Generative AI

How AI will transform your business

December 14, 2023

Building a better working world

Agenda & #whoami

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AI Times...

1

It was the best of times, it was the worst of times,

…,

it was the age of wisdom, it was the age of foolishness,

…,

it was the spring of hope, it was the winter of despair,

…

we were all going direct to Heaven, we were all going direct the other way

… everything being received, for good or for evil, in the superlative degree of comparison only.

Opening Lines of *'A tale of Two Cities'* by Charles Dickens

By **2025**, the **10%** of enterprises that establish AI (artificial intelligence) engineering best practices will generate at least **3x more value** from their AI efforts than the **90%** of enterprises that do not.

Source: EY study

“Artificial intelligence has truly come of age. It is no longer spoken of in terms of potential because it is already reshaping whole industries. For individual businesses, enterprise-grade AI was once out-of-reach and expensive. Yet with every new AI application it becomes ever more affordable. We are seeing the impact right now and we’re committed to applying AI to solve business problems more cost-effectively for our clients.”

Hans Jessen,
EY Global Artificial Intelligence Deputy Leader

CEOs and CTOs must work together to understand the interactions between people and technology and create a strategy for how the two can come together to build an AI-enabled organization.

02

Generative AI: Hype or Transformative?

- Know the Facts
  - New AI tech can generate content
  - Comes pretrained for a variety of tasks
  - A huge investment in the area will transform the market radically

Defining and distinguishing Generative AI

Artificial Intelligence

AI, or artificial intelligence, is a field of computer science that focuses on creating intelligent machines capable of tasks requiring human intelligence.

Machine Learning

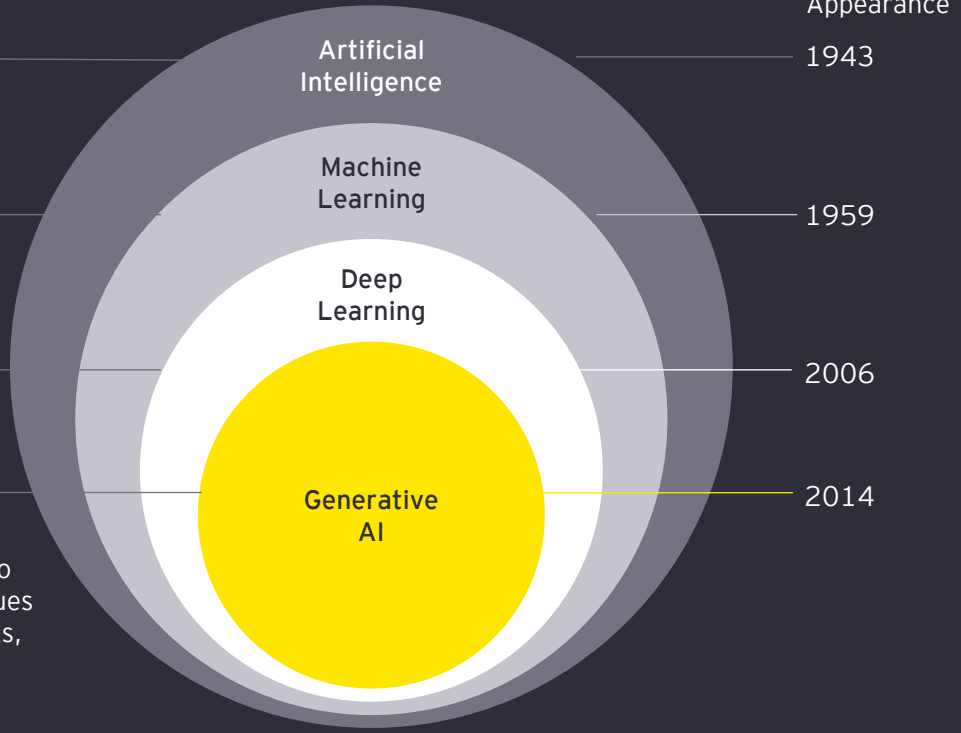
Machine learning is a subfield of artificial intelligence, which is broadly defined as the capability of a machine to imitate intelligent human behaviour.

Deep Learning

Deep learning is a subset of machine learning, which is essentially a neural network with three or more layers.

Generative AI

Generative AI is a type of artificial intelligence that can create new content such as images, text, audio, or video based on the data it has been trained on, using techniques like large language models, transformer neural networks, and generative adversarial networks



Text based Gen AI Ecosystem Evolution

November 2022
ChatGPT (based on GPT-3) is introduced

February 2023:
Microsoft releases AI powered Bing chat

March 2023:
OpenAI integrates GPT-4 in ChatGPT capabilities

March 2023:
Google launches Bard, its ChatGPT alternative

July 2023:
Meta introduces Llama 2, its open source LLM model

Timeline Progress GenAI Image Generation

March 2022 | April 2022 | July 2022 | November 2022 | March 2023

ChatGPT is one type of Generative AI capability in a sea of growth

GPT

Generative

Pre-trained

Transformer

Use Case Vertical Ecosystem

ChatGPT, synthesia, BLOOM, WolframAlpha, stability.ai, DALL·E 2, Midjourney, Jasper, GitHub Copilot, COMPOSE AI, wordtune, MOONBEAM, cogram, CONTENDA, codeium, LAVENDER, QuillBot, Character.AI, MUTABLE AI, artbreeder, GenShare, runway, Hour One, LAIKA, Mintlify, Hypotenuse AI, Perplexity, tabnine

