



Deloitte Boardroom Programme
Board Agenda Series 4
– Implementing Trustworthy AI

Monday, 21 October 2024



Today's presenters



Boardroom Programme
Sponsor
cmcdonnell@deloitte.ie

Colm is a partner in our Risk Advisory practice in Deloitte Ireland specialising in security risk, regulatory and control assurance. Colm is the lead partner with several key clients and more recently heads up the Technology, Media and Telecomms practice in Ireland. He leads the Deloitte engagement with the non-executive director community and the Deloitte Boardroom Programme. Colm spent 9 years on the Board of the Dublin Chamber of Commerce and during this period served for six years as Treasurer. He is presently a Board member of Barretstown. Colm has been an Authorised Officer for the Central Bank of Ireland, and he is currently working for several institutions in reaction to Central Bank driven requirements.



Emmanuel Adeleke
AI Lead
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Emmanuel (Manny) Adeleke is a partner in Consulting, leading the delivery of AI and Data services across Ireland. In this role, he is responsible for leading, scaling, and delivering Deloitte's offerings and services to drive impact for our clients across all sectors and industries. Emmanuel is highly experienced in the end-to-end delivery of insights-led change and transformation programmes, having played a lead role across some of Ireland's most high-profile programmes over the last few years. His experiences span strategy development, delivery of digital and data analytics solutions / programmes, operating model and change management.



Colin Melody
AI & Data Team
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Colin is a Director in the Artificial Intelligence and Data (AI&D) team within the Deloitte. He has over 10 years working in AI & Data supporting clients in defining and building their AI and Data strategy and capabilities ensuring they have the right focus across data, technology, people and processes in order to maximise their use of data and AI to bring value to the organisation in a trustworthy and ethical way.



Laura Skelton
Digital Trust & Transparency
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Laura advises a variety of clients across different sectors on areas such as data protection, privacy maturity assessments, DPIA engagements, policy reviews and training and gap analysis assessments. Laura also provides co-sourced internal audit privacy supports for multinational clients. Prior to joining Deloitte, Laura was Head of Corporate Affairs for a large national sporting governing body, with a tenure of over 16 years. She acted as the company's Data Protection Officer, Freedom of Information Officer and IT Lead Co-Ordinator.

AI Readiness

Emmanuel Adeleke | AI Lead | Partner

AI Quiz

Question #1: Which picture was actually generated by AI?



AI Quiz

Question #1: Which picture was actually generated by AI?



AI Quiz

Question #2: Which Taylor Swift lyrics were generated by AI?

1

And all I feel
In my stomach is
butterflies,
The beautiful kind,
making up for lost time.

2

Whispers in the rain,
memories collide, your
name echoes, in the
tears I hide.

3

Paper planes and
broken dreams, chasing
after what could've
been, but darling, we're
just lost in between.

AI Quiz

Question #2: Which Taylor Swift lyrics were generated by AI?

1

HUMAN

And all I feel
In my stomach is
butterflies,
The beautiful kind,
making up for lost time.

2

GENERATIVE AI

Whispers in the rain,
memories collide, your
name echoes, in the
tears I hide.

