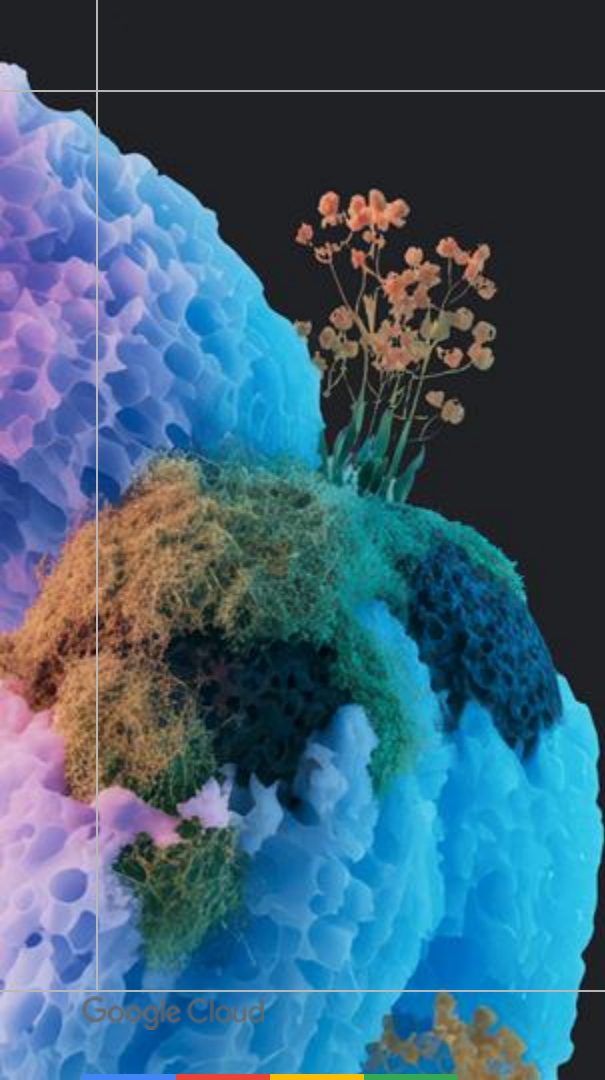# AI Transformation:
The CIO Playbook

Strategic imperatives for transitioning towards an AI Future

Andy MacInnes
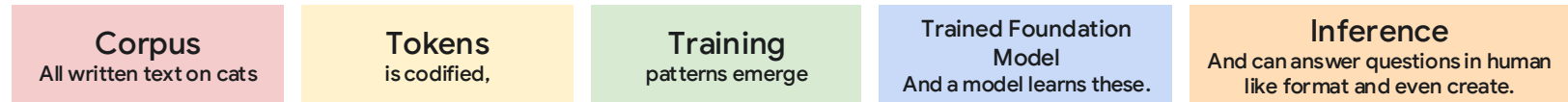Director, Retail Engineering, EMEA

Google Cloud

Google Cloud

Part 1

The Rise of the
AI Native

The Basics of Generative AI

"Cats are very playful"

Prompt Tuning , Fine Tuning Embeddings

Search

Most playful pets → Cats Dogs Ferrets

Conversation

What toys should i buy for my cat? → Cats love to play with yarn

Content Generation

"Create a picture of a cat"

Corpus	Tokens	Training	Trained Foundation Model	Inference
All written text on cats	is codified,	patterns emerge	And a model learns these.	And can answer questions in human like format and even create.

Multimodality

The ability to reason
across different types
of input

Images   Text   Sound   Video

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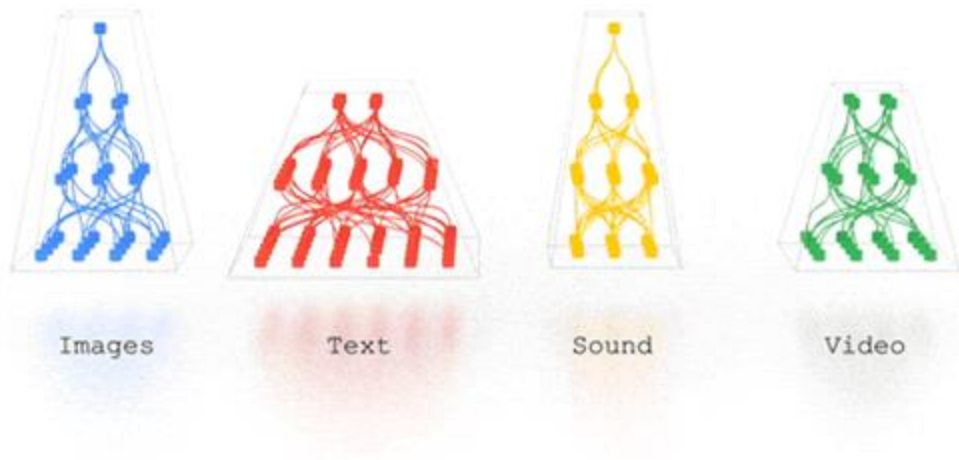
History: Digital Natives, Digital Disruptors