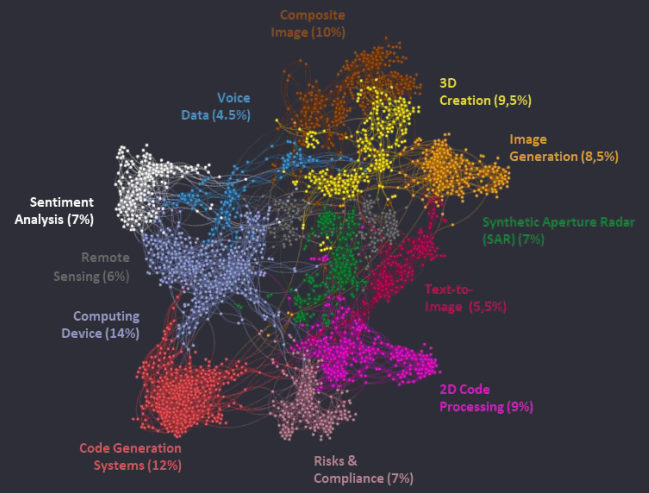
ANTHROP\C, OpenAI, DeepMind, Hugging Face

- Pretrained Language Models
- Image Generation
- Video Generation
- Code Generation
- Audio Generation

ChatGPT is a large language model that uses pretraining and finetuning to generate human like responses to text based conversations

The start-up community is just getting started

Analysis of 4000+ patents



- Hundreds of startups are developing Generative AI use cases, including finance, risk, legal, etc.
- Timeline for commercialization is estimated at 18+ months

03

A Tale of Two CEOs

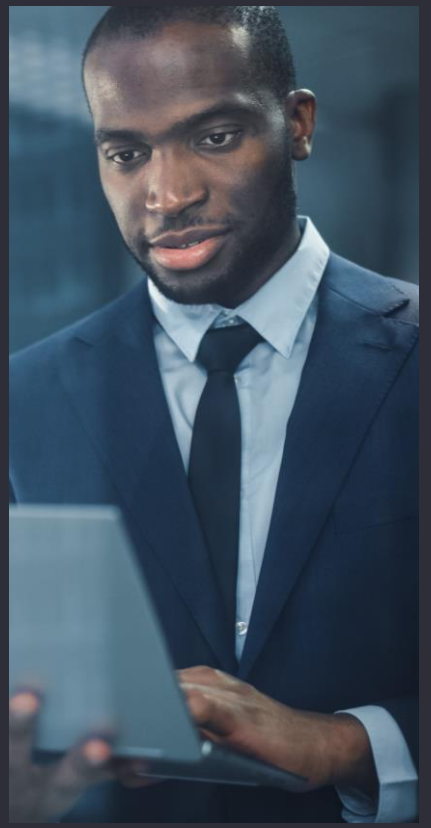
In superlative degree of comparison

A tale of two CEOs

Tracking the Storm: the radical CEO

- ‘This is a turning point! The new technology gives us the opportunity to make history!’
- ‘We will start from scratch!!’
- Invest Heavily
- Redesign processes and products
- New ‘lights out’ processes without human interaction
- Scaring of investors due to the radical transformation
- Lots of regulatory, legal, issues, and ethical issues emerged
- Labor force, workplace issues unfolded
  - Friction, roles reassignment
  - Reskilling required

Recalled to Life: the sensible CEO



- ‘I will not be swayed by the hype. Technology always evolves …’
- ‘We have made thorough plans and we will follow them. That is the sensible path’
- Realization within months that the market has radically changed
- Competitors capitalized on AI capabilities previously not available to:
  - Cut costs
  - Deliver better products/services faster
  - Take portions of the market quickly
- Several quarterly results will be disappointing scaring investors
- Demoralized employees will look for jobs at successful competitors

GenAI/AI algorithms operate within a multifaceted and ever-evolving ecosystem…

NON-EXHAUSTIVE

Layers of complexity	Description
Markets	**Varying stages of digital maturity** across sectors, markets & countries incl. digital infrastructure and workflows which complicate the implementation of AI
Regulations	**Evolving AI regulations and assessment frameworks,** shaping the freedom of AI deployment, value perception and P&R[1] determination as well as data sourcing, privacy and ownership
Stakeholders	**Complexity of individual business ecosystems, products and services,** not allowing a one-size-fits-all approach to engage across stakeholders
Market players	Rapidly **saturating markets** with new entrants can present both competitive risks and potential partnership opportunities

Key implications

When commercializing AI algorithms, a company must be consider these aspects at both **a macro and micro level**