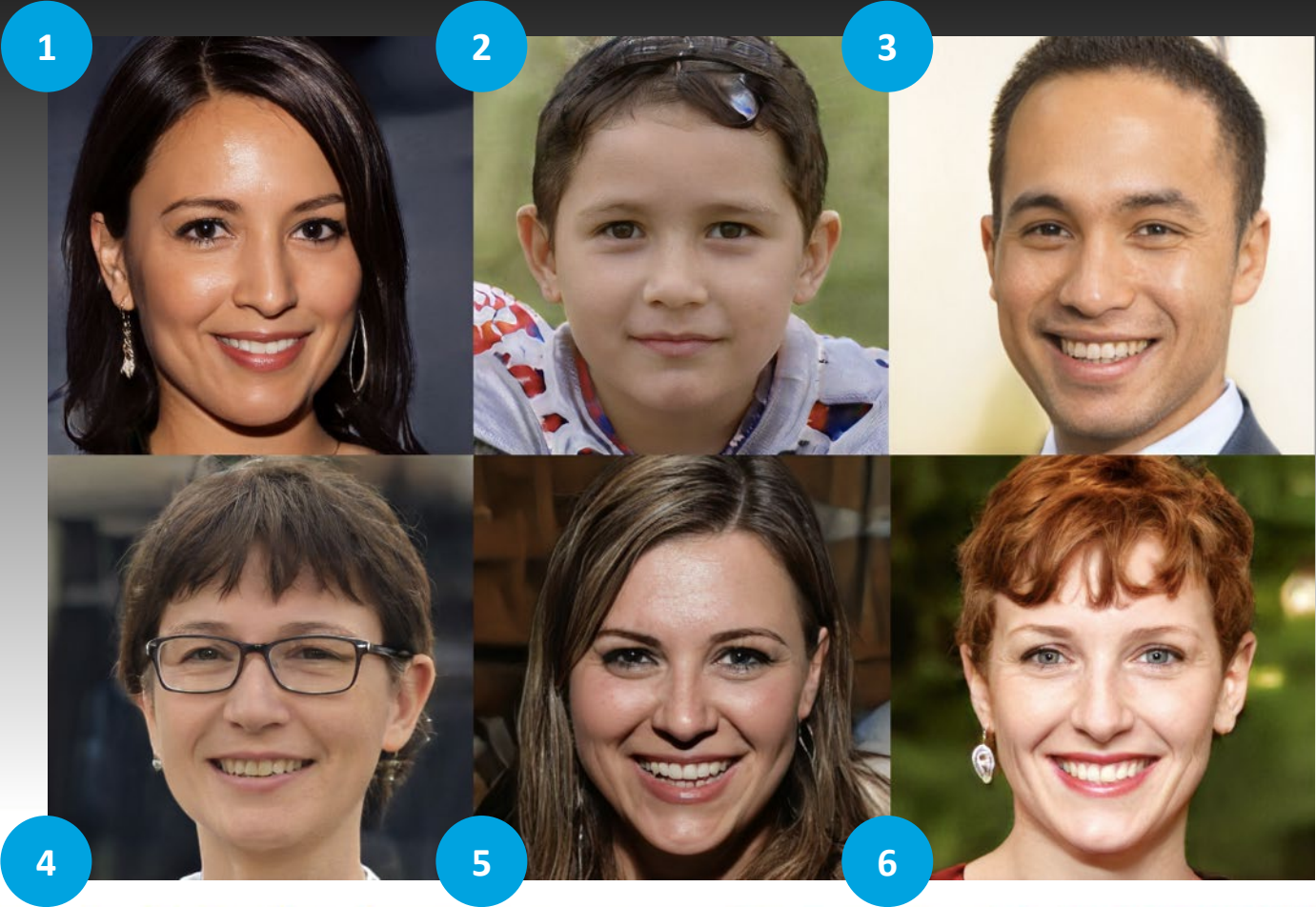
3

GENERATIVE AI

Paper planes and
broken dreams, chasing
after what could've
been, but darling, we're
just lost in between.

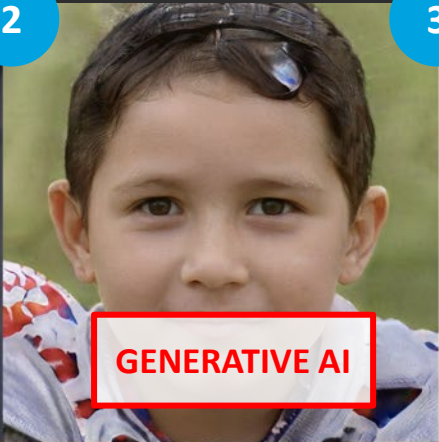

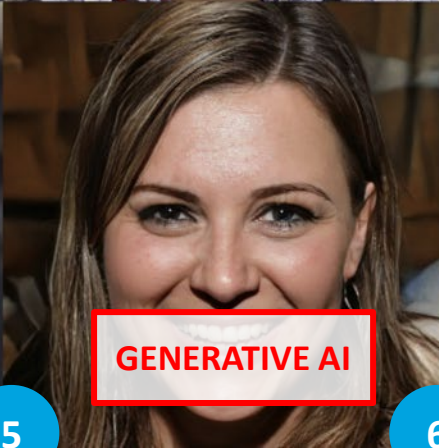

AI Quiz

Question #3: Which of the following pictures were created through generative AI?



AI Quiz

Question #3: Which of the following pictures were created through generative AI?

