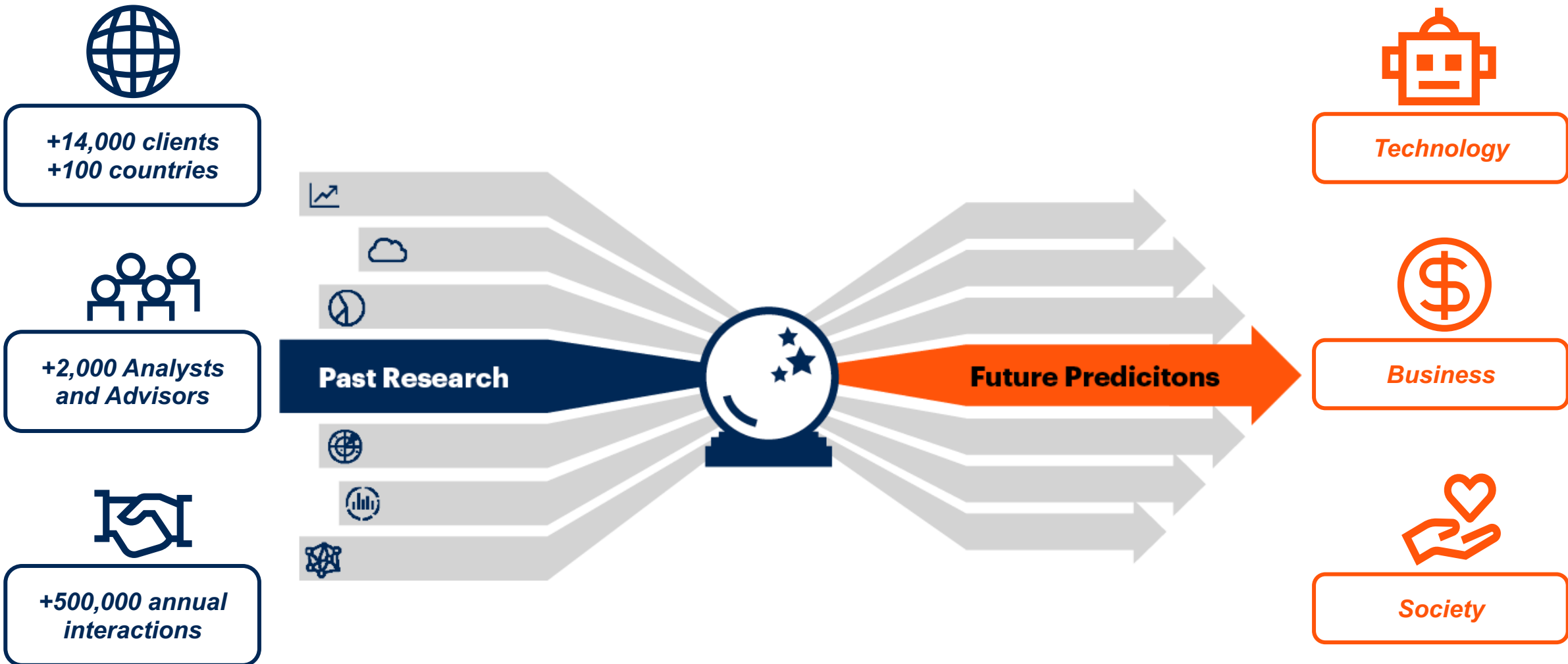# IA Generativa: Oportunidad para las Administraciones Públicas.

Jordi Escalé

Gartner EXP Programs Iberia

Gartner Predictions

+14,000 clients
+100 countries

+2,000 Analysts and Advisors

+500,000 annual interactions

Past Research

Future Predicitons

Technology

Business

Society

Gartner

Who is an important scientist?

Gartner

Agenda

01

Hello World:
AI & GenAI

02

GenAI Public
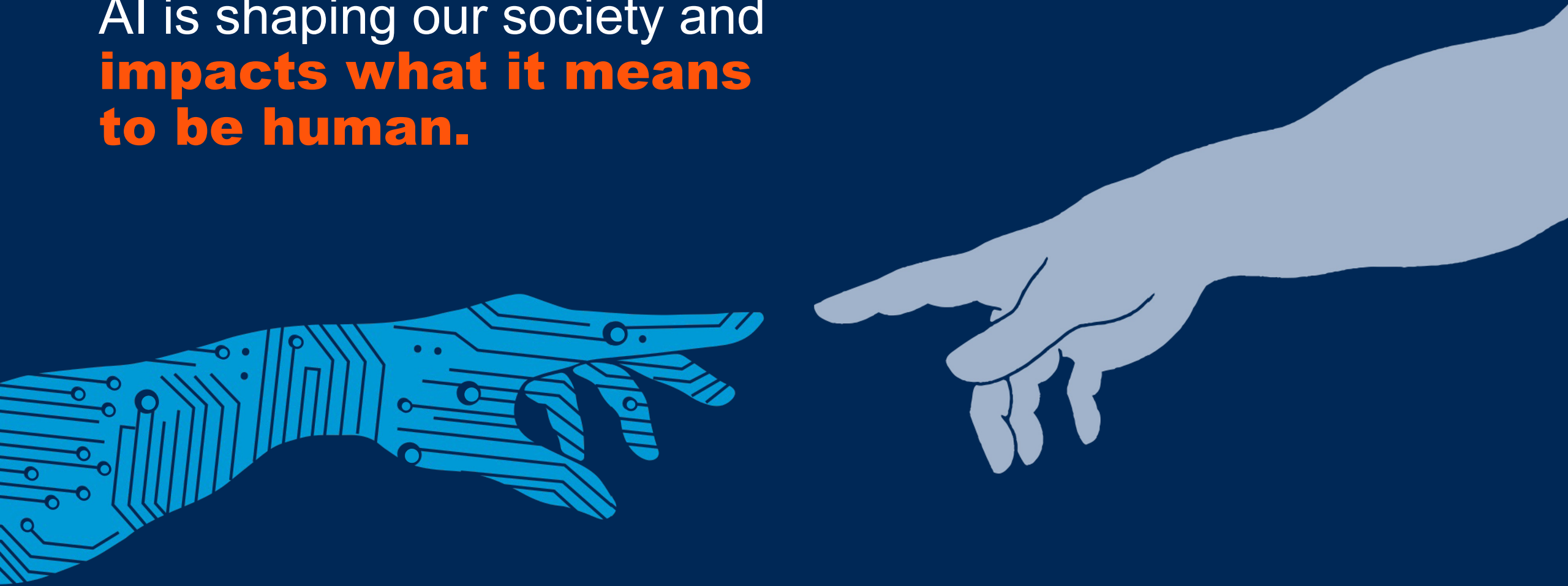Sector Ambition
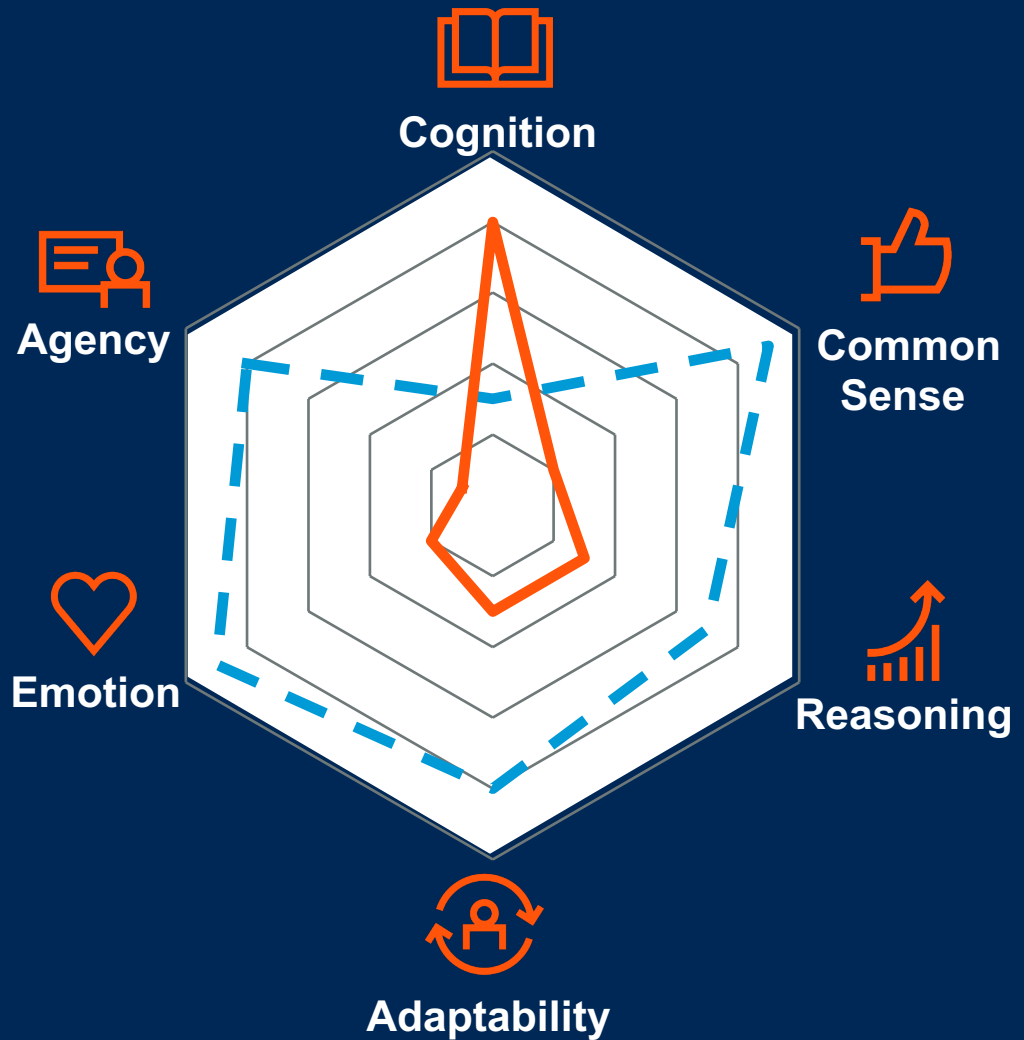& Use Cases

03

Implementation
Recommendations

Gartner
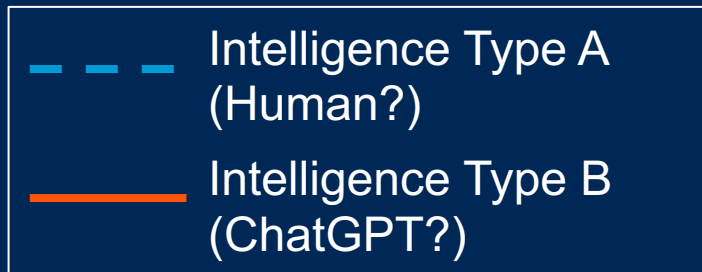
We should not treat AI as just a technology, or a business case. AI is shaping our society and **impacts what it means to be human.**

5

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Welcome to the age of AI natives

Towards Intelligence Assessments

Intelligence Type A (Human?)