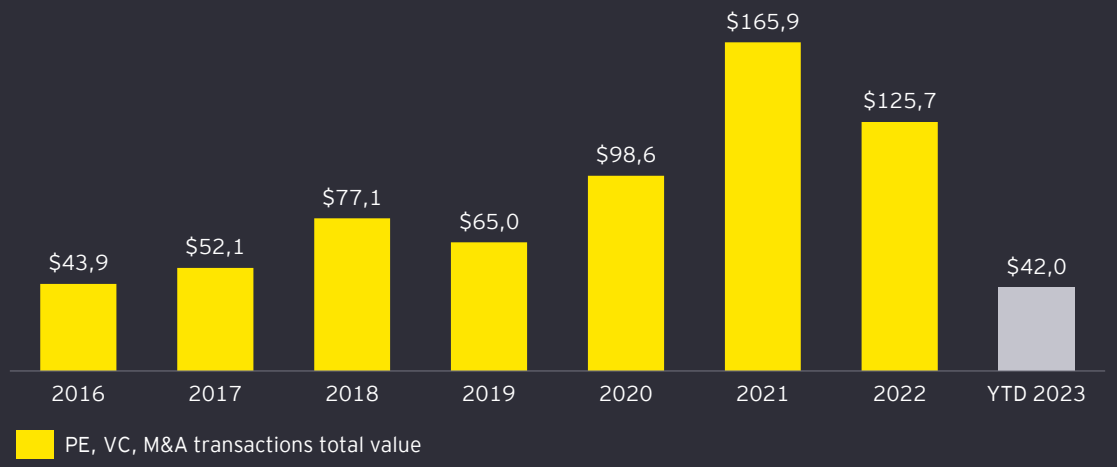
Each complexity layer must be thoroughly assessed in order to **assess value drivers and commercial potential**

1. P&R: Pricing & Reimbursement

Source: EY-Parthenon analysis; IQVIA; Kim et al (2022)

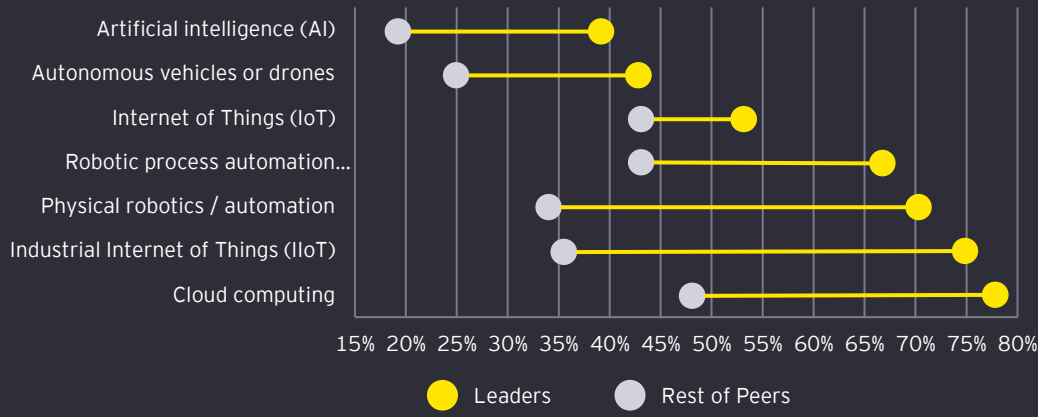
Why | Large scale investments are being made in AI leading to an innovation boom; enterprises not building capabilities risk being left behind

AI Investments in millions, 2016-YTD2023



Companies progress of technology investments, 2023

39% of leading companies are reporting full benefit realization of AI, compared to 19% of non-leaders



Key deals

Mar'22 Microsoft — US$18.8b M&A — NUANCE

Microsoft bought Nuance, a leader in healthcare AI. 'AI is technology's most important priority, and healthcare is its most urgent application,' said Microsoft CEO Satya Nadella.

Sep'21 Panasonic Group — US$7.1b M&A — BLUE YONDER

Panasonic bought US AI software provider Blue Yonder to combine the company's AI-powered planning, execution and commerce solutions with its sensing technologies and edge devices.

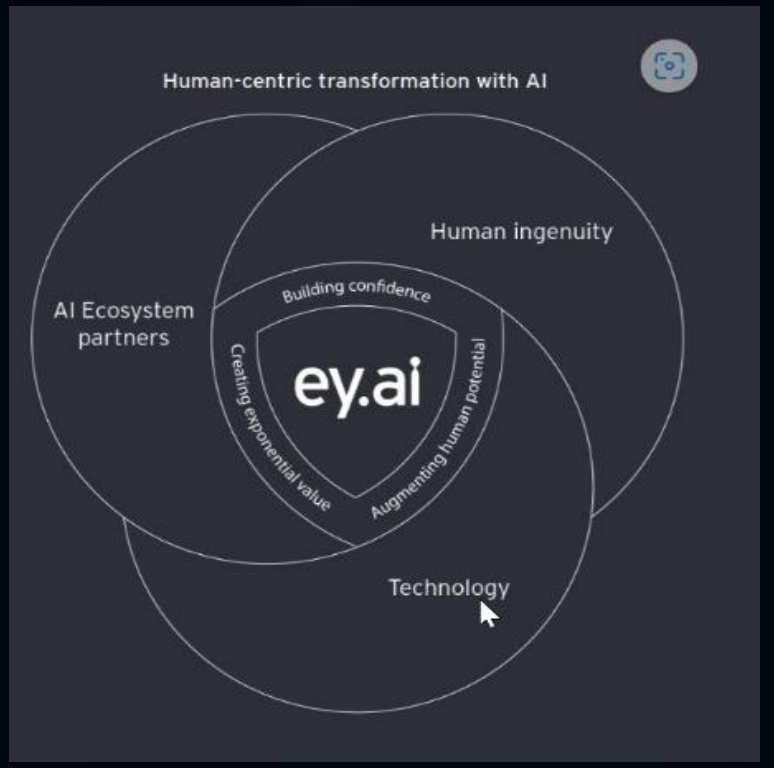
Investment growth drivers

- High adoption of AI (like ChatGPT) by firms and consumers
- Greater focus on data and tech advancement by firms
- A critical component of industries: healthcare, Consumer, automotive, finance
- Process efficiency and cost effectiveness