1	 <div>GENERATIVE AI</div>	2	 <div>GENERATIVE AI</div>	3	 <div>GENERATIVE AI</div>
4	 <div>GENERATIVE AI</div>	5	 <div>GENERATIVE AI</div>	6	 <div>GENERATIVE AI</div>

AI Evolution

AI's progression from task automation to advanced Generative AI in the last 18 months, signifies a major leap forwards in AI's capabilities

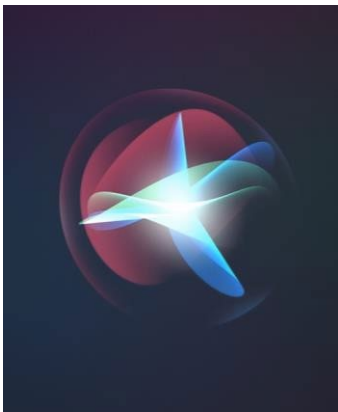
Generative AI evolution

Breakthrough from predictive to probabilistic model

Lowering barrier access to the wider audience



First AI win against top human talent



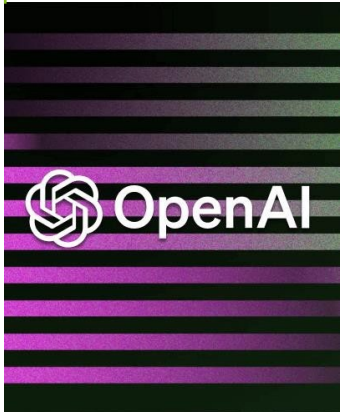
iPhone owners begin to leverage AI in their daily routines



First public demonstration of artificial creativity



First case of mass social media adoption of generative AI



Chat GPT -the fastest-growing consumer internet app ever



Image generation - King Charles coronation, the day after

1997

Deep Blue (Explainable AI)

2011

Siri (Conversational AI)

2016

AlphaGo (Explainable AI)

2022

Lensa (Generative AI)

2022

OpenAI Chat GPT

2023

Midjourney

AI Evolution

2023 was the year of acceleration for Generative AI where a battle between the Tech giants unfolded

Generative AI evolution

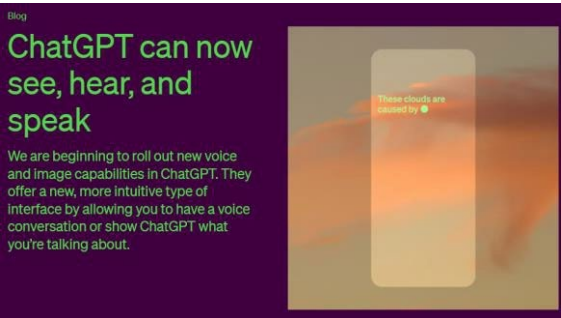
2023



GPT 4 - more nuanced and accurate text, context-aware responses



New language model with improved multilingual, reasoning, and coding capabilities



Chat GPT is now capable of transcribing audio, replying in audio, analyze and generate images



A “natively multimodal” model, which can learn from data beyond just text, but also from audio, video, and images