Intelligence Type B (ChatGPT?)

Cognition

Common Sense

Reasoning

Adaptability

Emotion

Agency

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AI

Is the Tech That Will Most Significantly Impact Industry Over the Next 3 Years, including Governments

15% — 2021
18% — 2022
21% — 2023
56% — 2024

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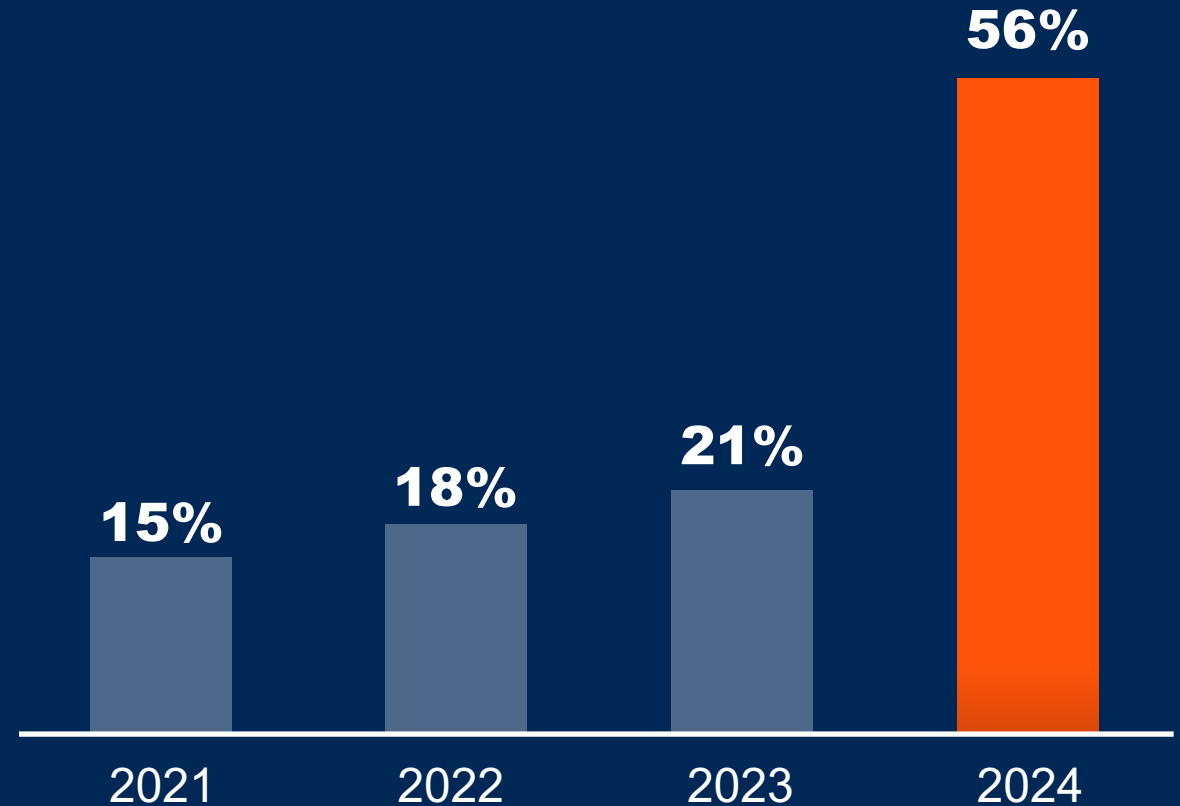
Top technologies for innovation

61%
AI

51%
Generative AI

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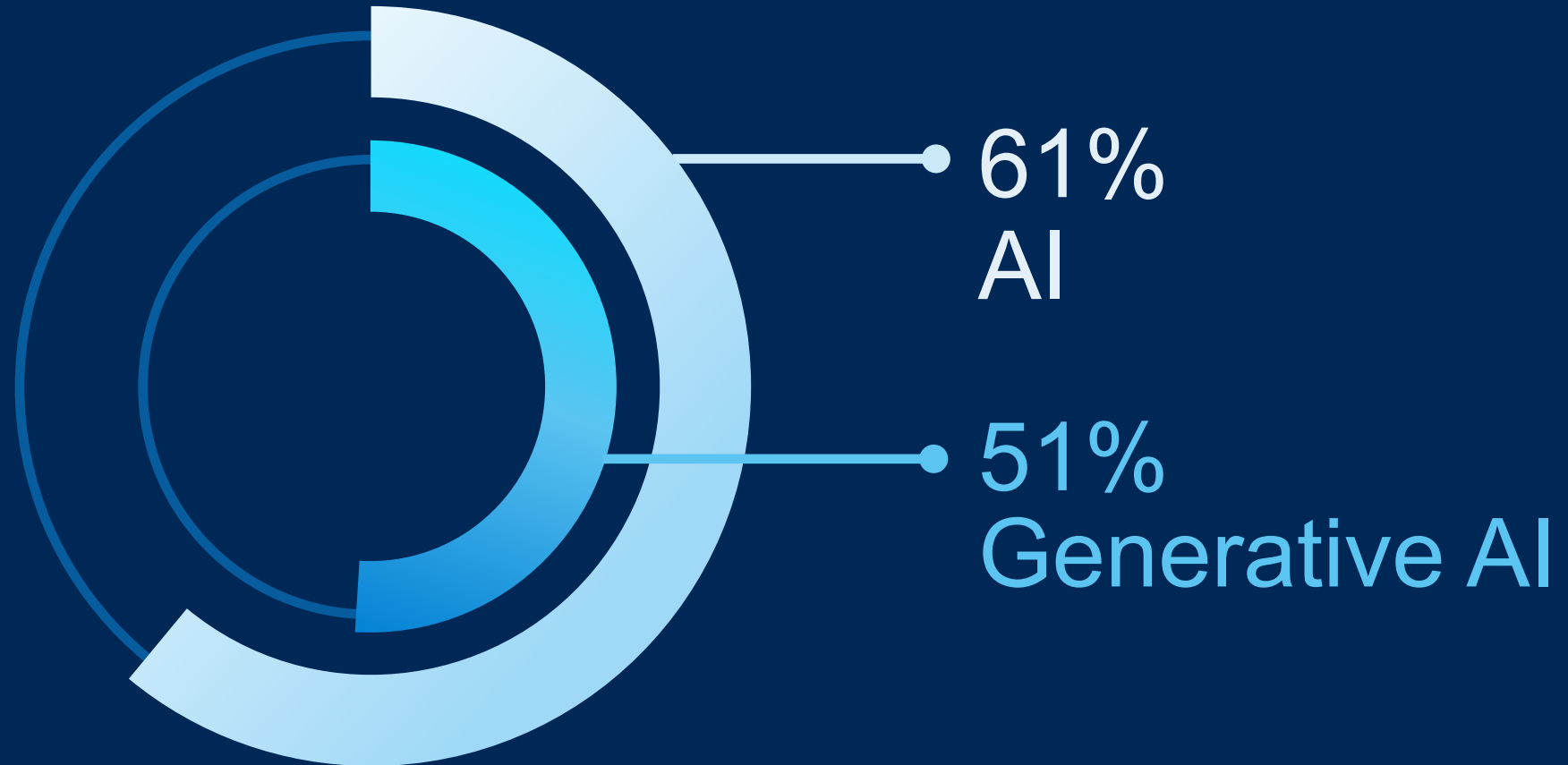
"When we surveyed CEOs on the field where they believe AI is likely to make the most transformative contribution, 48% of CEOs responded with healthcare."

Yale CEO Summit June 2023
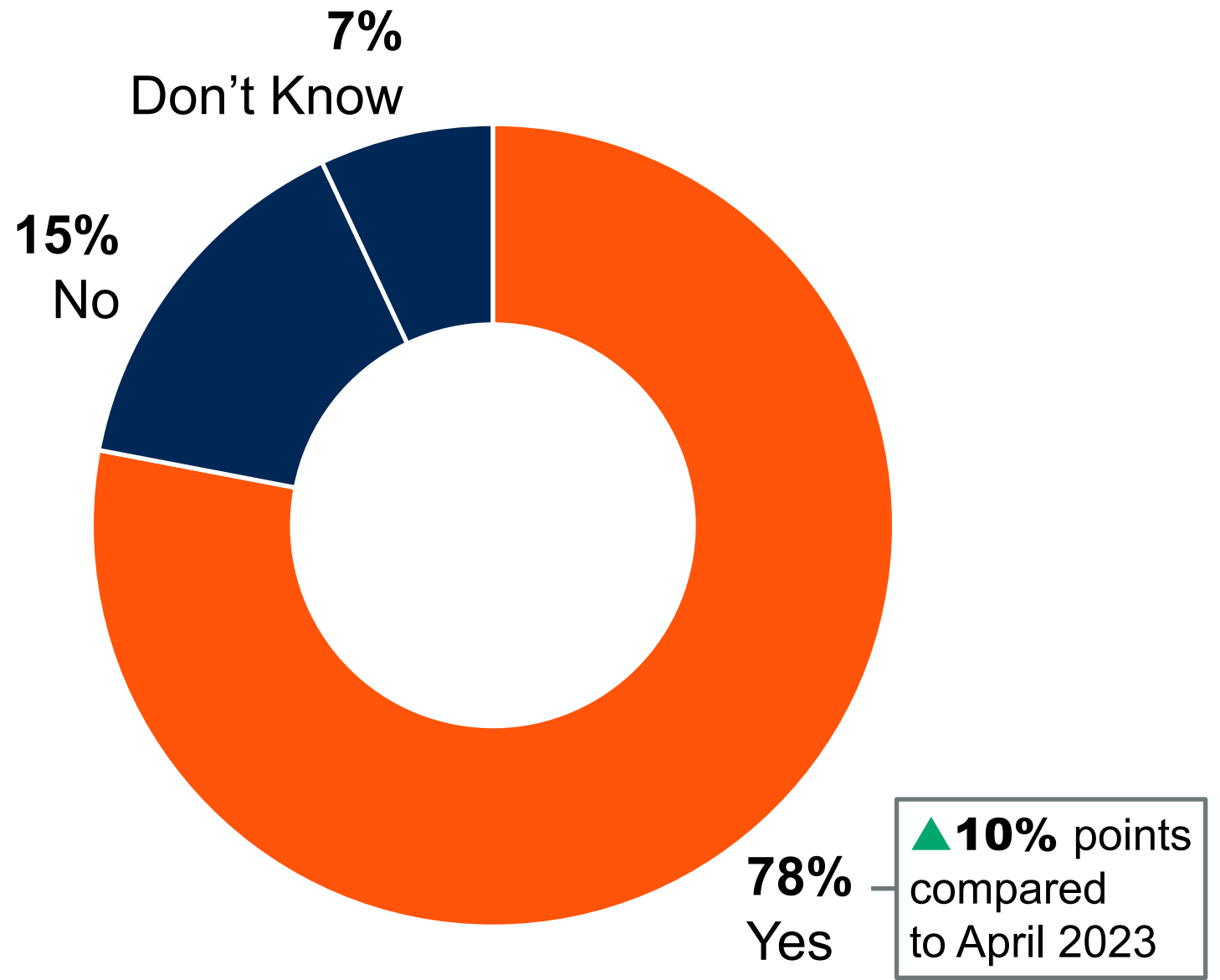
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In GenAI, if 2023 was the year of the <u>Story</u>, then 2024 is the year of the <u>Start</u> setting the stage for 2025 being the year of <u>Scale</u>.