2000

Digital Natives
Agile, Product and Cloud

2015

Digital Parity
Many Traditional enterprises didn't survive

Digital Natives
Powered by IT and modern working practices

2012

Digital Transformation Begins
Changed IT processes, governance, finance

2022

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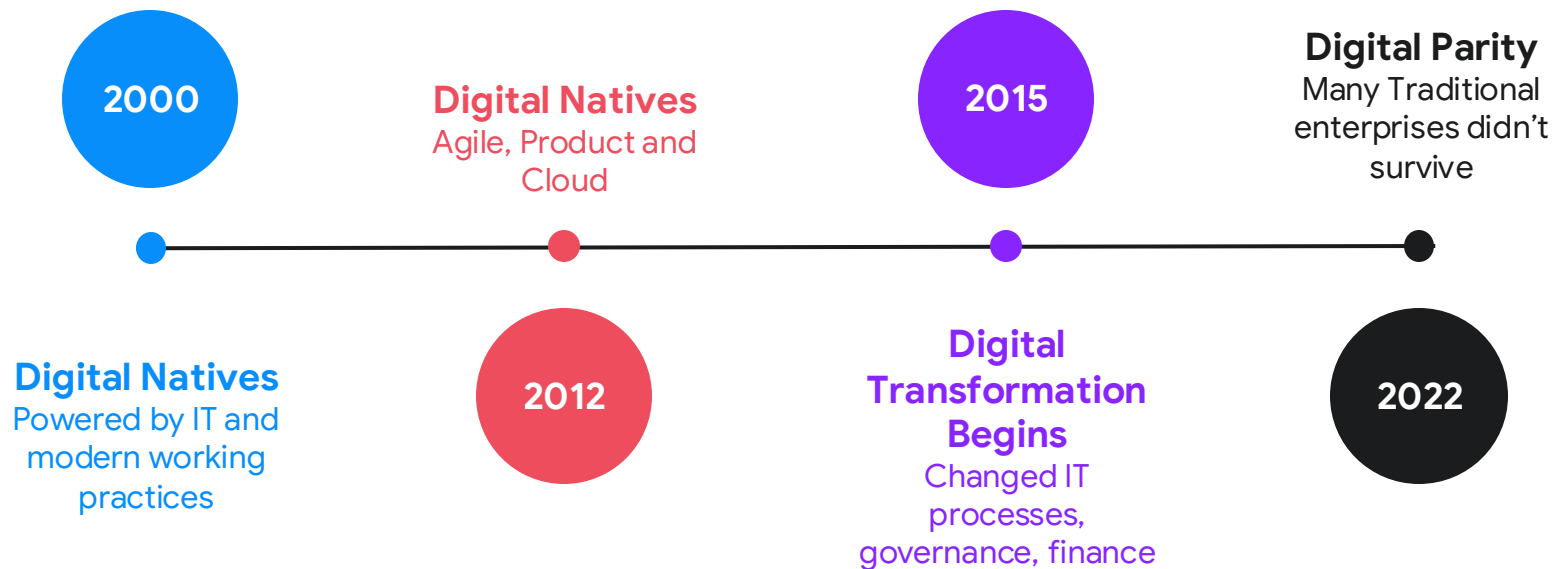
AI Transformation will be more profound with a New Mindset, New Challenges

Digital Transformation
- Digitised working practices
- Affected IT teams the most
- Modernised customer facing technology
- Speed to market > data quality
- Changed governance and finances
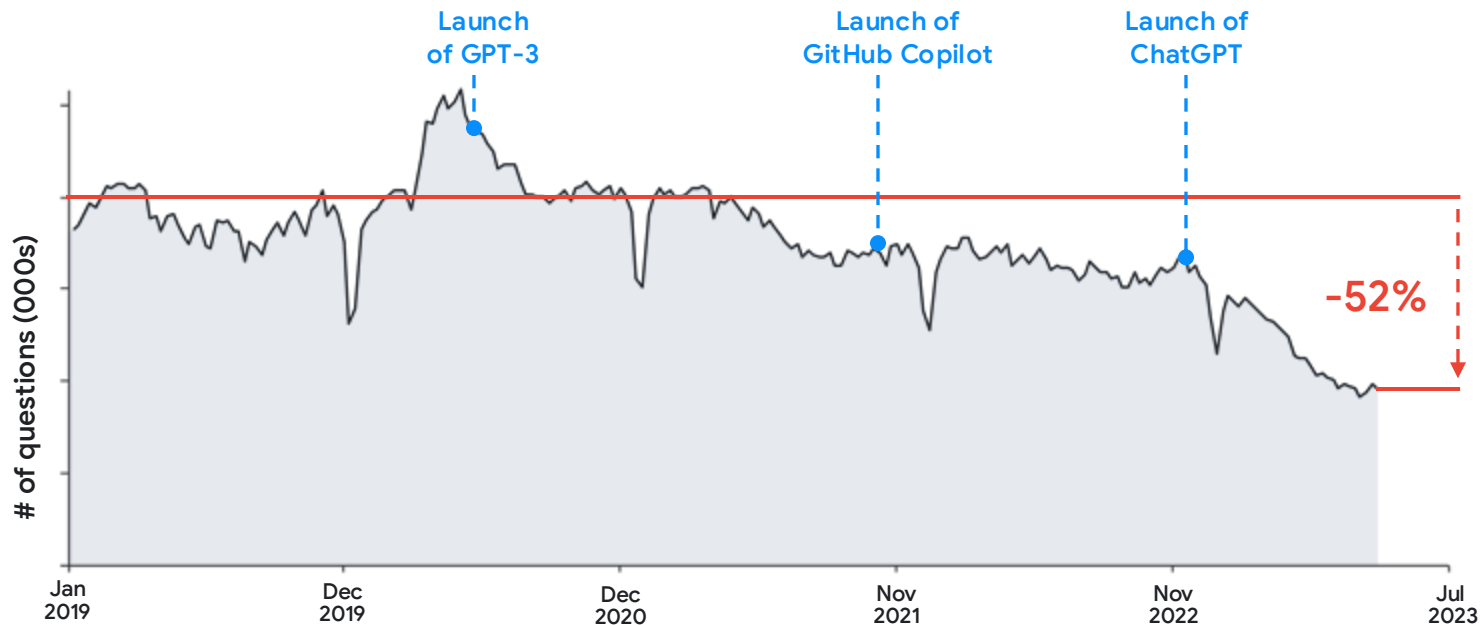
Data Transformation
- Initiatives to Democratise Data or become "data led"
- Data used to help decision making or to show past performance
- Early adoption of AI
- Especially valuable with customer and product data