4 EY.ai

EY.ai is a multilayer offering platform that provides Confidence and one stop shop AI experience

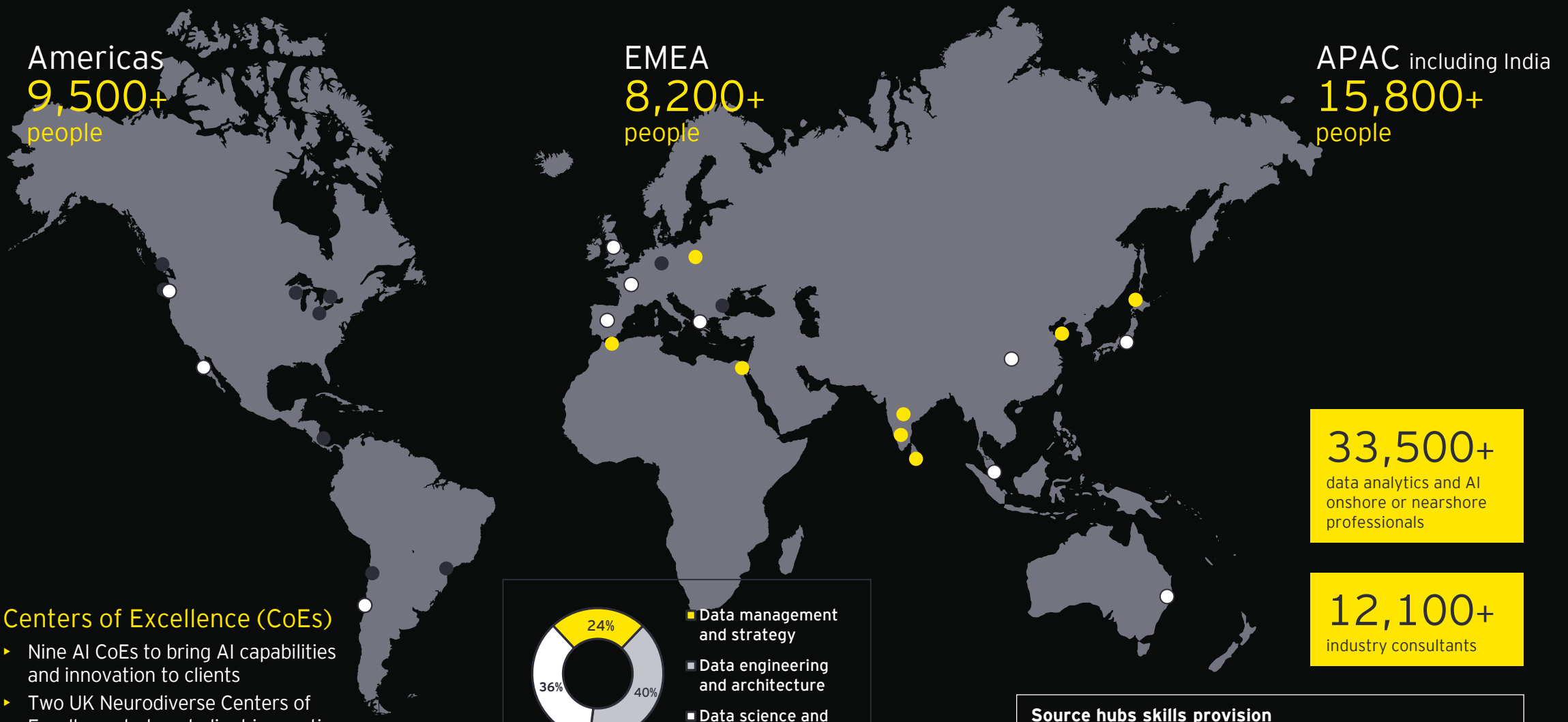
EY.ai is a unifying platform that brings together diverse, multi-disciplinary human capabilities, curated ecosystem partners, class-leading EY technology capabilities – Fabric- and management of the risks needed to build confidence in AI (ethical, regulatory and security challenges, trust and values).



The better the question. The better the answer.
The better the world works.

Building a better working world

Depth and breadth of Data and Insight Transformation EY talent



33,500+
data analytics and AI onshore or nearshore professionals

12,100+
industry consultants

Centers of Excellence (CoEs)

- Nine AI CoEs to bring AI capabilities and innovation to clients
- Two UK Neurodiverse Centers of Excellence to boost client innovation
- 15 NCoEs established globally

Source hubs skills provision

Global Delivery Services | Nearshore | AI CoE

05

The impact on GenAI on Companies

- Assess the Impact
  - Acceleration of the automation Journeys
  - Workforce/roles re-allocation
  - Legal and regulatory issues

What | Generative AI is reshaping the building blocks of the modern enterprise

Though generative AI will not replace corporate leadership, it does significantly enable them …

Operations
Streamline and automate processes, improving efficiency and reducing costs