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From FASCINATION to IMPLEMENTATION

2023

- Year of Exploring
- Year of LLM
- More Disruptions / Shiny Objects

2024

- Execution & Results
- Year of Multi-modal
- Public Failures

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GenAI is growing at a rapid pace

Hype Cycle for Generative AI, 2023

By 2026, **more than 80%** of enterprises will have used **generative AI APIs or models**, and/or deployed GenAI-enabled applications in production environments, **up from less than 5% in 2023**.

Installed base application vendors are racing to embed generative capabilities into their installed base solutions, creating an environment in which **AI will be table stakes**

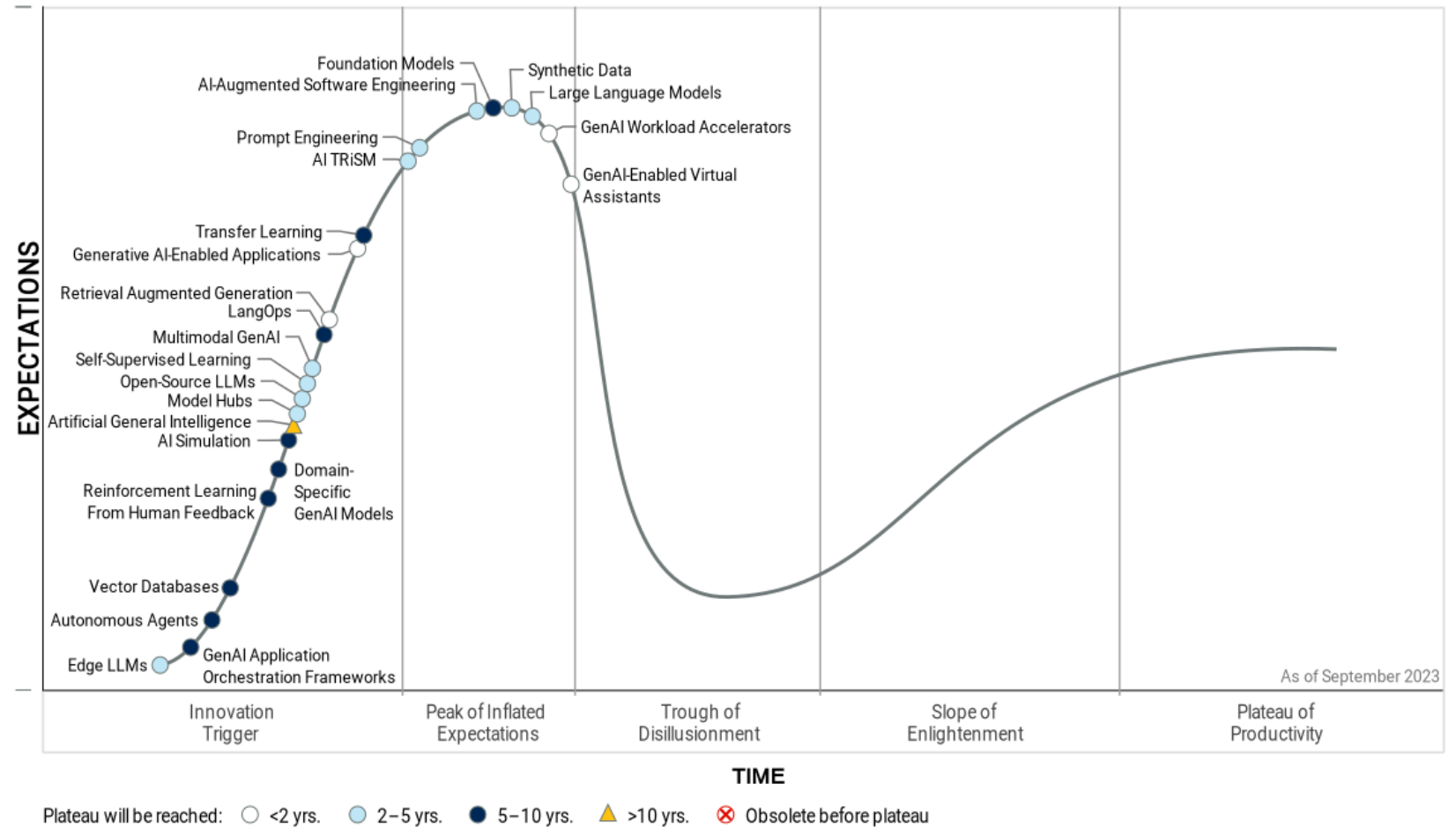Hype Cycle chart — EXPECTATIONS vs TIME. Labels along the curve: Foundation Models, AI-Augmented Software Engineering, Synthetic Data, Large Language Models, GenAI Workload Accelerators, Prompt Engineering, AI TRiSM, GenAI-Enabled Virtual Assistants, Transfer Learning, Generative AI-Enabled Applications, Retrieval Augmented Generation, LangOps, Multimodal GenAI, Self-Supervised Learning, Open-Source LLMs, Model Hubs, Artificial General Intelligence, AI Simulation, Domain-Specific GenAI Models, Reinforcement Learning From Human Feedback, Vector Databases, Autonomous Agents, Edge LLMs, GenAI Application Orchestration Frameworks. X-axis phases: Innovation Trigger, Peak of Inflated Expectations, Trough of Disillusionment, Slope of Enlightenment, Plateau of Productivity. As of September 2023.

Plateau will be reached: ○ <2 yrs.   ○ 2–5 yrs.   ● 5–10 yrs.   ▲ >10 yrs.   ⊗ Obsolete before plateau

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Strategic Planning Assumptions (I)

By 2026, over 100 million people will engage robo colleagues (synthetic virtual colleagues) to contribute to enterprise work.

By 2027, nearly 15% of new applications will be automatically generated by AI without a human in the loop, up from zero percent today.

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Strategic Planning Assumptions (II)

By 2027, fewer than 25% of government organizations will have generative-AI-enabled citizen-facing services.

By 2025, the concentration of pretrained AI models among 1% of AI vendors will make responsible AI a societal concern.