Feb

Meta introduces Llama

March

OpenAI introduces GPT 4

May

Google introduces PaLM-2

Nov

xAI Introduces Grok

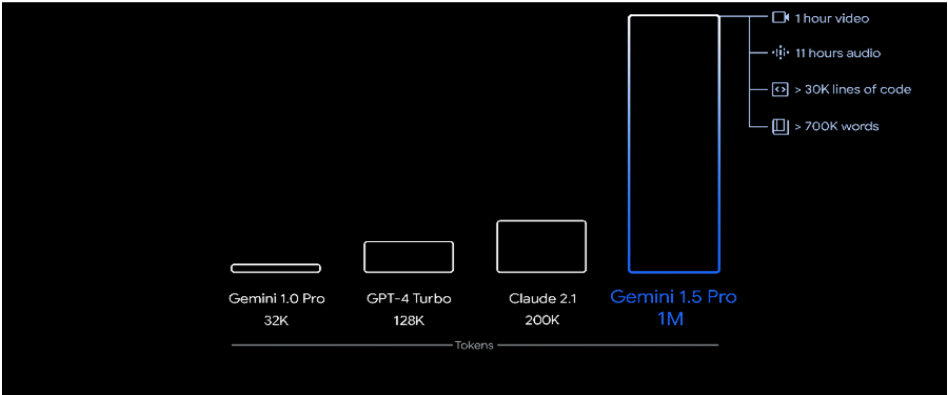
Dec

Google introduces Gemini

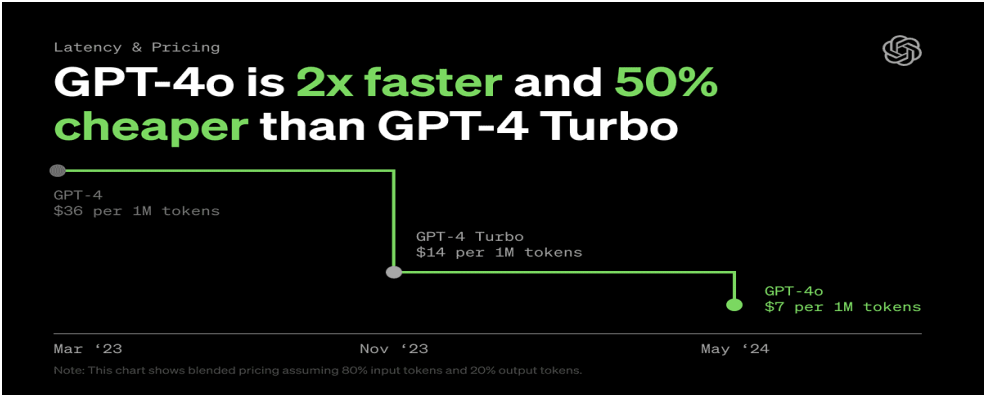
AI Evolution

2024 was a year of refinement and advancement in existing Generative AI technologies

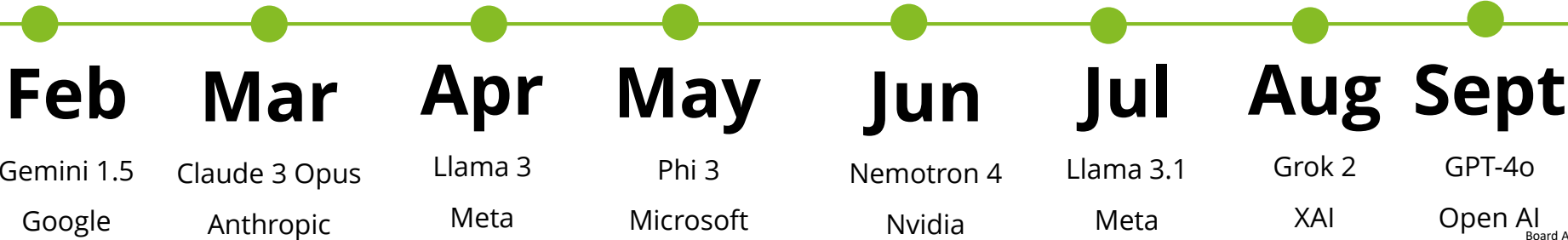
2024



Gemini 1.5 Pro is introduced with a context window of up to 1M tokens, vastly increasing the scope of possibilities.



OpenAI release GPT-4o faster and less expensive than GPT-4 Turbo



AI Modalities

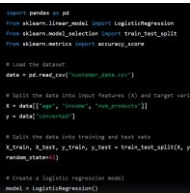
Multi-modality means that Generative AI can generate visual, audial, textual, 3D and programming language content

Text



Prompt: Why should I use Generative AI?
Using OpenAI's ChatGPT

Code



Prompt: In python, code a program that predicts the likelihood of customer conversion
Using OpenAI's Codex