A.I. Transformation
- Affects everyone. Most roles become augmented
- Data quality at the heart of everything
- Radical Self Service
- Organisational structures challenged
- Initiatives to Democratise Development
- Full adoption of AI
- All business data valuable
- Business choose new propositions on ability to gather data

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GenAI is already disrupting traditional software development ways-of-working

Stack overflow weekly average of # questions posted (in thousands)

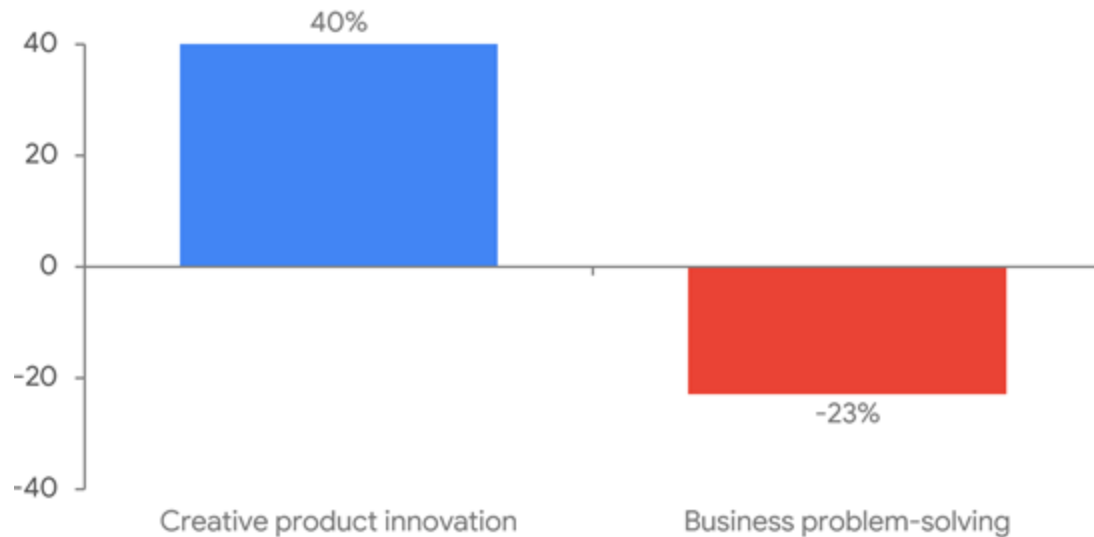

Launch of GPT-3

Launch of GitHub Copilot

Launch of ChatGPT

-52%

# of questions (000s)

Jan 2019   Dec 2019   Dec 2020   Nov 2021   Nov 2022   Jul 2023

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Disclaimer: Not monocausal; Source: Stackoverflow

Gen AI can both help or hurt performance, depending on the type of task

① ✖️

Gen AI is A Double - Edged Sword

Difference in individual performance compared to control group (%)

40% — Creative product innovation

−23% — Business problem-solving

Source: Human-Generative AI Collaboration Experiment (May-June 2023); BCG Analysis