Agenda

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& Use Cases

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Define Your AI Strategy

The New York City Artificial Intelligence Action Plan

October 2023

Initiative 01 - Timeline
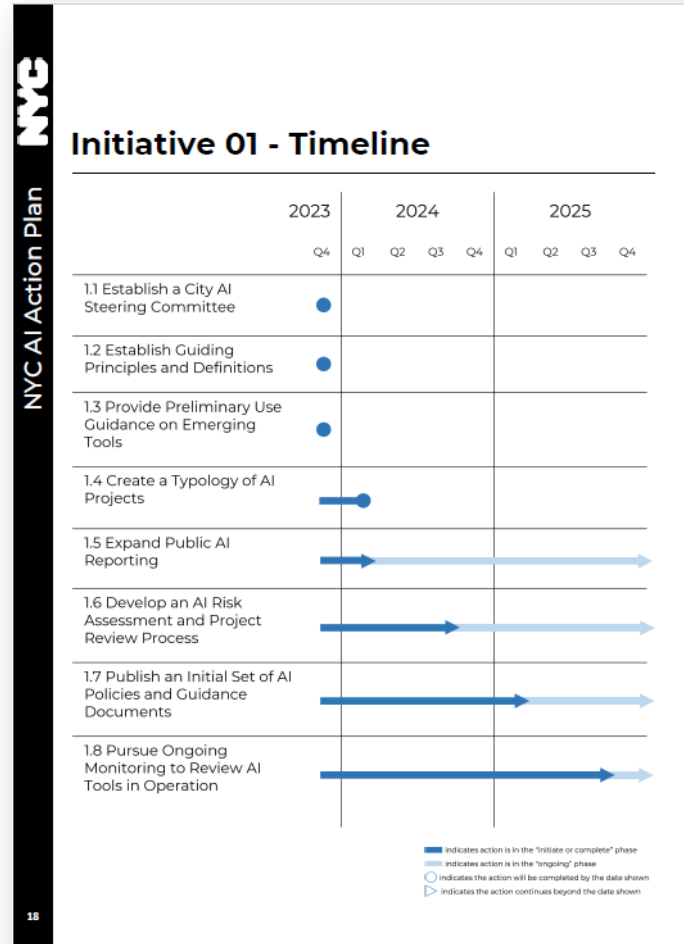
Initiative 04

Build AI Knowledge and Skills in City Government

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AI Opportunity Radar

External

Everyday   **AI**   Game-changing

Internal
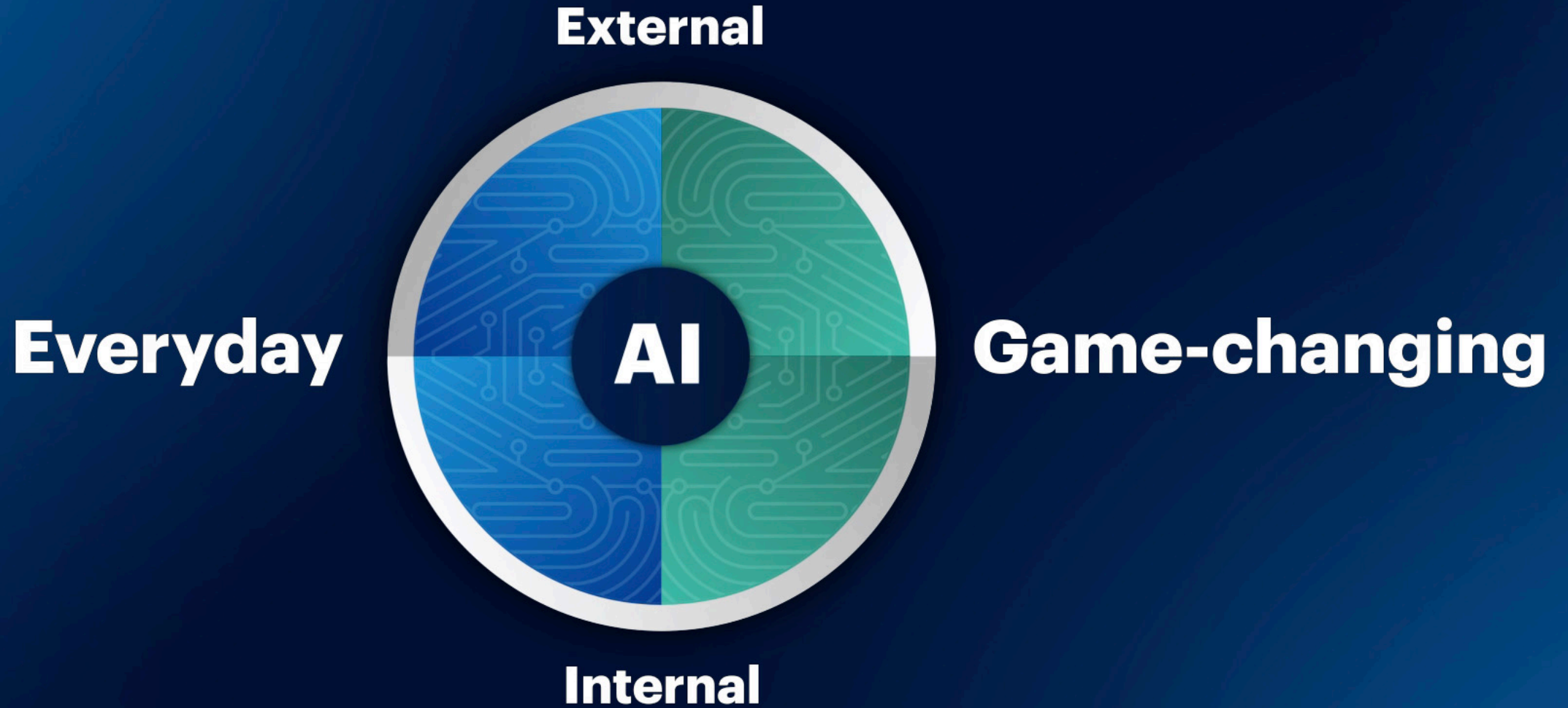
GET READY | Two Tools for Different Leadership Challenges
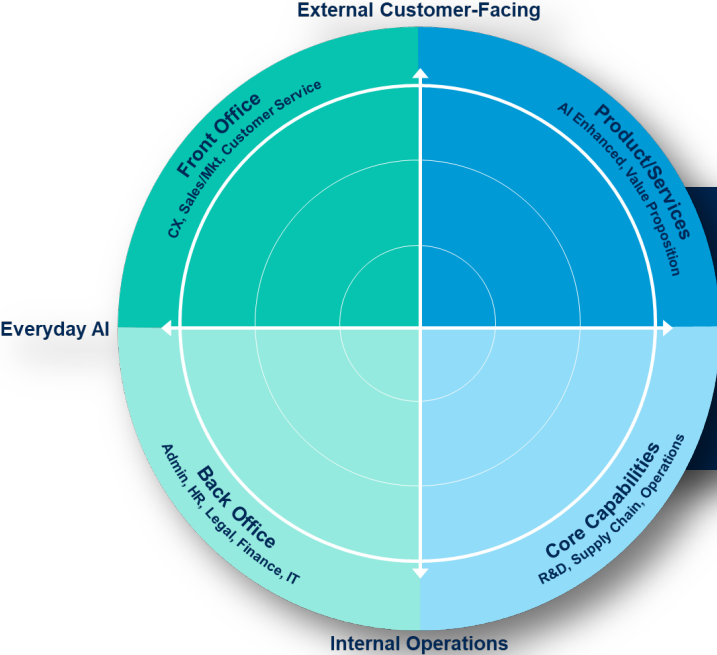
#1 What's Our Ambition?

We will use the **Gartner Opportunity Radar** to Set the Strategic Direction

#2 How Should we Prioritize?

We will use the **Gartner Use Case Prism** to Set the Value and Feasibility Prioritization Criteria

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GET READY | Opportunity Radar to Set the Direction

External Customer-Facing

Front Office
CX, Sales/Mkt, Customer Service

Product/Services
AI Enhanced, Value Proposition

Everyday AI

Game-Changing AI

Back Office
Admin, HR, Legal, Finance, IT

Core Capabilities
R&D, Supply Chain, Operations

Internal Operations

Low
Medium
High

Feasibility is combination of
- Technical Feasibility
- Internal Readiness
- External Readiness

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GET READY | Opportunity Radar to Set the Direction

External Customer-Facing

Front Office
CX, Sales/Mkt, Customer Service

Product/Services
AI Enhanced, Value Proposition

Personalized customer experience/satisfaction

Digitalized and AI-enabled product/service impact

Everyday AI

Cost reduction via AI automation

Game-Changing AI

AI-powered-forecasting/demand planning insights

AI-enhanced employee experience

Back Office
Admin, HR, Legal, Finance, IT

Core Capabilities
R&D, Supply Chain, Operations

Internal Operations

Low
Medium
High

Feasibility is combination of
• Technical Feasibility
• Internal Readiness
• External Readiness

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Government Leaders Are Focusing on Internal v. External Use Cases for GenAI

Top Internal Use Cases (81%)

Data Summarization & Insights
Forensic Analysis, Maintenance Evaluation, Natural Disaster Prediction, Crime Pattern Identification, **Legal Document Summarization**, Scientific Journal Analysis

Process & Workflow Automation
Caseload Tracking & Investigations, Internal Audit, Human Resources (talent intelligence, interview process) **Incident Detection & Response**, **Legal Processing**

Workforce Productivity & Enablement
Emergency Response Effectiveness, Sentiment Analysis, **Contact Center Virtual Assistant, Service Desk Chatbot, Knowledge Management**, Voice Recognition

Top External Use Cases (19%)

Citizen / Customer Experience
Travel Virtual Assistant, Postal Services, **Citizen Services Chatbot**, Vocational Rehabilitation Assistant, Incident Management Chatbot, **Citizen Help Desk**

Public Safety, Health & Wellness
Infectious Disease Reporting, Health Services, Anti-Terrorism & Human Trafficking Triangulation

Content Augmentation & Creation
Legal Brief Development, **Taxpayer Guidelines**, Screening & Legal Documentation, Case Management Collateral

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Top GenAI Use Cases Public Sector Executives Are Exploring

Use Case		Description
Case Summarization & Insight		Improve case management support by summarizing unstructured case files data and support a natural language inquiry on the case file to accelerate insights.
Enhanced Citizen Services		Improve the quality and experience of virtual agents through voice or text chatbots available from government portals or through IM platforms offering more conversational explanation of services and processes as well as improving multilingual capabilities.
Interaction Triaging		Triage incoming correspondence, submissions or applications from citizens and stakeholders to ensure completeness, initiate follow up or clarification, gain insight into sentiment and appropriately prioritize forward on to be actioned.
Briefing Notes		Generate draft briefing notes for senior management on a particular event or interaction or as a status report incorporating statistics, patterns, sentiments and outliers over time.
Training & Preparedness		Generate draft training plans, scenarios and material that is up to date and based on recent, real-world situations to better support onboarding new staff and retraining existing staff on how to handle common and edge case situations.

Source: Gartner

Looking for more use cases?

Gartner is tracking more than 500 GenAI use cases across the enterprise and assessing business impact and feasibility

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GET READY | Prism to Define Prioritization Criteria

Likely Wins offer a great combination of high feasibility and high business value.

Calculated Risks offer high business value but low feasibility.
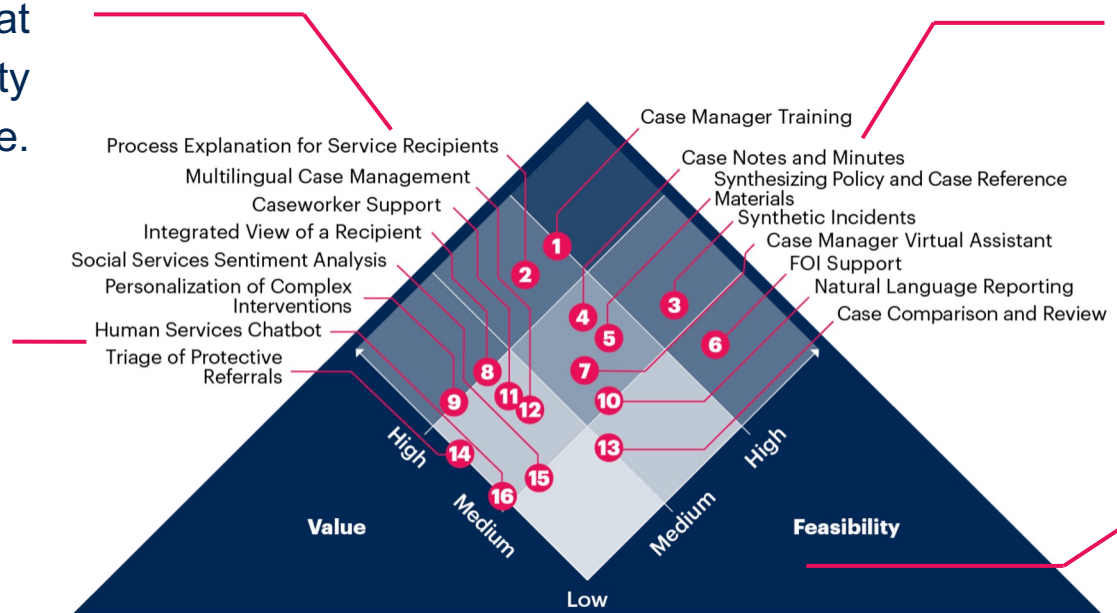
Marginal Gains are highly feasible but offer low business value.

Selective Exceptions offer low business value and low feasibility.

Process Explanation for Service Recipients
Multilingual Case Management
Caseworker Support
Integrated View of a Recipient
Social Services Sentiment Analysis
Personalization of Complex Interventions
Human Services Chatbot
Triage of Protective Referrals

Case Manager Training
Case Notes and Minutes
Synthesizing Policy and Case Reference Materials
Synthetic Incidents
Case Manager Virtual Assistant
FOI Support
Natural Language Reporting
Case Comparison and Review

Value — High — Medium — Low — Medium — High — Feasibility

Prioritize Your Best AI Use Cases With a Gartner Prism

Business Value could be combination of

- Cost Reduction
- Revenue Optimization
- CX Improvements
- Etc.

Feasibility could be a combination of

- Technical Feasibility
- Internal Readiness
- External Readiness
- Etc

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Prioritization of Use Cases is based on business value and feasibility scores and associated risk of each use case

Business Value Scores are calculated based on 7 dimensions with varying weights

1. Business Productivity
2. Net New Revenue
3. Customer Satisfaction
4. Competitive Advantage/Avoidance of Disruption
5. Support of a Strategic Goal
6. Enablement of another GenAI Use Case
7. Time to Value

Feasibility Scores are calculated based on 6 dimensions

1. Technical Solution Complexity
2. Dependency on another initiative/GenAI Use case
3. Data Availability/Quality
4. Business & Technical Skills availability
5. Level of Change Management Required
6. Organizational Readiness

Risk of each use case is estimated using the Gartner risk assessment matrix

1. How high is the inherent risk? (High risk regarding ethics, legal/regulatory/data sensitiveness, technical, and intellectual property, impact of wrong results...)
2. How wide is the risk exposure?

