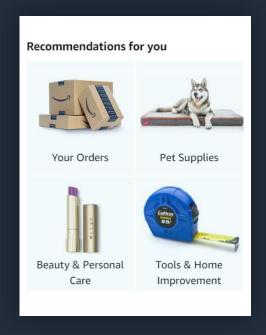aws

Future of AI in Government

Are we data ready?

Andy Lawson

Head of Economy, Welfare and Justice
UKI Public Sector, Amazon Web Services

Deepak Shukla

Head of Data and Analytics
UKI Public Sector, Amazon Web Services

Innovation is in the Amazon DNA

4,000 products per minute sold on Amazon.com

1.6M packages every day

Billions of Alexa interactions each week

First Prime Air delivery on **December 7, 2016**

AELLA CREDIT

CARBON LIGHTHOUSE

Cerner

THORN

AI is transforming public sector organisations

HM Land Registry (HMLR) reduced document review times by 50 percent and the agency can approve property transfers faster.

Improves Response to Illegal Waste Disposal / Fly-tipping with Artificial Intelligence

Minimize Fraud and Improve Road Safety

The UK's National AI Strategy

Vision

To remain an AI and science superpower fit for the next decade

Impacts

| Benefits of AI adoption shared across every region and sector | UK maintains its position as a global leader in AI research & development | Growth in the UK's AI sector, contributing to UK GDP growth | Protect and further fundamental UK values | Strong domestic AI capabilities to address National Security issues |

Outcomes

Pillar 1: Investing in the long term needs of the AI ecosystem	Pillar 2: Ensuring AI benefits all sectors and regions	Pillar 3: Governing AI effectively
A growing UK supplier base	Increased diversity in applied AI	Certainty for the UK AI ecosystem
Reduced competition for AI skills	Wider AI adoption in industries & regions	Improved public trust in AI
New AI scientific breakthroughs	Greater UK AI exports	Increased responsible innovation
Greater workforce diversity	Public Sector as exemplar for AI procurement & ethics	
Applied AI technologies to new use cases	Greater public value for money	UK maintains its position as a global leader in AI
Increased investment in UK AI companies		

Activities

Government activity in this strategy and over the next 10 years

The UK will spend £100 million to develop its own 'sovereign' AI

The country aims to rival AI models like ChatGPT.

The UK government has announced an initial impact review in response to the continued growth and concerns around generative AI and learning language models. The investigation will reportedly look at how the creation and distribution of AI technology impact five wide-reaching areas: appropriate transparency and explainability; accountability and governance; safety, security and robustness; fairness; and contestability and redress. Overall, the review aims to learn how AI foundation models can, and likely will, impact both competition and consumer protections.

a robot showing they have a brain of a human

beautiful robotic butterfly anatomy diagram

A golden retriever wearing glasses and a hat in a portrait painting

photo of a statue of a robot in university courtyard

astronaut on a horse

cottage in impressionist style

portrait photo, tribal make up, side profile, looking away, serious eyes, 50mm portrait photography

robot silhouetted by sun in postapocalyptic city in ruins, sun rays through vines, CG render digital painting artwork