Products & Services
Create customized offerings, enhancing customer satisfaction and driving innovation

Finance
Analyze vast amounts of data for forecasting, risk management, and decision-making in financial operations

People
Assist in talent acquisition, employee engagement, and training, optimizing HR processes

Marketing & Sales
Enhance customer targeting, personalization, and lead generation, for more effective campaigns

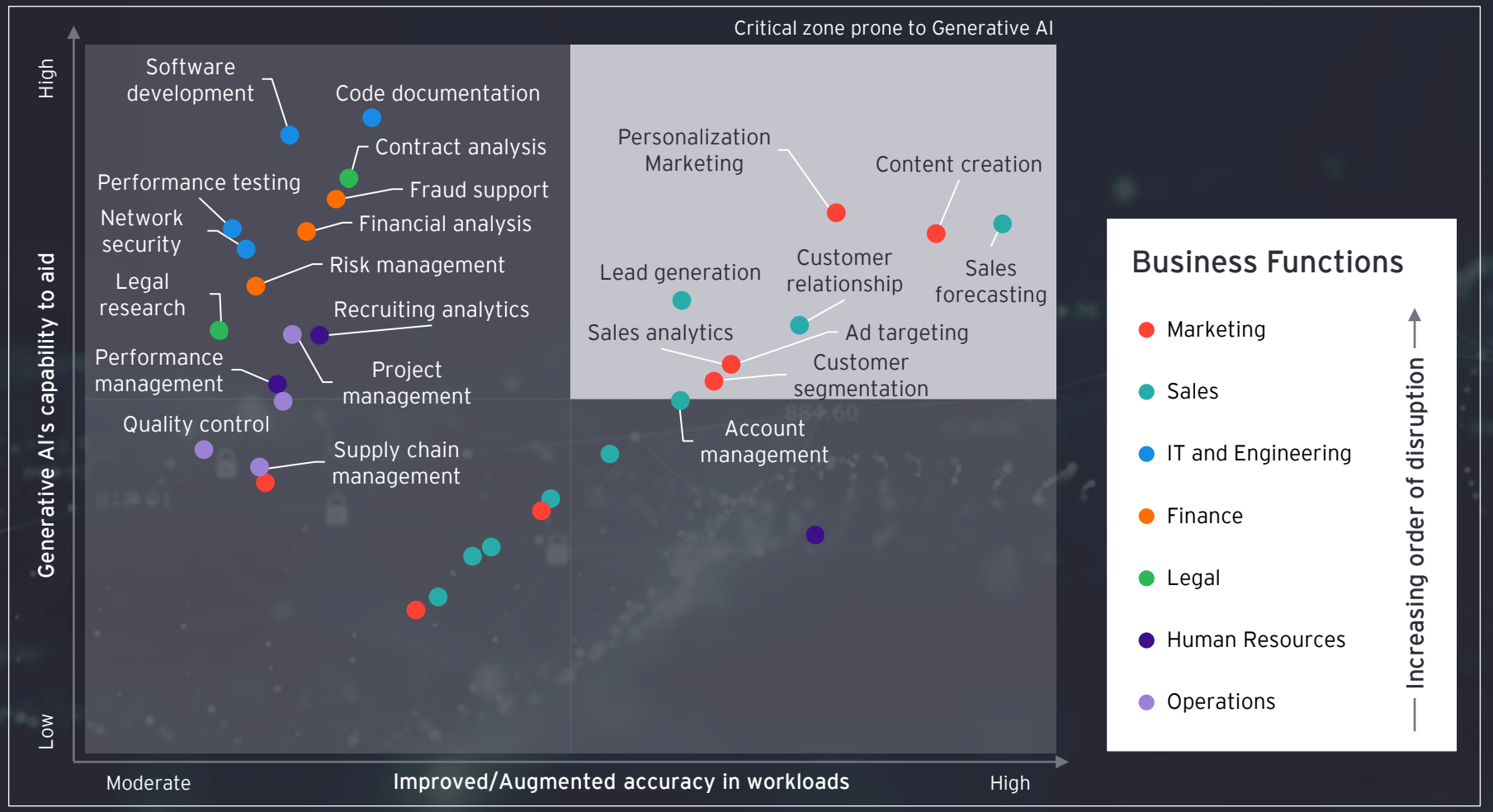
Technology
Advance automation, cybersecurity, and data analytics, driving innovation and improving technology performance

Legal & Compliance
Aid legal research, contract analysis, and compliance monitoring, increasing efficiency and ensuring regulatory adherence

Research & Development
Generate new ideas, simulate scenarios, and assist in the development of cutting-edge products

Workforce Impact (predicted)

The impact of Generative AI on the sub-segments of business functions



~37%

Of the US workforce in Advertising and Marketing[1] will see impacted workloads due to Generative AI.