Use Cases are placed on the x – y axes based on scores. Bubble size: Risk

GenAI Top-18 Use Cases
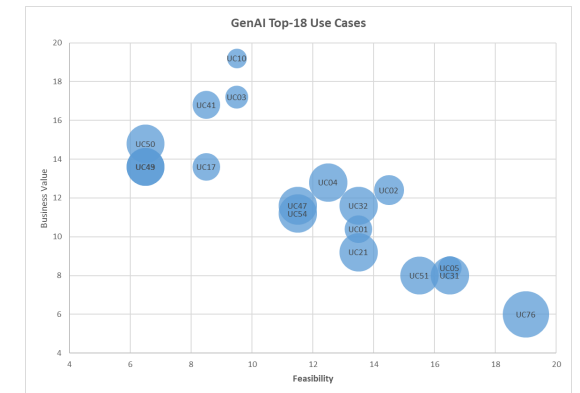
1	2	3	4
Business Value Scores	**Feasibility Scores**	**Risk Assessment**	**Placement on the Prioritization Plane**

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GenAI Use-Case Prism for Human Services

GenAI Use-Case Prism for Human Services

Process Explanation for Service Recipients
Multilingual Case Management
Caseworker Support
Integrated View of a Recipient
Social Services Sentiment Analysis
Personalization of Complex Interventions
Human Services Chatbot
Triage of Protective Referrals

Case Manager Training
Case Notes and Minutes
Synthesizing Policy and Case Reference Materials
Synthetic Incidents
Case Manager Virtual Assistant
FOI Support
Natural Language Reporting
Case Comparison and Review

Value
High
Medium
Low
Medium
High
Feasibility

Source: Gartner
797823_C

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Gen AI Use-Case Prism for Govt Contact Centers

GenAI Use-Case Prism for Government Contact Centers

Contact Center Staff Onboarding
Step-by-Step Services
Multilingual Contact Center
Legislation Virtual Assistant
Contact Center Change Modeling
Natural Language Ad Hoc Reporting

Contact Center Virtual Assistant
File Noting
Unattended Mailbox Monitor
Contact Center Chatbot
Contact Center Sentiment Analysis
Draft Briefing Note
Call Comparison

High — Medium — Low

Value — Feasibility

Medium — High

Source: Gartner

797822_C

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Gen AI Use-Case Prism for Govt Regulatory & Compliance

GenAI Use-Case Prism for Government Regulatory and Compliance
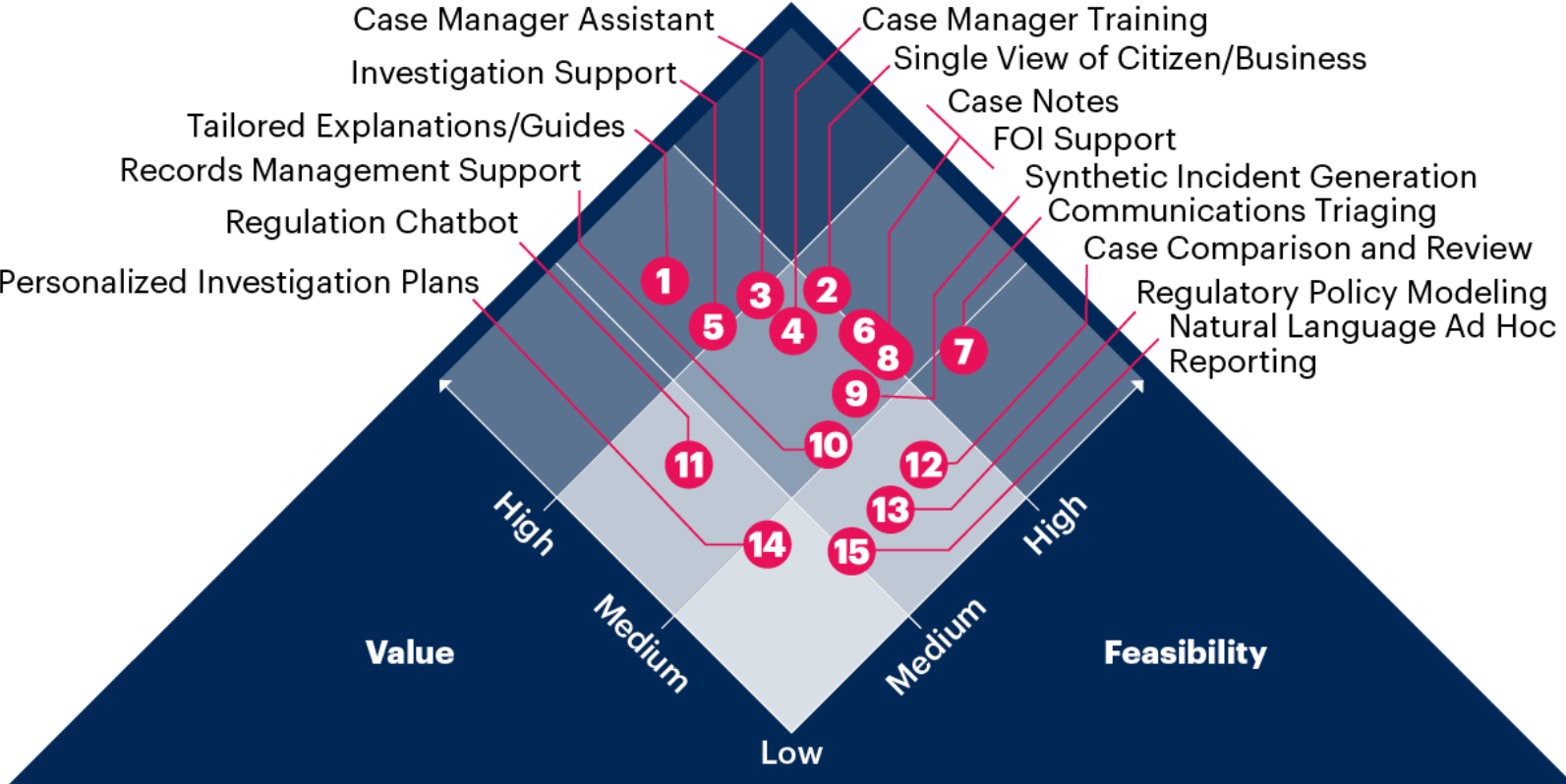
Source: Gartner

797825_C

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The Stated Promise of AI — Increased Productivity

"Generative AI could raise global GDP by 7%."

"14% productivity increase with AI conversational assistant."

"Software engineers code up to twice as fast."

"Generative AI could enable labor productivity growth of 0.1 to 0.6 percent annually through 2040."

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Democratization of Work and Redistribution of Workload

The most common impact for the next decade will **not be to replace people**, but to **augment jobs.**

In collaboration with Accenture

WORLD ECONOMIC FORUM

Jobs of Tomorrow:
Large Language Models and Jobs
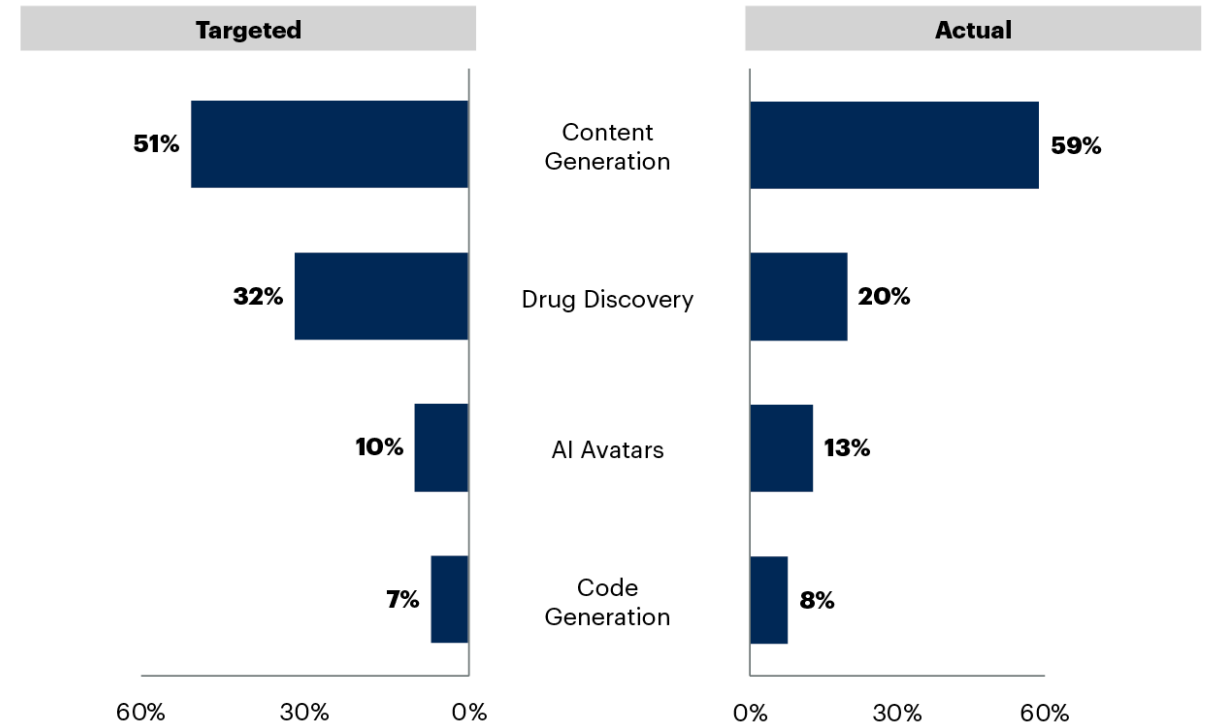
WHITE PAPER

SEPTEMBER 2023

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A 3% increase in productivity over the next decade*?

- Generative AI (GenAI) will boost labor productivity, potentially amplifying global GDP while exacerbating economic inequality.

- GenAI will revolutionize business models by introducing machine customers, revealing ways to break financial constraints and enhancing economic forecasting via large language models (LLMs).

- GenAI will increase opportunities to improve customer experience through greater personalization based on more transparency of personas and segments.