Image



Prompt: Close shot from below of a pot on gas stove
Using OpenAI's DALL-E2

Video



Prompt: Create a video of a cow eating grass on a farm
Using Google's Dreamix

3D



Prompt: Sydney opera house, aerial view
Using NVIDIA's Magic 3D

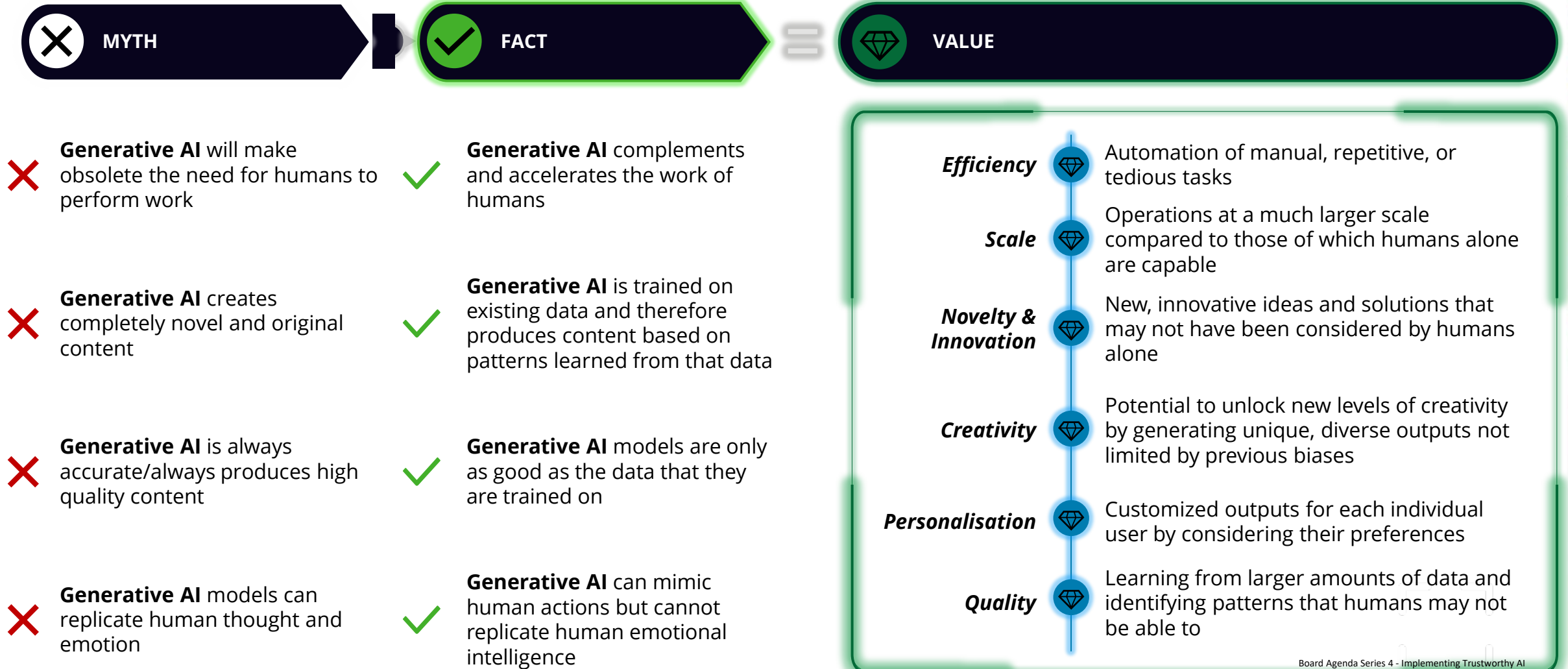
Audio



Prompt: Translate the script of the digital twins commercial to Dutch
Using Vall-E 2 by Microsoft

There are always myths associated with new technologies, we sort them from the facts

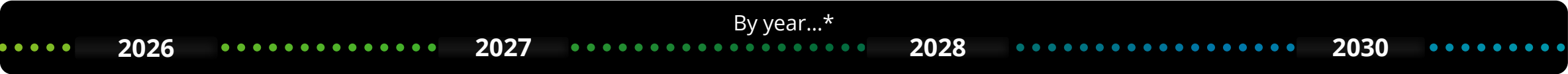
We understand there might be nervousness around starting your journey, but don't let the myths delay you from capitalising on Generative AI's value



Future Looking

Based on 500+ Generative AI projects to date, industry research and engagement with external analyst groups, regulators, and industry CEOs.

Between 2023 and 2027, **\$3 Trillion dollars** will be spent on AI*



80% of enterprises will use GenAI API's and/or GenAI Apps by 2026



36% of total AI Spending will be on GenAI



16% of total IT spending will be on AI



50% of the GenAI models used by enterprises will be Private/Domain-specific



33% of customer interactions will invoke Autonomous Agents / Digital Avatars powered by GenAI to achieve tasks by 2028



20% of repetitive processes will be automated by Private / Domain- specific LLM implementations in every industry by 2028



100% of global IT spending will be directly on AI or indirectly supporting AI



100% of IT development will incorporate AI in the design, development, testing



Every dollar of GDP, created anywhere on the planet, will be influenced by AI



Every person in an industrialised country will have an interaction with at least one AI instance every single day

*Gartner: 2024 – the year of the AI plan; Gartner: Emerging Tech Impact Radar (November 2023)

Market Trends

"The State of Generative AI in the Enterprise: Now decides Next," is based on a survey of 2,770 director- to C-suite-level respondents across 14 countries

1

Market Moving from Experimentation to Scaling

- Two-thirds reporting their organization is increasing its investment in GenAI due to strong value to date
- (68%) have moved 30% or fewer of their GenAI experiments fully into production.