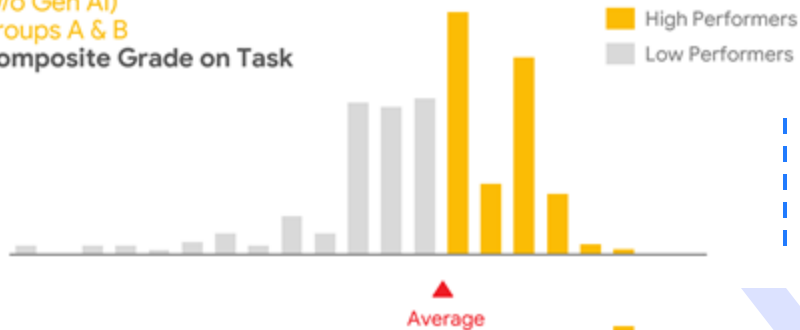Google — Confidential & Proprietary

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On tasks that it excels at, Gen AI is a great leveler of talent

2 👥⁺

Humans as complementors to Gen AI

Baseline Task
(w/o Gen AI)
Groups A & B
Composite Grade on Task

- 🟧 High Performers
- ⬜ Low Performers

Average

Experimental Task
(with Gen AI)
Groups A & B
Composite Grade on Task

Average

Gen AI collapses the distribution
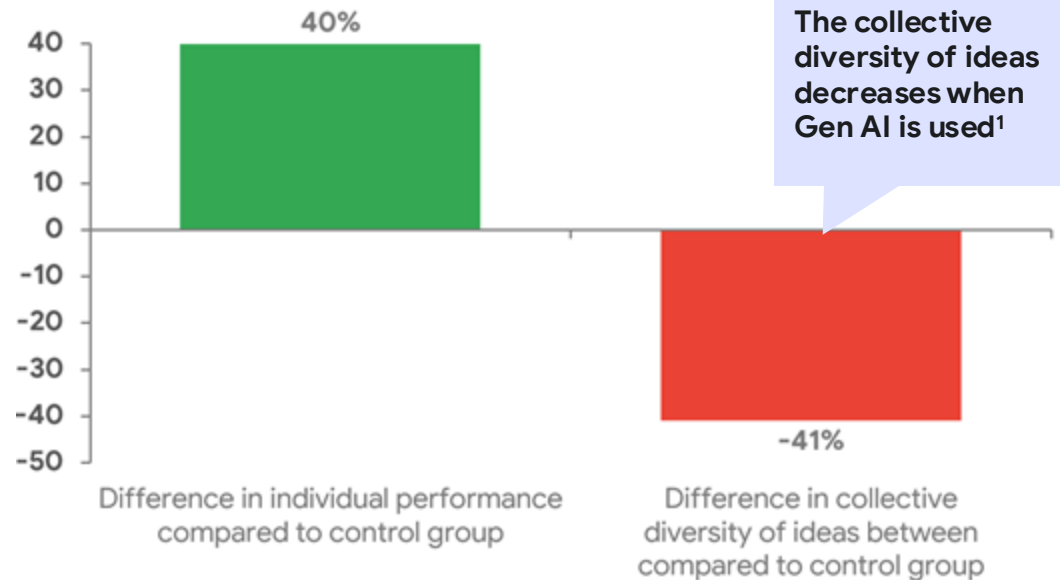
High & low performers converge

Source: Human-Generative AI Collaboration Experiment (May-June 2023); BCG Analysis

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Even when it boosts individual performance, Generative AI can hurt collective creativity

3 ⚠

Creativity and Innovation Traps

40%

The collective diversity of ideas decreases when Gen AI is used[1]

−41%

Difference in individual performance compared to control group

Difference in collective diversity of ideas between compared to control group

Source: Human-Generative AI Collaboration Experiment (May-June 2023); BCG Analysis
1: Diversity of ideas was measured using TF-IDF and cosine similarity methodologies

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Google — Confidential & Proprietary

Part 3

An AI-first Company

Sundar Pichai
2016

After ten minutes...

After two hours...

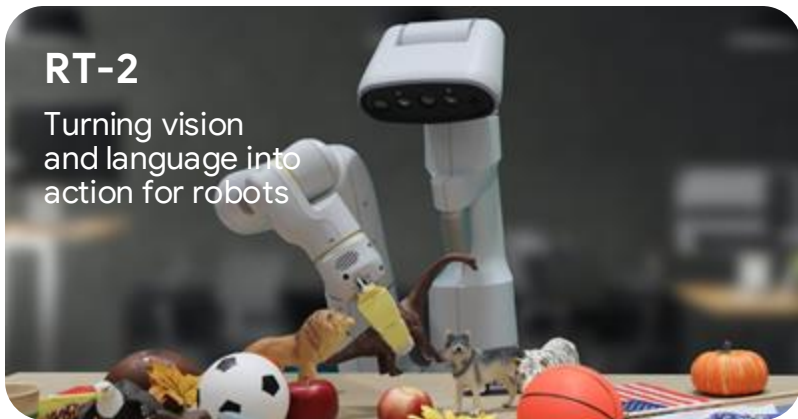After six hours…

2016
AlphaGo

2017
AlphaZero

2019
StarCraft

2020
Muzero

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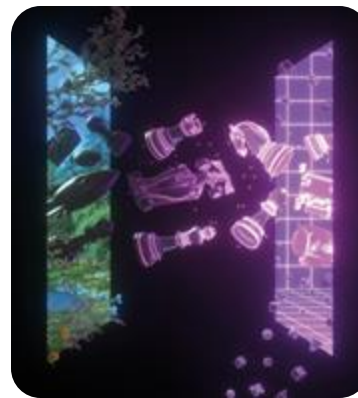
RT-2