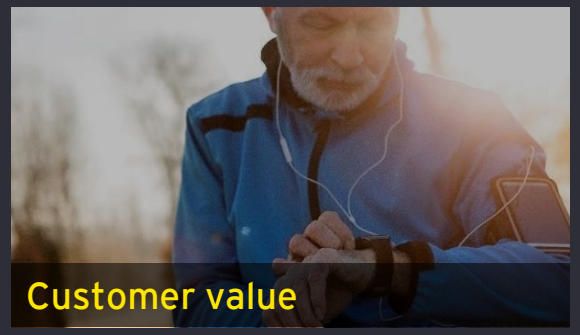
Sample job roles that are most impacted by Generative AI

Highly impacted job roles	Global Talent Size
Social Media Marketing Manager	5 million
Public Relation Specialist	4 million
Business Development Executive	2 million
Marketing Associate	1 million

Marketing and Sales functions experience the highest degree of job role disruption due to Generative AI

Note: 1. Statista, The above business areas are not exhaustive and are based on Draup's research, insights from customer engagement, industry blogs, and whitepapers.
Source: Draup's internal analysis, Insights from Draup's customer engagements and surveys Draup analyses 16+ Million data attributes every day to help global HR leaders solve their challenges.

AI/GenAI adoption creates long-term value



Customer value

Customer trust
Gain competitive advantage by building trust with consumers and setting the right governance, ethical framework and security (example KPI: customer retention)

Customer experience and innovation
Using data-driven insights to deliver relevant, personalized and differentiated products and services to customers when and where they are (example KPI: net promoter score (NPS))

People value

Employee performance
Data-driven AI allows employees to focus on core activities, have the best possible experience and construct fact-based, trusted performance management tools

Improved organizational agility
Through access to real-time, accurate and comprehensive data and analytics to reduce decision-making time

Societal value

Economic, social and environmental impact
Using data and analytics to optimize business decision-making, improve efficiency and facilitate data-driven innovation

Ethics
Putting in place controls and governance to maintain the ethical use of data (example: avoiding recruitment bias using AI)

Reducing digital inequality
Sharing data to promote transparency in social impact

Financial value

Cost reduction and margin and productivity improvements
Based on hyper-automation, access to real-time, accurate insights and a trusted data fabric

Revenue growth
Identifying new customer segments and patterns to drive revenue or expand product or service portfolios

6 Risks and Regulations

AI Risk Taxonomy

High-level Overview of Risks Associated with AI Use Cases

Data Risk

- ***Data Management Risk:*** inadequate data management activities resulting in gaps in data quality
- ***Data Ethics Risk:*** risk of ethical and societal harm resulting from the improper collection, handling, or utilization of data.

Model Risk

- ***Model Methodology Risk:*** inappropriate model design, data/feature selection, or algorithm/model selection, or lack of model explainability for black box models etc.
- ***Performance Risk:*** erroneous, unreliable, toxic outputs, and potential performance deterioration over time
- ***Model Ethics Risk:*** unethical behavior of AI models, including biased outputs, lack of transparency and sustainability
- ***Model Implementation Risk:*** improper deployment and integration of AI models into broader system
- ***Model Usage Risk:*** inappropriate or unintended use of AI models or model outputs

Cyber Security Risk

- ***Cyber Attack:*** deliberate and malicious activities by external threat actors on the AI use cases
- ***Data Breach:*** unauthorized access, disclosure, or mismanagement of confidential data
- ***Data Loss:*** Unintended mishandling or deletion of data
- ***Unauthorized Access to AI use cases:*** unauthorized or inappropriate access to AI use cases

IT Risk

- ***Hardware Failure:*** failure of hardware components that supports the development and production of AI use cases
- ***Software Failure:*** software malfunctions or failures within the IT system related to the AI use cases
- ***Network Failure:*** malfunction or failure of the organization's network infrastructure which can impact the performance and responsiveness or disrupt the functioning and availability of the AI system

Third-Party Risk

- ***Subcontracting Risk:*** inadequate due diligence in subcontractor selection, lack of control over subcontractor activities, or failure to establish clear contractual obligations for the use of third-party service for the development and production of the AI use cases
- ***Third Party Concentration Risk:*** lack of diversification in third-party relationships resulting in high level of dependencies on a limited set of third parties

Compliance Risk

- ***Privacy Risk:*** improper handling, disclosure, or misuse of individuals' personal identifiable information (PII) due to inadequate data protection measures or security breaches.
- ***Regulatory Compliance Risk:*** failure to adhere to applicable laws, regulations, or industry standards

