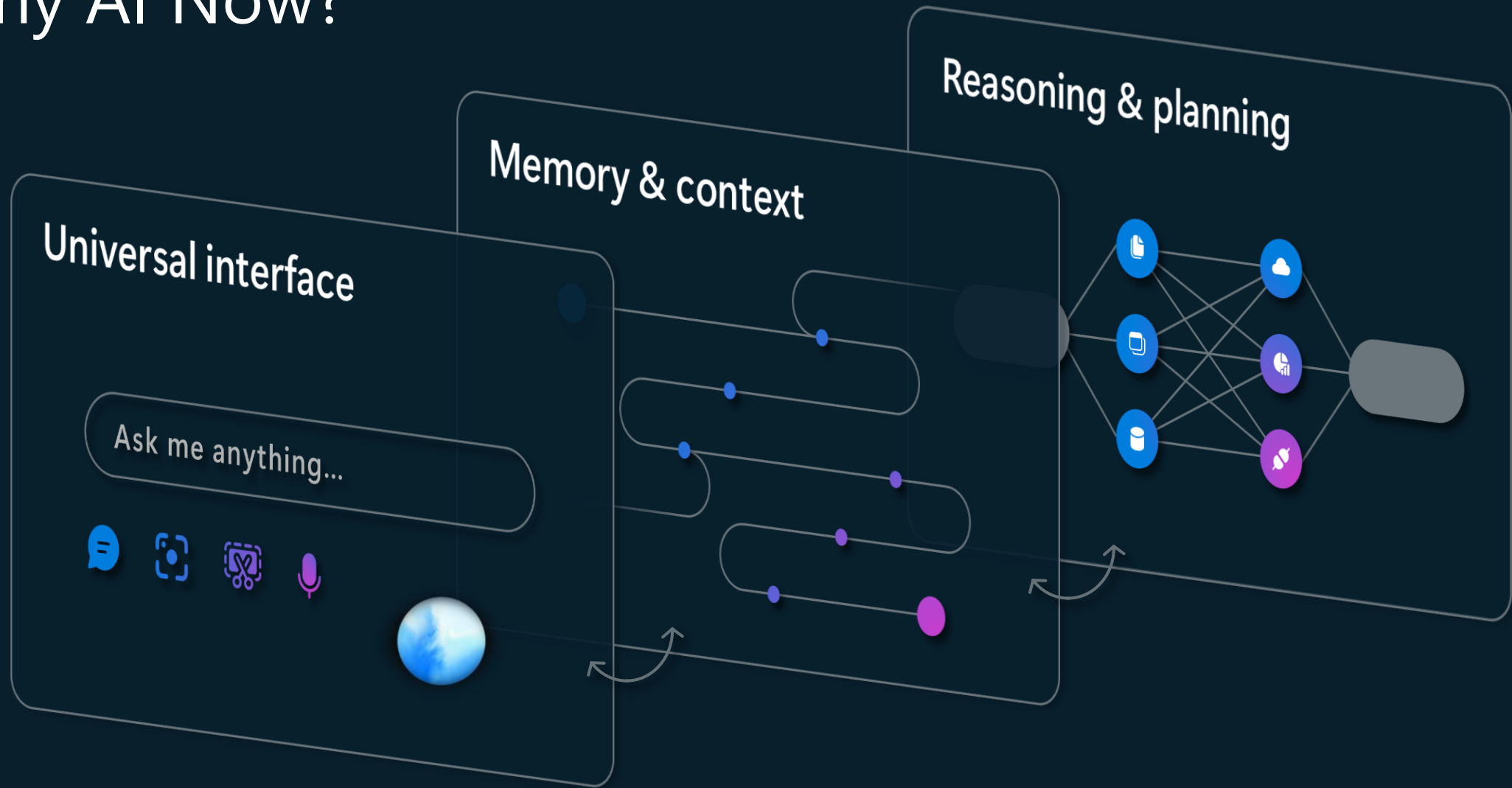
1e+10
(10 Billion
FLOPs)

1e+2
(100 FLOPS)



Source: Epoch, 'Parameter, Compute and Data Trends in Machine Learning'

Why AI Now?