Turning vision and language into action for robots

SIMA

Navigating complex virtual 3D environments

AlphaGeometry

Solving Olympiad-level maths problems

GNoME

Discovering thousands of new materials

Google Cloud

Google's Differentiators

Google Cloud's unified AI stack

Google engineered end to end open environment
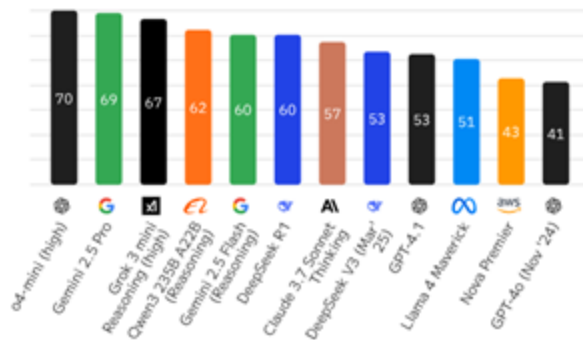

- Agents & Applications
- Vertex AI
- Research & Models
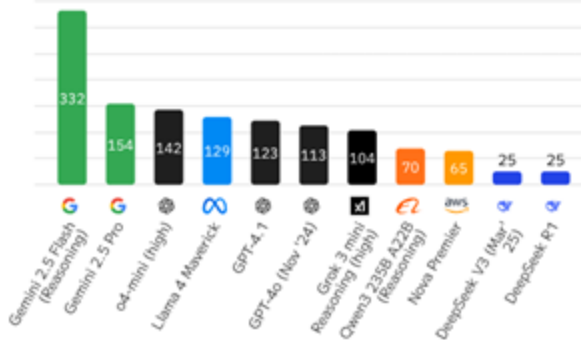- AI Hypercomputer

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Asymmetric Value

INTELLIGENCE
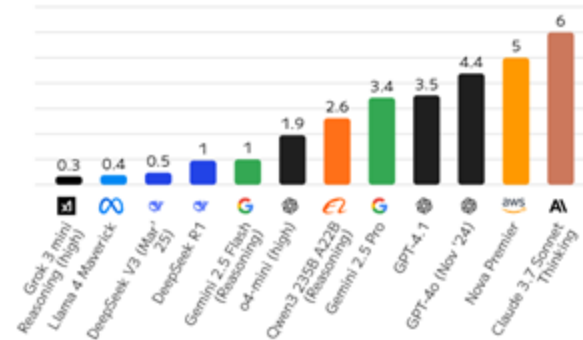Artificial Analysis Intelligence Index; Higher is better

SPEED
Output Tokens per Second; Higher is better

PRICE
USD per 1M Tokens; Lower is better

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Source: Artificial Analysis Rankings. Independent AI Leaderboard 19/5/2025

Part 4

Transformation Examples

Gemini for Google Workspace

Helps you write

Gemini works behind the scenes to help you write — whether it's refining existing work or helping you get started

Helps you create images

With Gemini, you can easily create images for presentations and meetings from a simple prompt

Helps you organize

Gemini is here to help you analyze and act on your data quickly

Helps you connect

Gemini helps you look and sound your best on video calls so you can focus on the conversation

Google Cloud

Trendspotting in Retail

Spot what is trending in a given region by extracting fashion trends from social media influencers' posts or fashion news articles

Addressed Pain Points

↗ Understand emerging trends and consumer insights to stay ahead of the curve with data-driven styling and merchandising.

↗ Significantly reducing the lead time to new design drafts (by 4-6 weeks or 90% as measured for a fashion retailer) involved in analyzing huge silos of data from social media, fashion news articles etc. and in creating draft styles.

Veo is being implemented by enterprise customers

Mondelēz International

"Our collaboration with Google Cloud has been instrumental in harnessing the power of generative AI, notably through Imagen 3, to revolutionize content production. This technology has enabled us to produce hundreds of thousands of customized assets, enhancing creative quality while significantly reducing both time to market and costs. With the introduction of Veo, Mondelez and its agency partners (Publicis, VCCP, The Martin Agency, WPP, Vayner and Accenture) are poised to expand these capabilities into video content, further streamlining production processes and setting new benchmarks in marketing."

Jon Halvorson,
SVP of Consumer Experience & Digital Commerce, Mondelez International

WPP

"At WPP, we believe in the transformative power of AI to enable our people to do their best work. We built WPP Open from the ground up and leverage Google Cloud and AI within it to help bring to life the creative vision of clients such as L'Oréal, resulting in the production of compelling content and making iteration and concepting easier than ever before. With Veo and Imagen, we are narrowing the gap between imagination and execution, enabling our people develop high-quality, photo-realistic, campaign-ready visuals in a matter of minutes."