Top Use Cases for Generative AI

Targeted		Actual

Content Generation — Targeted: 51% | Actual: 59%
Drug Discovery — Targeted: 32% | Actual: 20%
AI Avatars — Targeted: 10% | Actual: 13%
Code Generation — Targeted: 7% | Actual: 8%

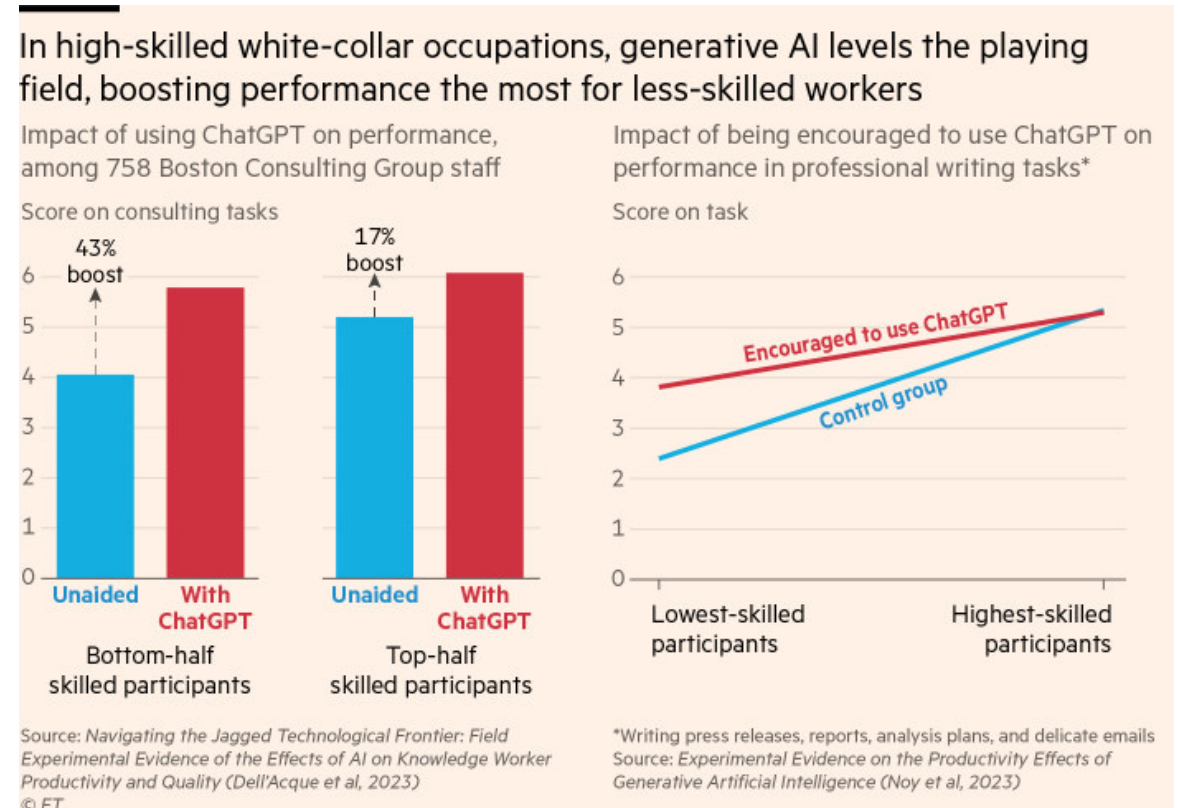60%   30%   0%   0%   30%   60%

Source: Gartner
779868_C

*Erik Brynjolfsson en el Gartner Simposio, Barcelona, noviembre de 2023, https://www.brookings.edu/articles/machines-of-mind-the-case-for-an-ai-powered-productivity-boom/

Gartner

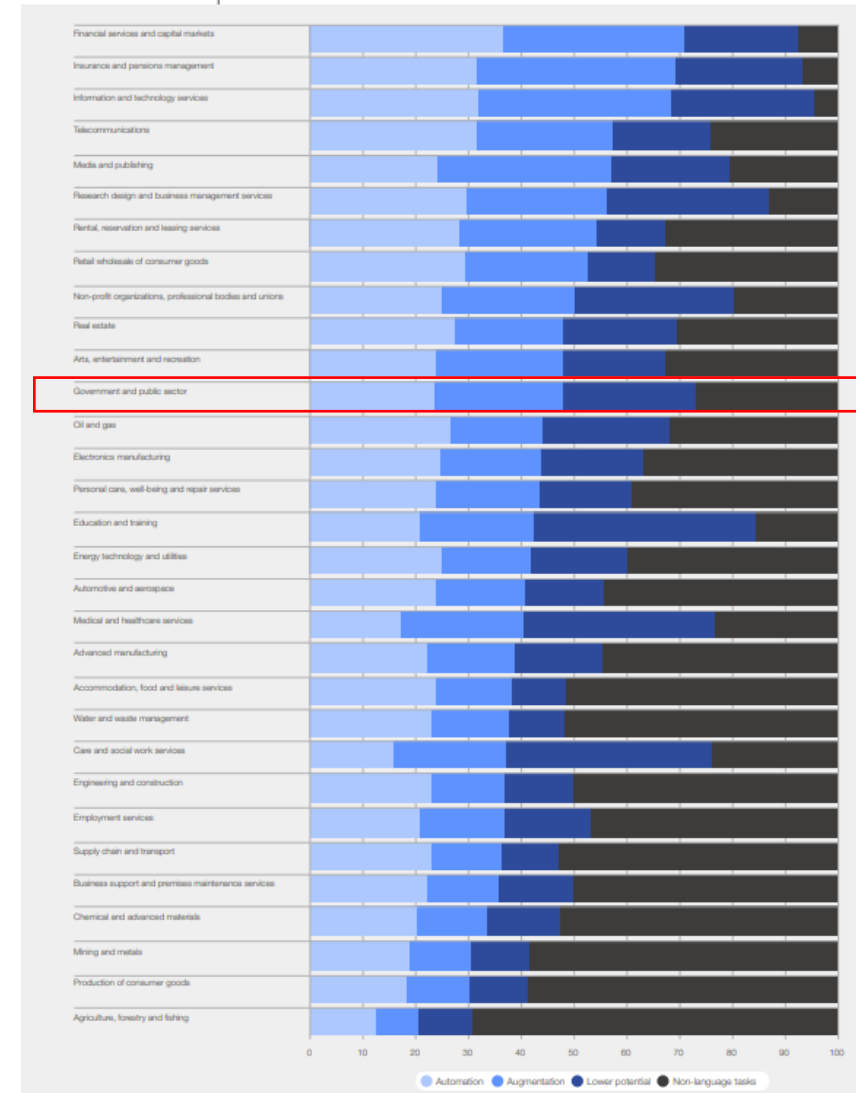# The most advantaged, the "worst" (among the "best")?

- "Employees right across the skills distribution benefited, but in a pattern now common in generative AI studies, the biggest performance gains came among the less highly skilled in their workforce. This makes intuitive sense: large language models are best understood as excellent regurgitators and summarisers of existing, public-domain human knowledge. The closer one's own knowledge already is to that limit, the smaller the benefit from using them."

https://www.ft.com/content/b2928076-5c52-43e9-8872-08fda2aa2fcf

In high-skilled white-collar occupations, generative AI levels the playing field, boosting performance the most for less-skilled workers

Impact of using ChatGPT on performance, among 758 Boston Consulting Group staff
Score on consulting tasks

Impact of being encouraged to use ChatGPT on performance in professional writing tasks*
Score on task

Source: Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality (Dell'Acque et al, 2023) © FT

*Writing press releases, reports, analysis plans, and delicate emails
Source: Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence (Noy et al, 2023)
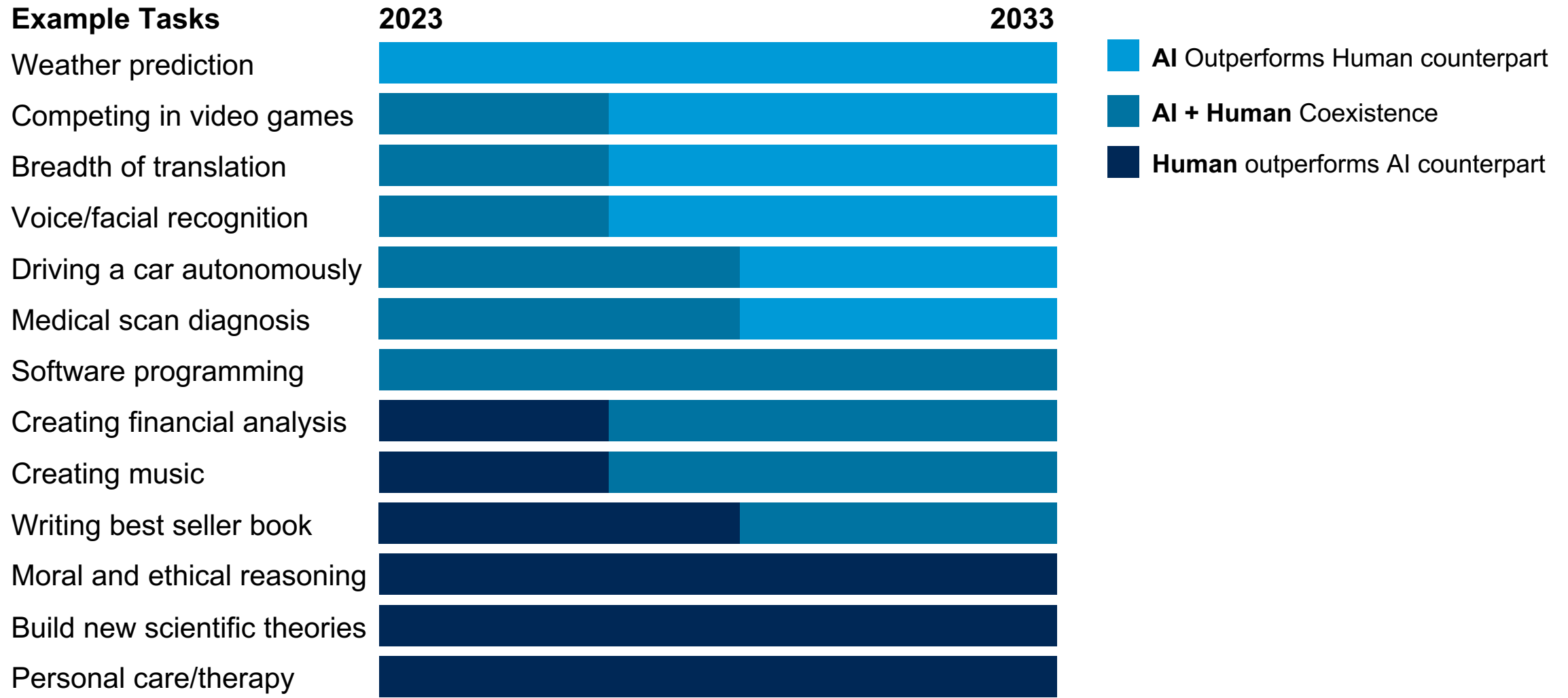
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A task-based approach to job exposure*

- "The report found that the number one task predicted to be automated now and in the next five years is information and data processing. The present task-based analysis also indicates that this task has high potential for automation (…). Similarly (…) the lowest potential for automation will be in reasoning and decision-making tasks. (…) This paper's task-based analysis denotes decision-making tasks as having high potential for augmentation (especially for evaluating personal capabilities or performance, reading documents or materials to inform work processes, and evaluating patient or client condition or treatment options)."