2

Embedding GenAI into Functions & Processes

- Most value is expected to be from deeply embedding GenAI into functions / processes
- Least value was expected by providing broad access to GenAI to the workforce.

3

Modernising Data Related Capabilities

- Data-related issues are causing 55% of surveyed organizations to avoid certain GenAI use cases
- Organizations are enhancing data security (54%); improving data quality practices (48%); and updating data governance frameworks and/or developing new data policies (45%).

4

Mitigating risks and preparing for regulation

- Despite increasing expectations for transformational impact, data, scaling and risk challenges are limiting options and tempering leadership enthusiasm.
- Three of the top four reported barriers to successful GenAI deployment are risk-related.

5

Maintaining momentum by measuring value

- (54%) of organizations are seeking efficiency and productivity improvements, yet only 38% are tracking changes in employee productivity.

AI – State of the Nation

Colin Melody | AI & Data Team | Director

10 key decision points needed for AI success

Considerations across **Strategy** **People** **Process** **Data** and **Technology** will be critical for scaling Generative AI successfully.





PATH TO VALUE

What is your AI strategy?

Your strategy should be clear on the value it wants to realise and where – it should be clear on the route you will take to get there through considered, achievable action

Is your Strategy aligned to your IT and Data Strategies and driven by your overall Business Strategy and Goals?

What's your route?

How will you enter?

What's critical?

What's your value play?

The opportunity for GenAI value add is extensive, but tapping into all areas, all at once will overwhelm your GenAI strategy and saturate the potential value each initiative could realise. ***Be clear about what you are playing for to bring clarity to how you are going to play***

Efficiency, Scale, Novelty & Innovation, Creativity, Personalisation, Quality

What is your Business Case?