Stephan Pretorius,
Chief Technology Officer, WPP.

agoda

At Agoda, we're committed to helping people see the world for less and make travel experiences more accessible. We are exploring the media generation capabilities of Google Cloud AI, using Imagen to create unique visuals of dream destinations in various styles. These images are then brought to life as videos through experiments with Veo's image-to-video technology. These technologies hold the potential to streamline our content creation process from days to hours. By continuing our testing, we aim to explore how this combination can enhance creative possibilities and personalized advertising efficiently. With these tools, we hope to engage customers meaningfully and inspire future adventures."
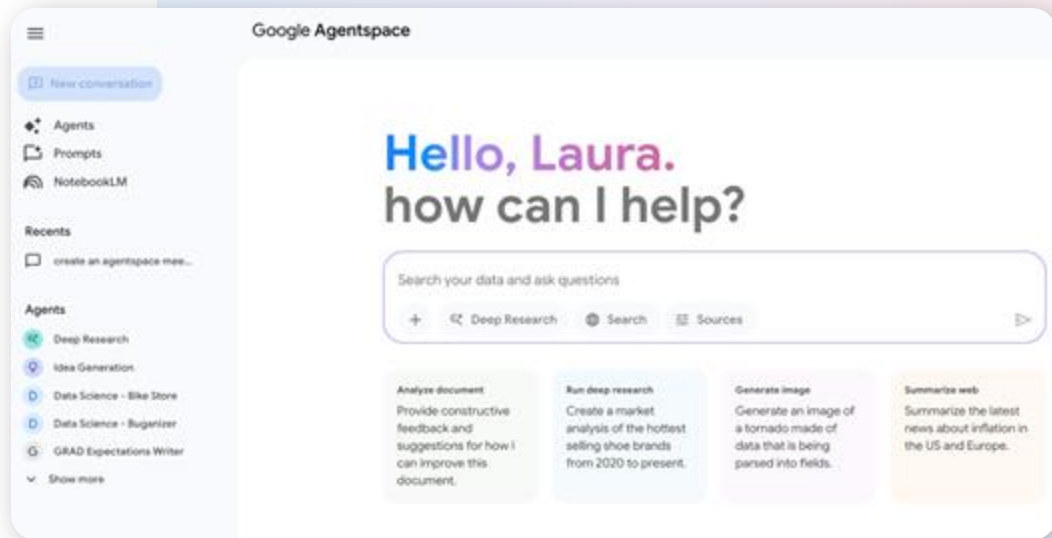
Matteo Frigerio,
Chief Marketing Officer, at Agoda.

Introducing Google Agentspace

The only hyperscale platform built to help enterprises **adopt AI agents at scale**

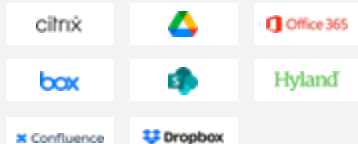# Fragmented technology systems have been a problem for decades

🔍 Where do I go for _____?

Analytics platforms

Google Analytics | +ableau | opentext
Power BI | IBM

Productivity and content services

citrix | Google Drive | Office 365
box | | Hyland
Confluence | Dropbox

CRM and customer experience

Adobe | Dynamics 365 | ORACLE
freshworks | HubSpot | salesforce

Communications

CISCO | zoom | slack
Google Meet | Teams | loom
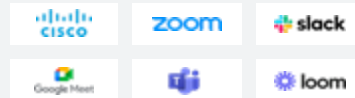
Project and portfolio management

Jira | asana | Notion
monday.com | upland | Trello
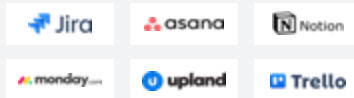
Supply chain management

Dynamics 365 | SAP | samsara
ORACLE

Human capital management

SAP | ORACLE | UKG
ADP | CERIDIAN | workday

Enterprise planning

SAP | Sage | ORACLE
IBM | servicenow | UKG
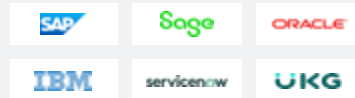
Agentspace redefines how work gets done with a **unified platform & interface**