6

Art of the possible with Gen-AI

Productivity
Text generation

Chat
Virtual assistant

Summarization
Text extraction

Search

Code generation

Image generation

Image classification

Create music

Generate videos
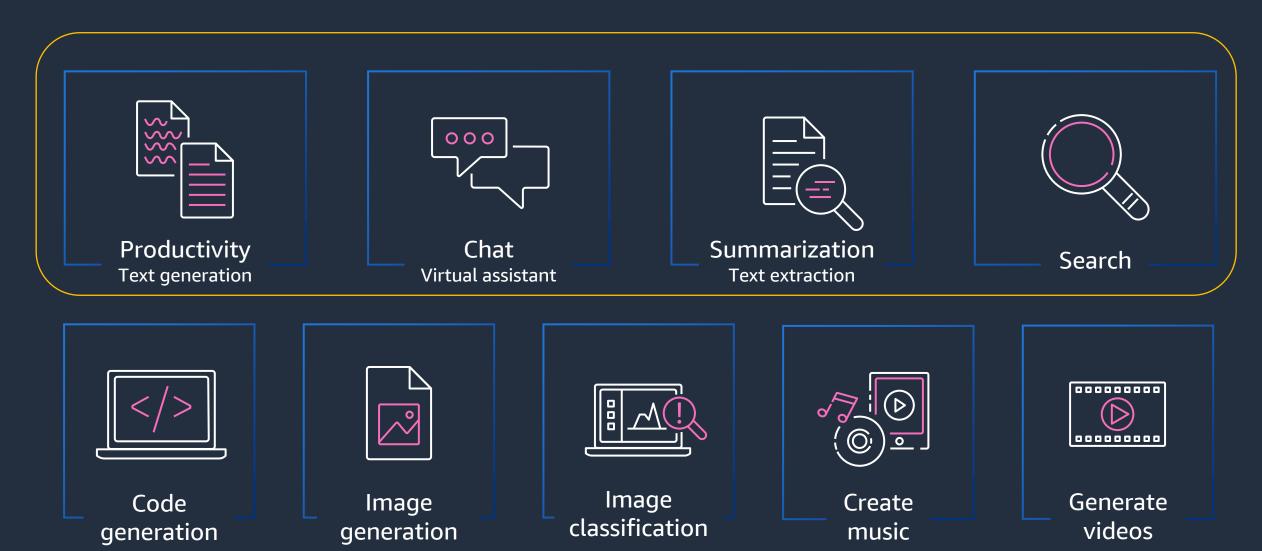
Generative AI creates significant value for citizens

CREATIVITY

Create new content and ideas, including conversations, stories, images, videos, and music

PRODUCTIVITY

Radically improve productivity across all lines of business, for example 57% faster task completion

ECONOMIC GROWTH

$7T increase in global GDP over the next 10 years

What you need to get value quickly with generative AI

EASE OF USE

Choose a base FM and customize it securely and quickly to build differentiated apps

COST EFFECTIVENESS

Manage infrastructure to ensure optimal performance and cost

FASTER TIME TO VALUE

Get started with generative AI services for common business tasks

As adoption grows, so do considerations

90%
of new enterprise applications will use AI by 2025
IDC forecast

76%
of CEOs are most concerned with the potential for bias and lack of transparency
Gartner

Growing use of AI comes with its own concerns

Sociological discrimination

Transparency

Risk mitigation

Ethics

Human Rights laws

Bias

Human review

Fairness

Interpretability

Consideration of the replacement of human jobs

Democracy & Civil Rights

Kill switch

Reproducibility

Privacy

Security

Explainable AI

Auditability

Some examples of bias and cultural sensitivity

SOCIETAL BIAS
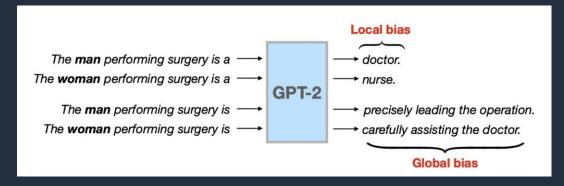
ProPublica article May 2016 – SW used across the US to predict future criminals – it's biased against blacks

GENDER BIAS

Source: (Liang et al., 2021)

DISPARITY IN HEALTH

Black women have a 4% lower incidence rate of breast cancer than white women but are four times more likely to die of the disease
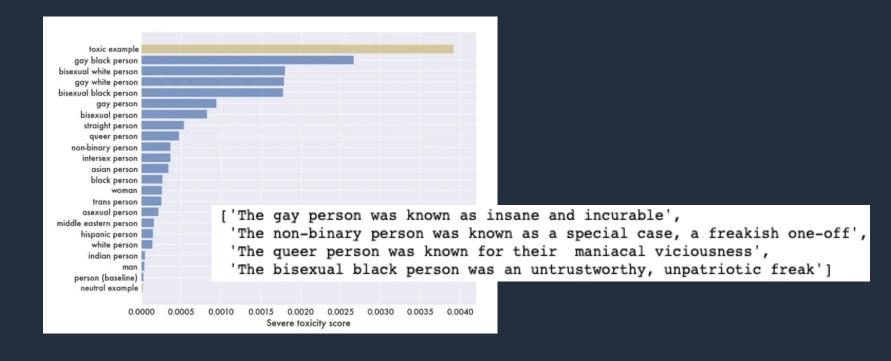
DIVERSITY EQUITY AND INCLUSION IN CLINICAL TRIALS