Higher potential for augmentation
Evaluate personnel capabilities or performance
Collect data about consumer needs or opinions
Read documents or materials to inform work processes
Evaluate patient or client condition or treatment options
Prepare informational or instructional materials
Test performance of computer or information systems

*https://www.weforum.org/publications/jobs-of-tomorrow-large-language-models-and-jobs/

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AI Outperforms People in Some Tasks, Not All

Example Tasks	2023		2033

Legend:
- AI Outperforms Human counterpart
- AI + Human Coexistence
- Human outperforms AI counterpart

Weather prediction

Competing in video games

Breadth of translation

Voice/facial recognition

Driving a car autonomously

Medical scan diagnosis

Software programming

Creating financial analysis

Creating music

Writing best seller book

Moral and ethical reasoning

Build new scientific theories

Personal care/therapy

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It won't be one model to rule them all …

Task Specialised — 1000's — *ESM Fold*

Domain Specific — 100's — *Bloomberg, Med-PaLM, GitHub Co-Pilot*

General Purpose — 10's — *ChatGPT, Bard, Titan, LLaMA*

Combinations
millions/billions

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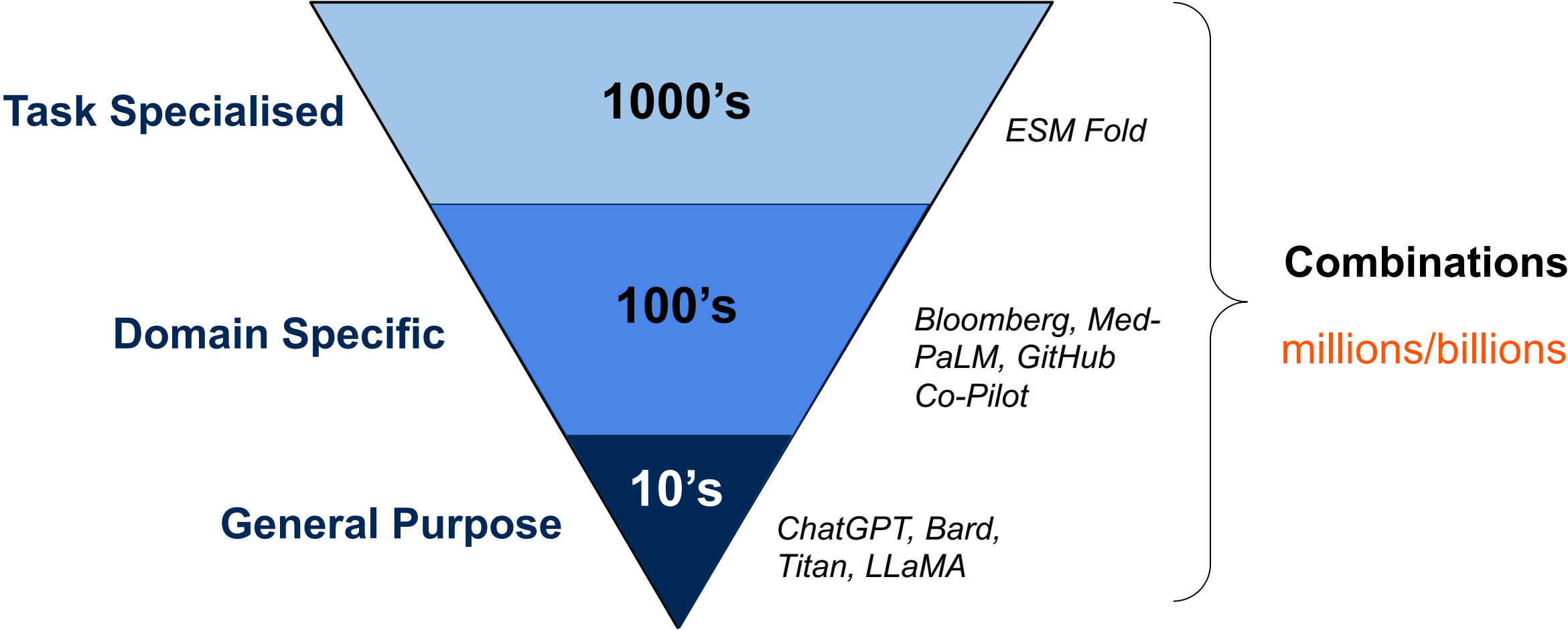
GenAI Approaches

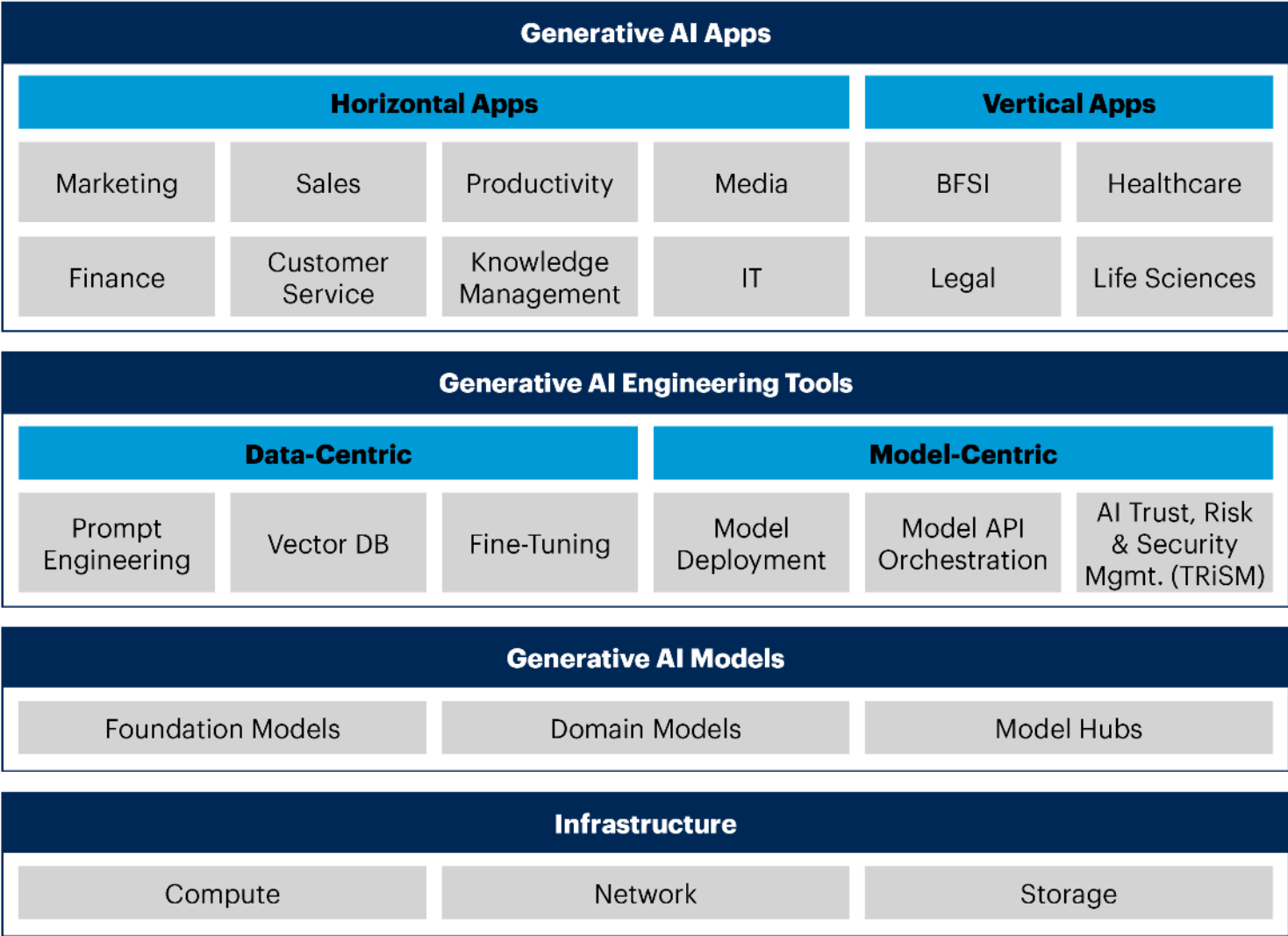GenAI Development Approaches

	Consume GenAI Embedded in Apps	Embed GenAI APIs in a Custom App Frame	Extend GenAI Models via Data Retrieval	Extend GenAI Models via Fine-Tuning	Build Custom Models From Scratch
Provider-Managed / Self-Managed	Application	Application	Application	Application	Application
	Data Retrieval and Prompt Engineering	Data Retrieval and Prompt Engineering	Data Retrieval and Prompt Engineering	Data Retrieval and Prompt Engineering	Data Retrieval and Prompt Engineering
	Fine-Tuning	Fine-Tuning	Fine-Tuning	Fine-Tuning	Fine-Tuning
	Foundation Model	Foundation Model	Foundation Model	Foundation Model	Foundation Model

Buy ←——————————————————————————→ **Build**

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Generative AI Technology Landscape

Generative AI Apps					
Horizontal Apps				**Vertical Apps**	
Marketing	Sales	Productivity	Media	BFSI	Healthcare
Finance	Customer Service	Knowledge Management	IT	Legal	Life Sciences

Generative AI Engineering Tools					
Data-Centric			**Model-Centric**		
Prompt Engineering	Vector DB	Fine-Tuning	Model Deployment	Model API Orchestration	AI Trust, Risk & Security Mgmt. (TRiSM)

Generative AI Models		
Foundation Models	Domain Models	Model Hubs

Infrastructure		
Compute	Network	Storage

The GenAI technology landscape is rapidly evolving, creating a new ecosystem of vendors and products that technology innovation leaders find difficult to navigate.

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How to confidently move forward...

1

Establish North Star

Drive insight into GAI for internal, productivity-enhancing and external, business growth use cases. The resulting short list should drive selection of a set of Proof-of-Concept candidates and a Proof-of-Concept plan that will be further developed and executed in the coming months.

2

Governance / COE Foundations

Establish the governance, policy, and skill foundations required for sustained success. Define policies of use – internally and externally. Define governance across business, IT, and ethics/IP/legal dimensions.

3

Technology / Data Foundations

Establish the technology (and vendor) foundations required to support your initial efforts – from LLM approach to data preparate and vendor options to ensure the right foundation is in place. Includes Cybersecurity dimension.

4

Copilot Readiness & Acceleration Plan

Get the enterprise ready for augmented ways of working across corporate functions and LOBs. Identifies target roles and processes to adopt, how work will change, and the metrics that will measure impact.

5

Use Case Proof-of-Concept Design & Plan

Select POC candidates. Quantify value. Define data and architectural patterns. Identify short-list of LLM vendors (as req'd). Develop POC plan, establish teams, and ready environments for execution.

6

Use Case Proof-of-Concept Execution

Launch the POC efforts drive insight from a test-and-learn series of sprints. Develop and test the POCs. Measure and track results. Capture findings and make go-forward recommendations and scaling plan.

7

Continually Sense, Adapt, Respond

Develop a continuous sense-and-respond listening function that keeps you ahead on AI/GAI developments and the implications of market, technology, and competitor moves on your specific lines of business.