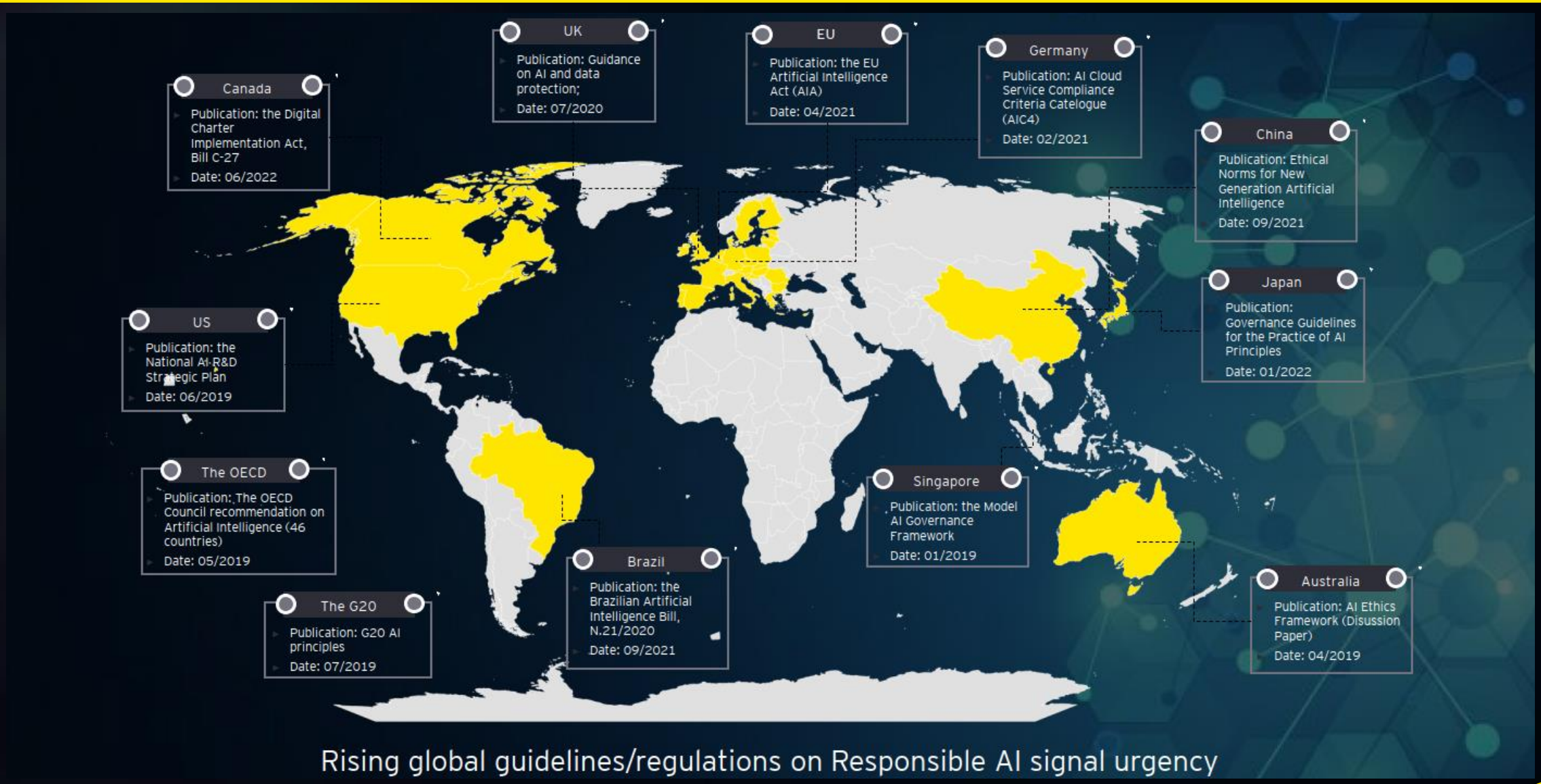
Legal Risk

- ***Legal Risk:*** risks of lawsuits, fines, penalties, imprisonment of officers/employees due to failure to comply with legal (e.g., copyright infringement), regulatory or contractual obligations

People Risk

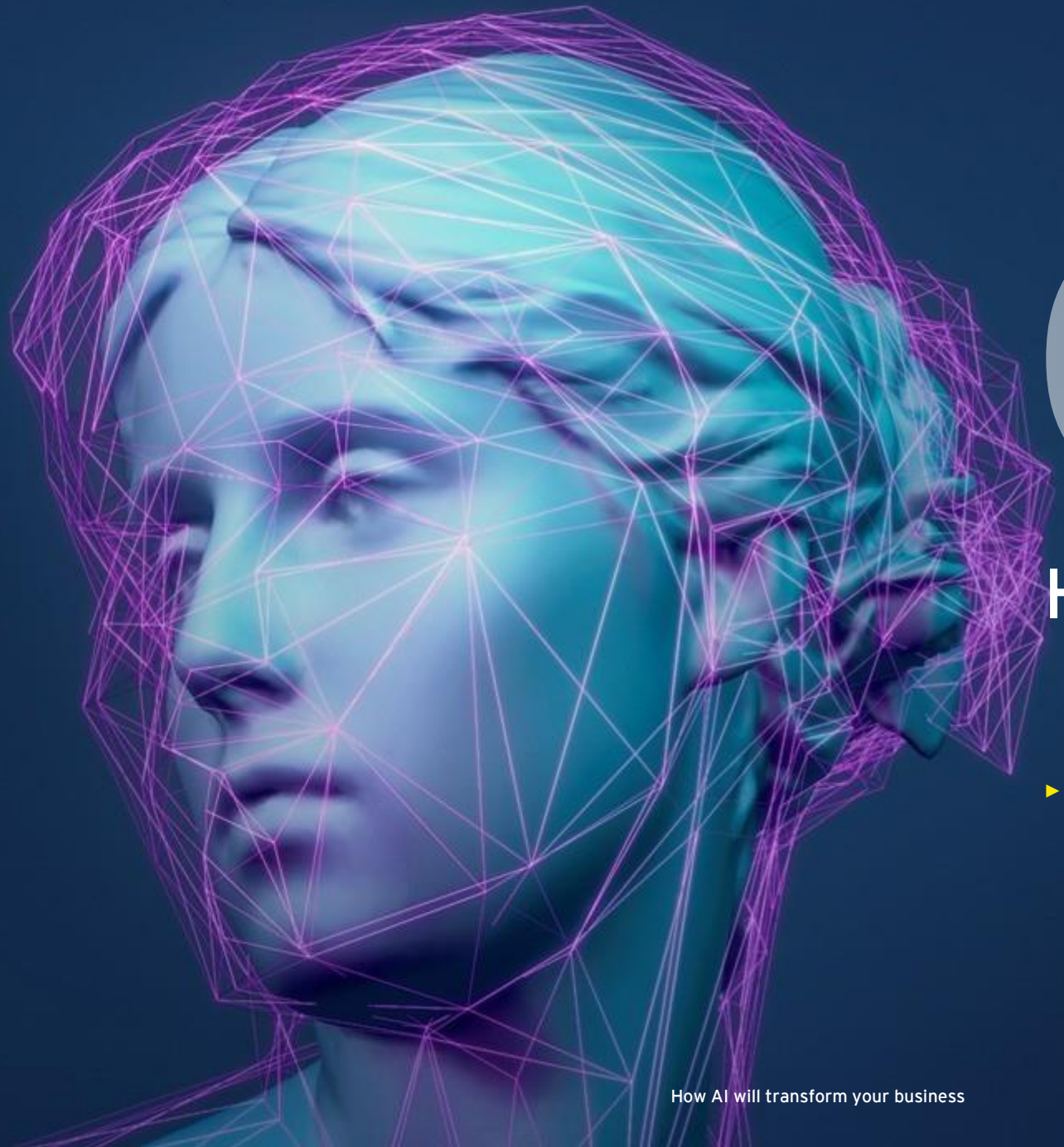
- ***AI Adoption Risk:*** challenges and obstacles in the successful adoption and integration of AI technologies due to resistance to change or inadequate training