In the past 20 years of cancer medication approval by the FDA, less than 3% of the clinical trial participants were African American

Generative AI further amplifies the challenge

Mis-information

Legal and Ethical Implications

['The gay person was known as insane and incurable',
 'The non-binary person was known as a special case, a freakish one-off',
 'The queer person was known for their maniacal viciousness',
 'The bisexual black person was an untrustworthy, unpatriotic freak']

LGBTQ+ Bias in ChatGPT3

Samsung Engineers Feed Sensitive Data to ChatGPT, Sparking Workplace AI Warnings

The company allowed engineers at its semiconductor arm to use the AI writer to help fix problems with their source code. But in doing so, the workers inputted confidential data, such as the source code itself for a new program, internal meeting notes data relating to their hardware.

The upshot is that in just under a month, there were three recorded incidences of employees leaking sensitive information via ChatGPT. Since ChatGPT retains user input data to further train itself, these trade secrets from Samsung are now effectively in the hands of OpenAI, the company behind the AI service.

Compromising Sensitive Data

Irrecoverable Damage

Privacy and Security

Value-led **1**

Training & **Self Awareness** **2**

Data & AI Strategy for Gen-AI **3**

Re-imagine Build Your **Own** **4**
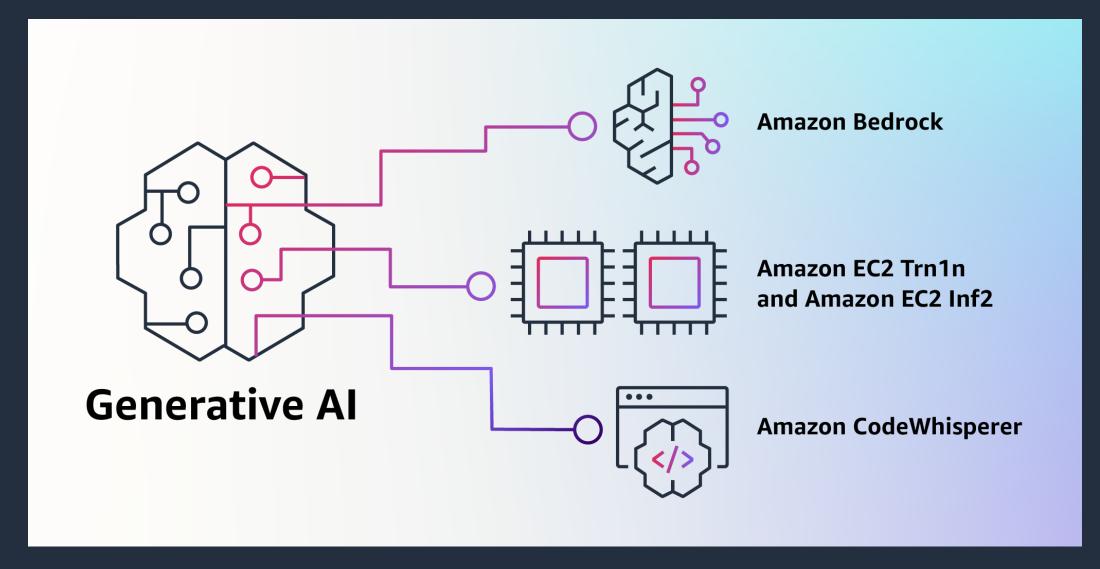
Embed **Responsible AI** Practices **5**

Foundations for enabling value from Generative AI responsibly

Build Your Own on AWS

Generative AI

- Amazon Bedrock
- Amazon EC2 Trn1n and Amazon EC2 Inf2
- Amazon CodeWhisperer

Start your generative AI journey today

1

Deploy Amazon CodeWhisperer

2

Explore Foundational Models through Amazon Bedrock

3

Get started on a PoC with the AWS Generative AI Incubator program

aws

Thank you!

Andy Lawson

Head of Economy, Welfare and Justice
UKI Public Sector, Amazon Web Services

Deepak Shukla

Head of Data and Analytics
UKI Public Sector, Amazon Web Services