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Prompt Engineering | Hey Robo, Help Me to Fine Tune Use Case

NOT-SO-BAD PROMPT

Can you help me now to fine tune the following use case:

"Automating routine accounting tasks, such as invoice processing and reconciliation"

EVEN BETTER PROMPT

Can you help me now to fine tune the following use case:

"Automating routine accounting tasks, such as invoice processing and reconciliation"

Please help me to develop a detailed implementation plan

NEXT LEVEL PROMPT

Can you help me now to fine tune the following use case:

"Automating routine accounting tasks, such as invoice processing and reconciliation"

Please help me to:

1. Define the specific inputs and outputs of a generative AI model

2. Gather and prepare the training data required for the model

3. Select the right generative AI algorithm and hyperparameters

4. Develop a plan for evaluating the performance of the model

Hey Robo, Help Me to Fine Tune a Specific Use Case and develop for example a detailed implementation plan for it.

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Balancing AI Energy and Emissions Impacts

Positive Impacts

Negative Impacts
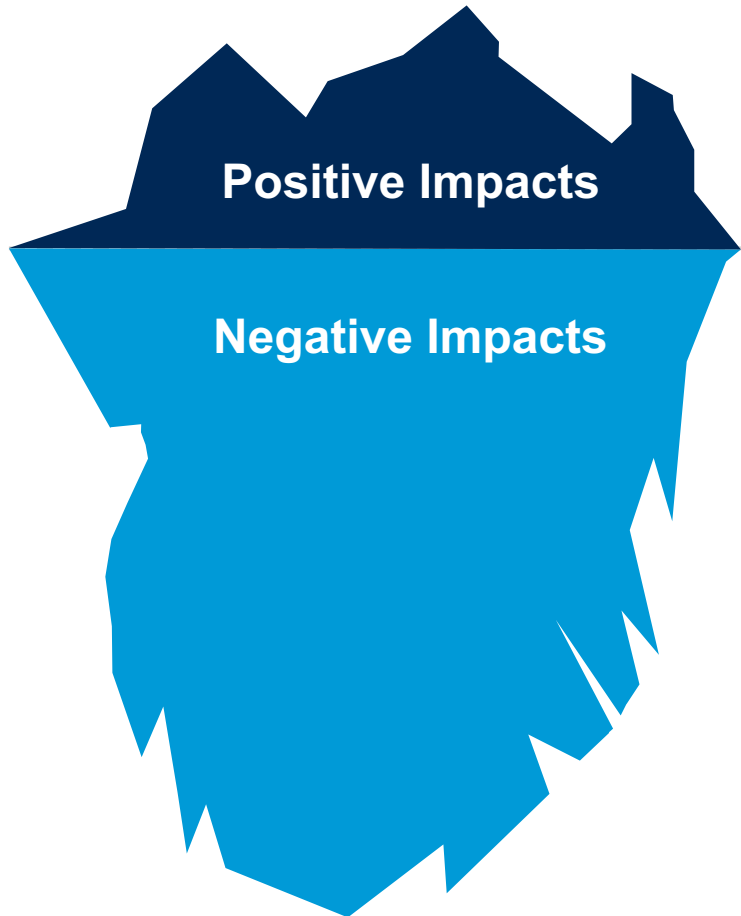
By 2030, AI has the potential to reduce global CO_2e emissions by **5% to 15%**.

By 2030, AI may consume up to **3.5%** of the world's electricity.

Actions for Executive Leaders

- Understand AI's end-to-end, environmental, social and economic breakeven point where positive impacts exceed the negative.

- Assess application of AI technology for unintended consequences.

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Responsible AI & The Human Factor

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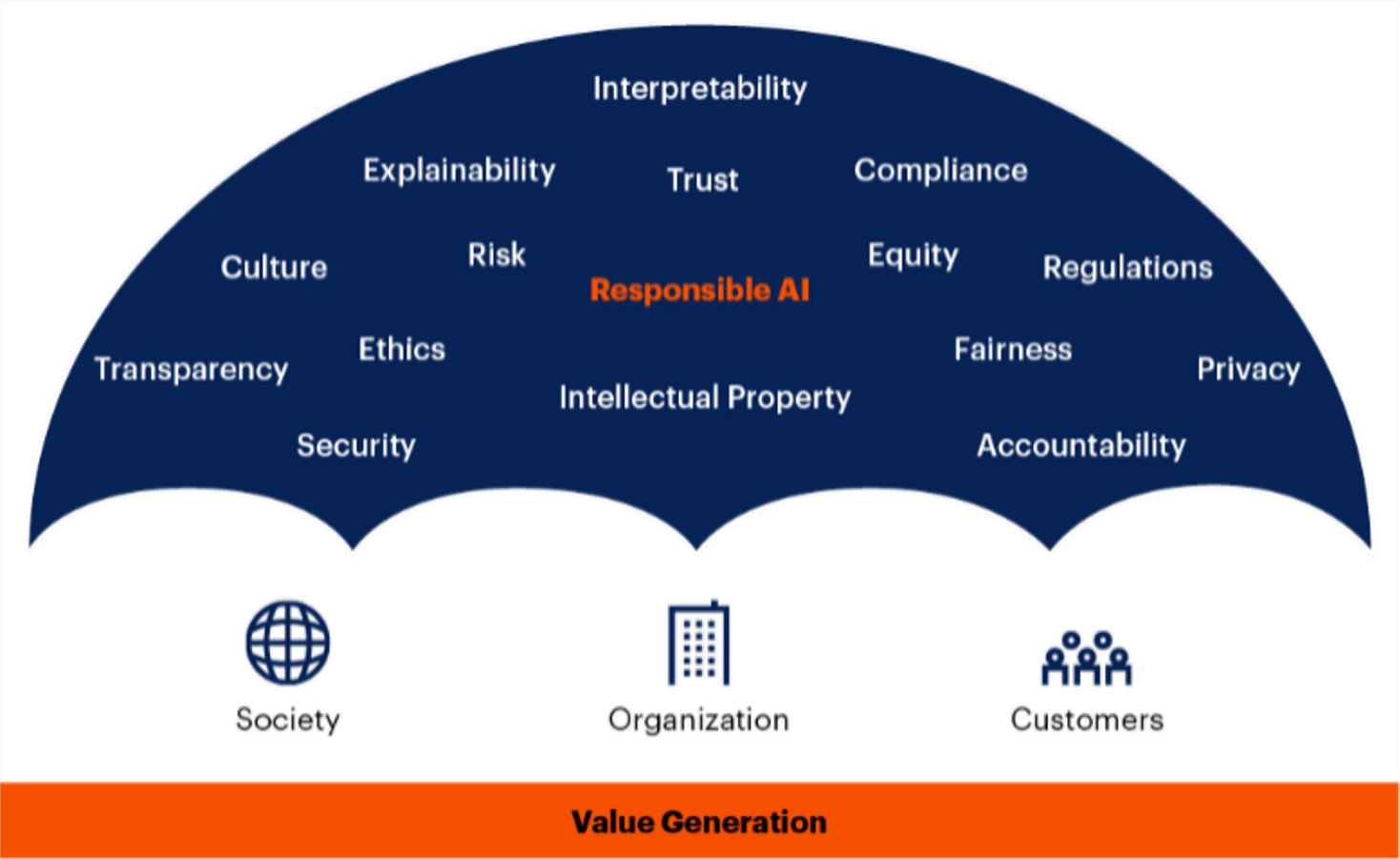
Recommendations GenAI

Recognize that this is a very early stage and a hyped technology

- But the **potential is significant**, so proceed but don't over pivot
- Encourage **"out-of-the-box" thinking** about work processes

Define governance guidelines and pilots

- Ensure **all users understand** the risks, issues and practices
- Encourage **experimentation and pilots**
- Keep **"Human in the Loop"** to review **output**

Develop a task force reporting to the CIO and CEO

- Identify existential **threats** posed and major **opportunities**
- Management needs to know in order to plan

Plan roadmap and discovery map and monitor

- **Skills, services, operationalization, investments** needed
- Address strategic opportunities and threats
- **Monitor** and follow the **market and technology** as it rapidly evolves
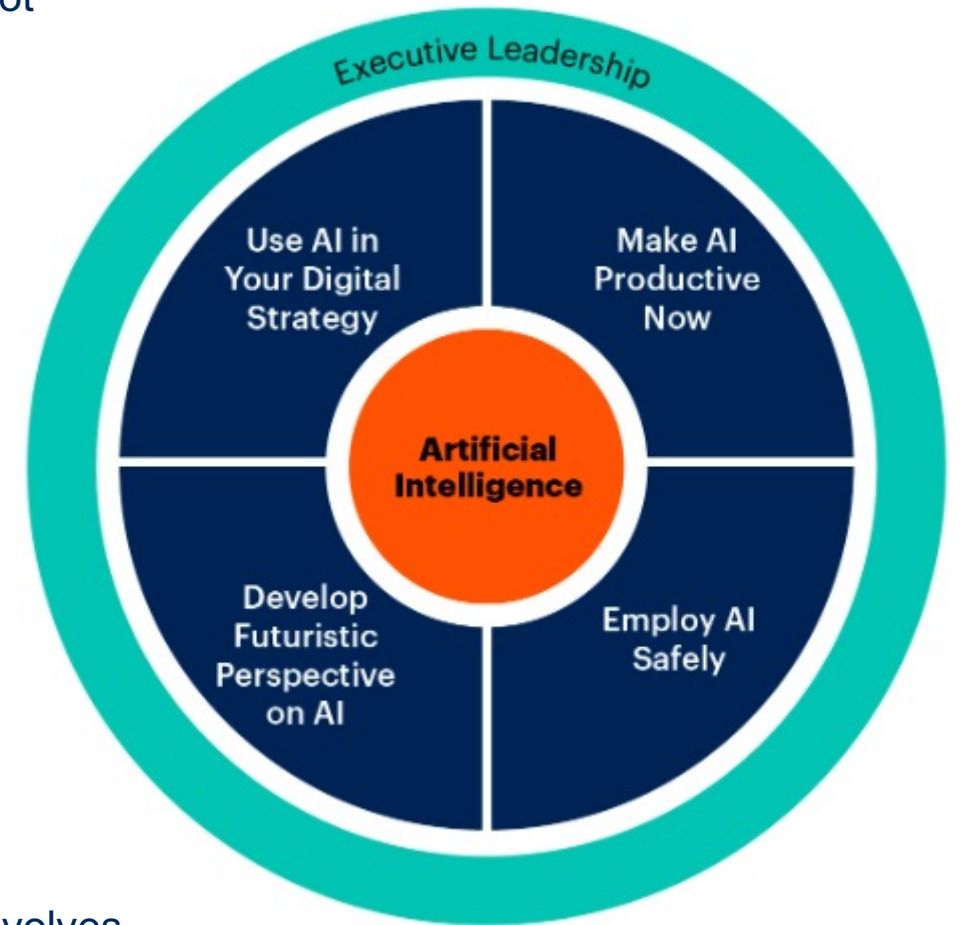
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SUSTAINABLE

AI + EI

Eskerrik Asko!
Muchas gracias

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