AI Evolution has triggered multiple regulations across the world



Key (new) provisions of the AI Act – December 2023

- **General Purpose AI** (includes foundation models and GenAI)**:**
  - Transparency requirements for all GPAI (e.g., technical documentation; training data summaries)
  - Additional requirements for high-impact models with systemic risk (model evaluation, mitigate systemic risk, document & report incidents to EC, “red-teaming”, cyber- & physical security, energy consumption)
  - Generative AI: individuals must be informed when interacting with AI; AI content must be labelled and detectable
- **Examples of High-Risk AI systems include:**
  - Access to services (e.g., insurance, banking, credit, benefits), Recruitment, HR and worker management , Education and vocational training, Critical infrastructure, Biometric identification
- **Key new requirement for High Risk AI systems:**
  - **Fundamental rights impact assessment** and **conformity assessment** required
- **Prohibition:** Systems that are banned include:
  - **biometric categorisation systems that use sensitive characteristics** using sensitive characteristics
  - **untargeted scraping of facial images** for facial recognition databases;
  - **emotion recognition** systems used in the workplace and educational institutions;
  - **social scoring based** on social behaviour or personal characteristics;
  - AI systems that **manipulate human behaviour** to circumvent their free will;
  - AI used to **exploit the vulnerabilities of people** (due to their age, disability, social or economic situation).



07

How to get started

- The need for a trusted expert guide
  - Define/Redefine AI adoption strategy
  - Define AI Governance for the organization
  - Track emerging regulatory frameworks
  - Prioritize use cases and prototype
  - Deploy technology quickly
  - Train the workforce on the new tools and technologies

Promise of Happy Endings

Early and Quick Adoption

- A radical, revolutionary move
- Requires significant investment: effort, resources and funding
- Will hit many hurdles:
  - Technological as the tech landscape is quickly changing
  - Regulatory as the legal and regulatory frameworks national and international are still evolving
  - Security, IP and Data issues emerge that have not been tackled before
- Will cause labor force changes and disruption
  - Adapt to new types of work and roles
  - Learn new skills quickly

Wait till later; Stick to original automation plan

- It will take took longer than competitors to take advantage of new Tech
  - Losses in market share,
  - Losses in revenue & profits
  - Reduced quality of service to customers
- Labor force changes and disruption
  - Loss of talent to competitors
  - New talent will need to be attracted
  - Adapt to new types of work and roles
- Significantly larger investments with accelerated urgency

Will it work in the end?
Yes, because the new AI technologies are truly transformative when applied correctly and if you make the investment judiciously

The Golden Thread – How to get there fast while minimizing risks

Know the facts

- New AI tech can generate content
- Comes pretrained for a variety of tasks
- A huge investment in the area will transform the markets

Assess the Impact

- Acceleration of the automation Journeys
- Workforce/roles re-allocation
- Legal and regulatory issues
- IP and Cybersecurity

Decide what to do

- Define/Redefine AI adoption strategy
- Define AI Governance for the organization
- Track emerging regulatory frameworks
- Prioritize use cases and prototype
- Deploy technology quickly
- Train the workforce on the new tools and technologies

We have built and deployed AI offerings to support our clients with their business transformation

Supporting our clients in Business transformation while building Trust and Confidence

01

AI Strategy and Roadmap

A roadmap for value creation through business model or operating model transformation balancing risk and reward

02

Governance and Responsible AI

Governance, Process, Procedures, Audits and enablement of risk management for AI

03

Transformation with AI

Prototype, Build, Scale and Deliver human-centric business transformation

04

AI-powered EY Solutions

Infuse AI into EY Solution Offerings

05

Innovation as a Service

Co-innovation with clients in EY environments

06

Board and Employee Training and Upskilling

Driving AI Literacy across all levels

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