Find	**Understand**	**Act**

Google-quality search across **text, image, and video** for deeper insights

Conversational AI to **reason and make sense** of complex information

Gemini & 3P agents to **take action** on repetitive tasks

100+ document repositories and data base systems *

Security infrastructure & compliance controls
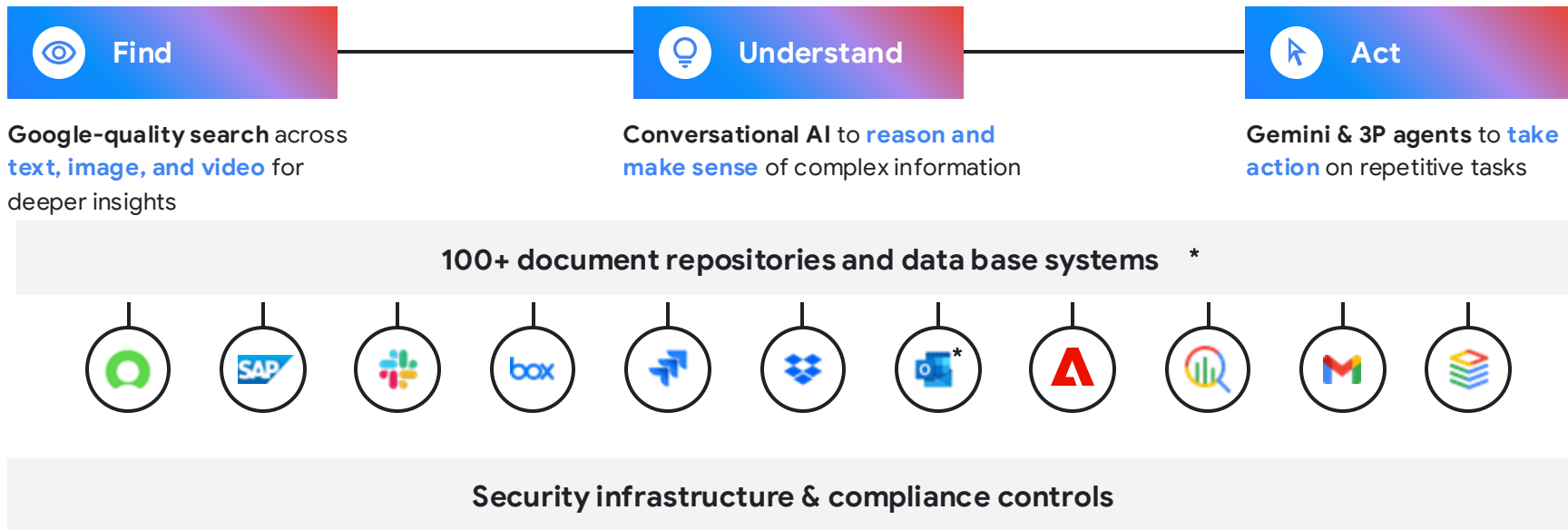
Find

Apply Google's industry-leading multi-modal search across your enterprise

➔ Blend understanding of text, images, websites, audio, video across your enterprise

➔ Google's proprietary Knowledge Graph technology enhances search accuracy & personalization

➔ Securely search information across 100+ applications and from the Chrome search bar

Google Cloud

Synthesize your enterprise data with generative business intelligence

➔ Powerful LLMs summarize, produce actionable information and extract insights from complex sources into engaging formats

   ➔ Combine structured and unstructured data for a complete, contextual view

   ➔ Search and chat with your sources grounded in your data

   ➔ Create audio overviews, briefing docs, and more

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Access, build & govern agents in a single view to streamline workflows

➔ Easily access the right agent for the task with Agent Gallery

➔ Build custom AI agents without code using Agent Designer

➔ Leverage the latest Google-built agents, like Deep Research to synthesize business data or Idea Generation to drive novel strategies across domains

➔ Govern and manage agents for your enterprise

Google Cloud

Agentspace is the hub for first and third party agents in the enterprise

1P   **Your enterprise agents** built by your developers with Vertex or other platforms

1P   **Your user-built agents** built by your employees using Agentspace no-code builders

3P   **Expert Google-built agents**

3P   **Google Cloud Marketplace agents** from various Google Cloud partners

Part 5

How to
# Start

Standing Out in A Sea of Sameness

There is a **strong correlation** (0.79) between a retailer's level of differentiation and its Pricing Power
- the ability to command a premium and achieve profitable growth

Generic GenAI models are very useful, but everyone has access to the same capability

Some use cases need no tuning, but for differentiating tasks it's critical

Choose the right model for cost, speed and quality

Bigger not always better

Generic Models

Your unique data

Differentiating Value

AI Platform
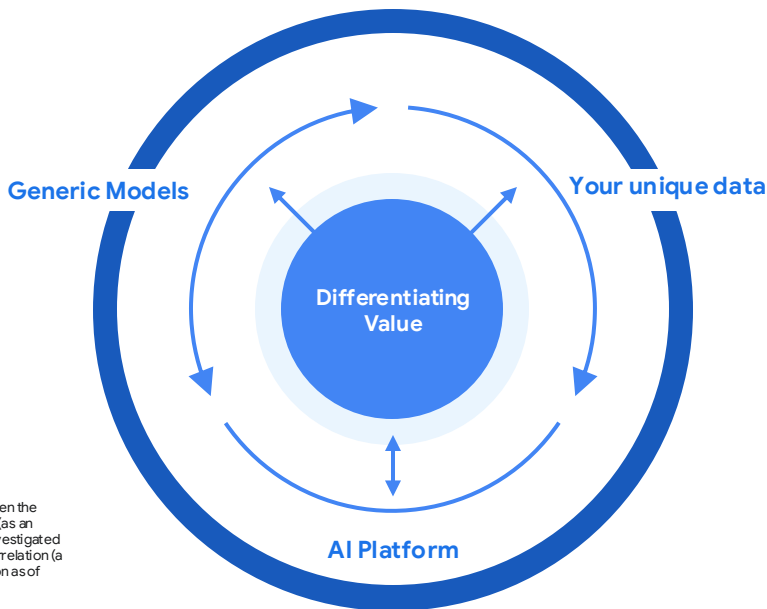
Data is the most valuable asset an organisation has

It can't be replicated by competition and gives huge advantage with existing customers and operations

Combining unique data with generic models creates differentiating outcomes that others can't copy

Source: Google EFS 2024/ *Shown is the correlation coefficient between the differentiation score by retailer vs. the pricing power score by retailer (as an indicator of long-term growth potential). Correlation level across all investigated retailers in Europe, whereby 1 means perfect correlation and 0 = no correlation (a moderate correlation is considered as of 0.3 and a very high correlation as of 0.7).