Microsoft Azure AI Model breadth

Azure OpenAI Service



GPT-4o and (NEW) o1
Preview for complex reasoning

GPT-4-Turbo with Vision, GPT-4, GPT-3.5

Embeddings

DALL·E

Whisper, Text to speech

Phi models



Phi-3-mini

Phi-3-small

Phi-3-medium

Phi-3-vision

Meta



Llama-2-70b/70b-chat

Llama-2-13b/13b-chat

Llama-2-7b/7b-chat

Llama-3

CodeLlama

Mistral AI



Mistral Large

Mistral 7B

Mixtral 8x7B –
Mixture of Experts

Cohere



Cohere R+

Cohere R

Embed v3-Multilingual

Embed v3-English

Hugging Face



Falcon/TII

Stable Diffusion/Stability AI

Dolly/Databricks

CLIP/OpenAI

Databricks



Databricks/dbrx-base

Databricks/dbrx-instruct

NVIDIA



Nemotron-3-8B-4k

Nemotron-3-8B-Chat-SFT/RLHF/
SteerLM

Nemotron-3-8B-QA

Snowflake



Snowflake/arctic-base

Snowflake/arctic-instruct

Delivering AI across the Enterprise

Embedded into Existing
Applications

SaaS Enablement

- Extend value of existing tools
- Improved Data Driven Decision Making

 Microsoft 1st party
Copilots

Rapid time to solution

Managed service

- Rapid authoring environment
- Fully managed SaaS stack

 Copilot Studio

Control and customization

Code-first development

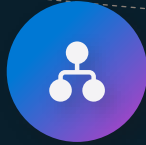
- Integrated into GitHub, Visual Studio
- Complete control of the stack

 Azure AI

Building an agentic world



Personal agents



Organizational agents



Business process agents



Cross-organizational agents

IT Helpdesk agent

How do I connect to the corporate network?



Device Refresh agent

Request a new laptop and send approvals via IT Service tool.



Lead Gen agent

The agent has identified and researched 15 new leads for you to review.



Simple



Advanced

Project Tracker agent

What is the status of phase 2 for project X and the remaining budget?



Budget Management agent

Review outstanding open purchase orders and begin financial planning.



Customer Support agent

The agent has identified new support issues and triaged to other agents.



Next-generation AI transforms common finance activities & responsibilities

- ❑ **Quickly find and validate data** across dissimilar systems and platforms
- ❑ Use **simple or even automated prompts** to **access financial insight**; including annotations and supporting data
- ❑ **Explore risks (loss/trends/FWA) and outliers to drive clarity** and easily collaborate with relevant stakeholders
- ❑ **Expedite financial processes** with intelligent automation, agents, and better insights to make decisions
- ❑ Turn raw data and analysis into **easily comprehended visualizations** and reports rapidly, and with natural language.

Considerations for your AI transformation



Which employees
and processes
should you
prioritize?



Where do you
have the data
and governance
in place?



How can AI help
you serve
customers and
partners better?



Are the right
processes in
place to deliver
secure and
responsible AI?

Building Responsible and Trustworthy AI

Principles

Fairness • Privacy & security • Transparency
Reliability & safety • Inclusiveness • Accountability

Corporate standard

Goals • Requirements • Practices

Implementation

Training • Tools • Testing

Oversight

Monitoring • Reporting • Auditing • Compliance



Marketing

68%

said Copilot helped them
jump-start the creative process



Knowledge workers

70%

of Copilot users said they
were more productive



Customer service

12%

faster at resolving
customer issues



Sales

90%

saved on average
to Copilot for

A man in a suit is sitting at a desk in a small, rustic wooden cabin. He is smiling and waving his right hand. On the desk is a laptop and a small lamp. A woman in an orange dress is in the foreground, partially visible, looking towards the man. The cabin has a wooden interior and a red exterior.

Infinite possibilities for enterprise.

Thank You

- *Kent Cunningham*
Microsoft CTO, US Civilian Gov