The Journey to Value

AI Augments Humans

Chatbots

Code Assistants

Image and Video Creation

Research

Productivity Tools

Humans in the Loop

Demand Forecasting

Customer Communications

Social Media Marketing

Promotions

Customer Support

Business Agents

Customer Retention

Assortment Planning

Buying

Inventory Management

Supplier Onboarding

Increasing value, complexity and risk

Google Cloud

No Regrets Next Steps

There are no established patterns on organisation adoption. There is no Spotify Model.

Data Platform

Manage data maturely: data governance, stewardship, definitions, ownership, consistency, and security are key.

Codification of business knowledge.

Business metrics

AI Platform

Centralised AI Platform

Centre of Excellence

AI Ops

Allows model switching

Use case repository

Partnerships

Skills Transformation

Drive knowledge and understanding of the value of AI

Encourage new mindset

Educate leadership on the benefits and risks

Allow teams to push boundaries

Collaboration from all stakeholders

End to End Workflows

Radical Self-Service

Think: "How does this process work in the age of AI"

Span departments and teams

Process AI champions

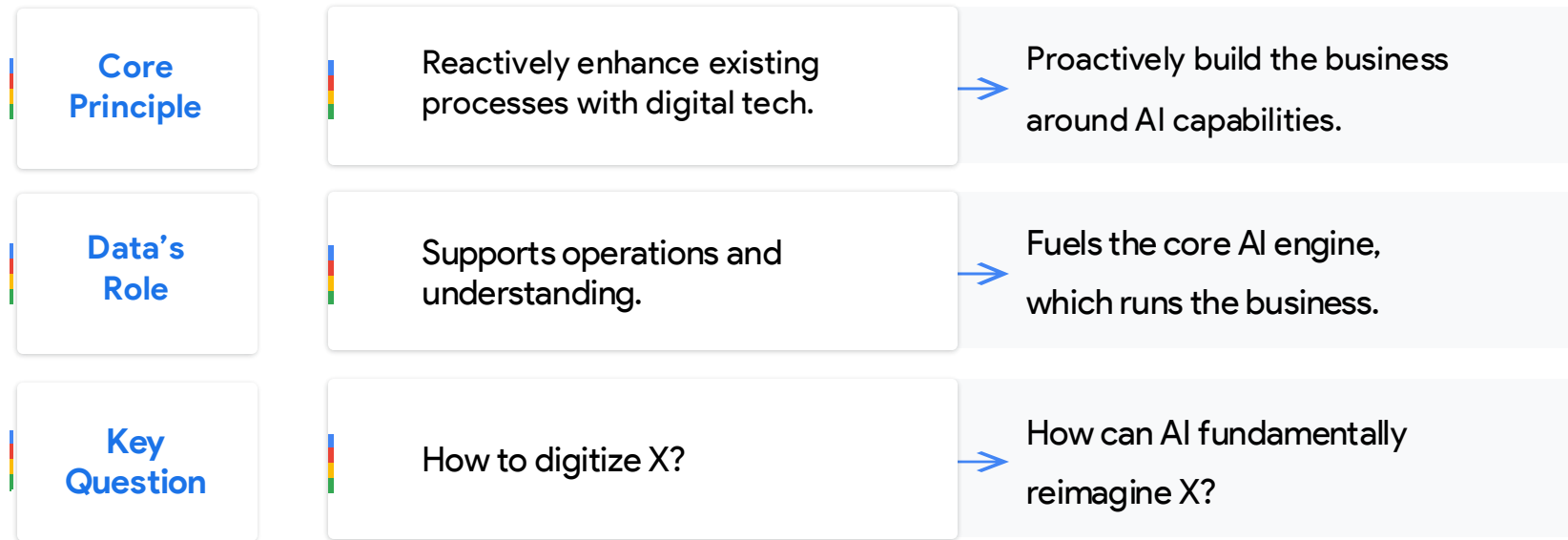## Programmatic Approach

It will not happen by osmosis

C-level led

Change Management

Responsible, ethical, legal framework

Measure progress with transformation KPIs

Mindset Shift: Digital Transformation vs AI Native

	Digital Transformation	AI Native
Core Principle	Reactively enhance existing processes with digital tech.	Proactively build the business around AI capabilities.
Data's Role	Supports operations and understanding.	Fuels the core AI engine, which runs the business.
Key Question	How to digitize X?	How can AI fundamentally reimagine X?

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Thank You