Considerations the below 6 areas

Economic Viability

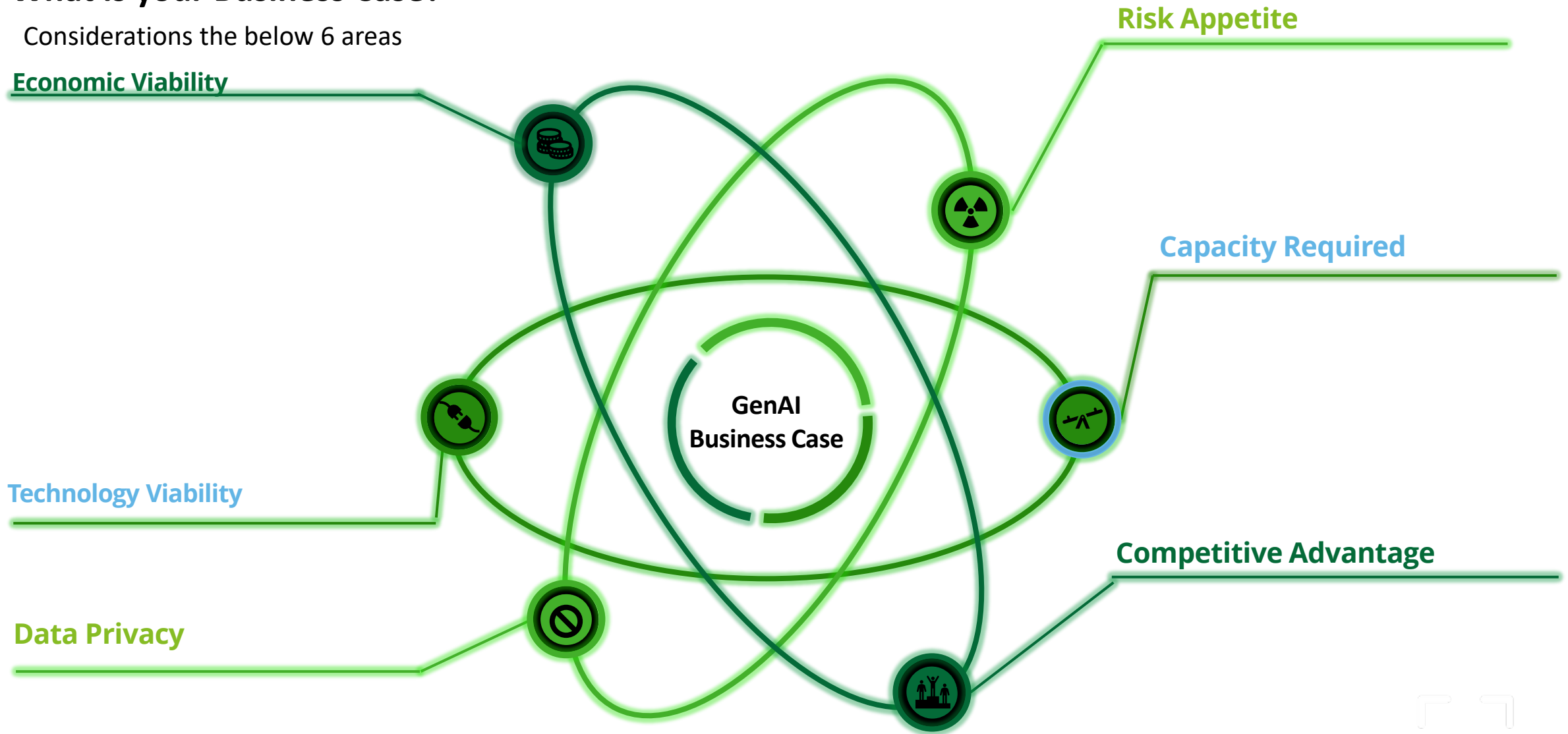
Risk Appetite

Capacity Required

Technology Viability

Competitive Advantage

Data Privacy



Do you have sponsorship and buy-in

Sponsors

Impactful change to occur it must come from the top,

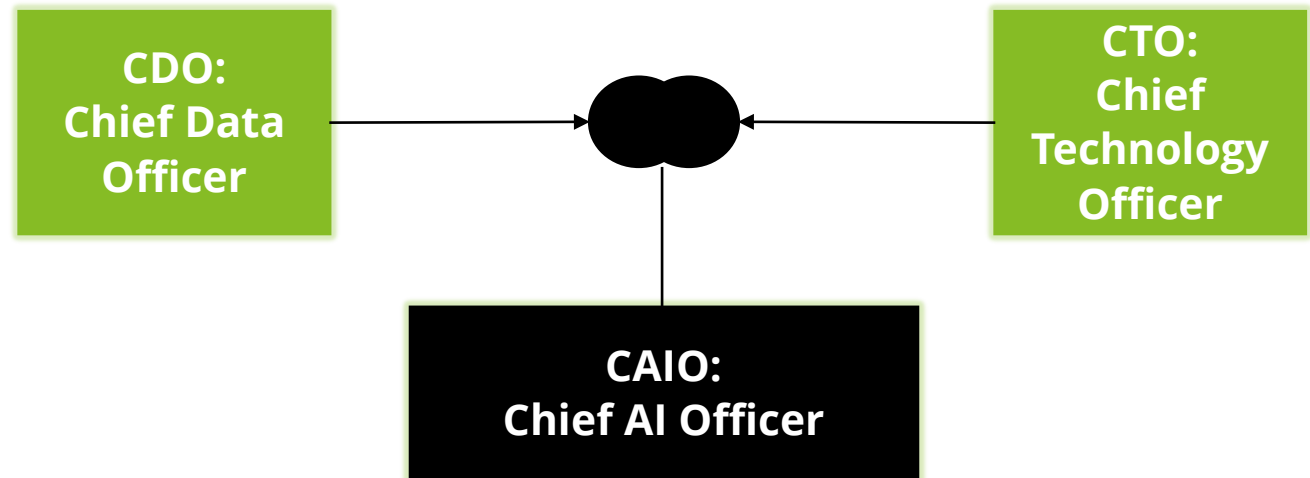
CEO level sponsorship for Generative AI transformation programmes and initiatives is **absolutely critical**

Champions

Orchestrators

Executors

In many organisations, the ownership of the AI strategy and agenda can vary. It often falls under senior leadership, such as the Chief Technology Officer (CTO), Chief Data Officer (CDO), Chief Information Officer (CIO), or **Chief AI Officer (CAIO)**.

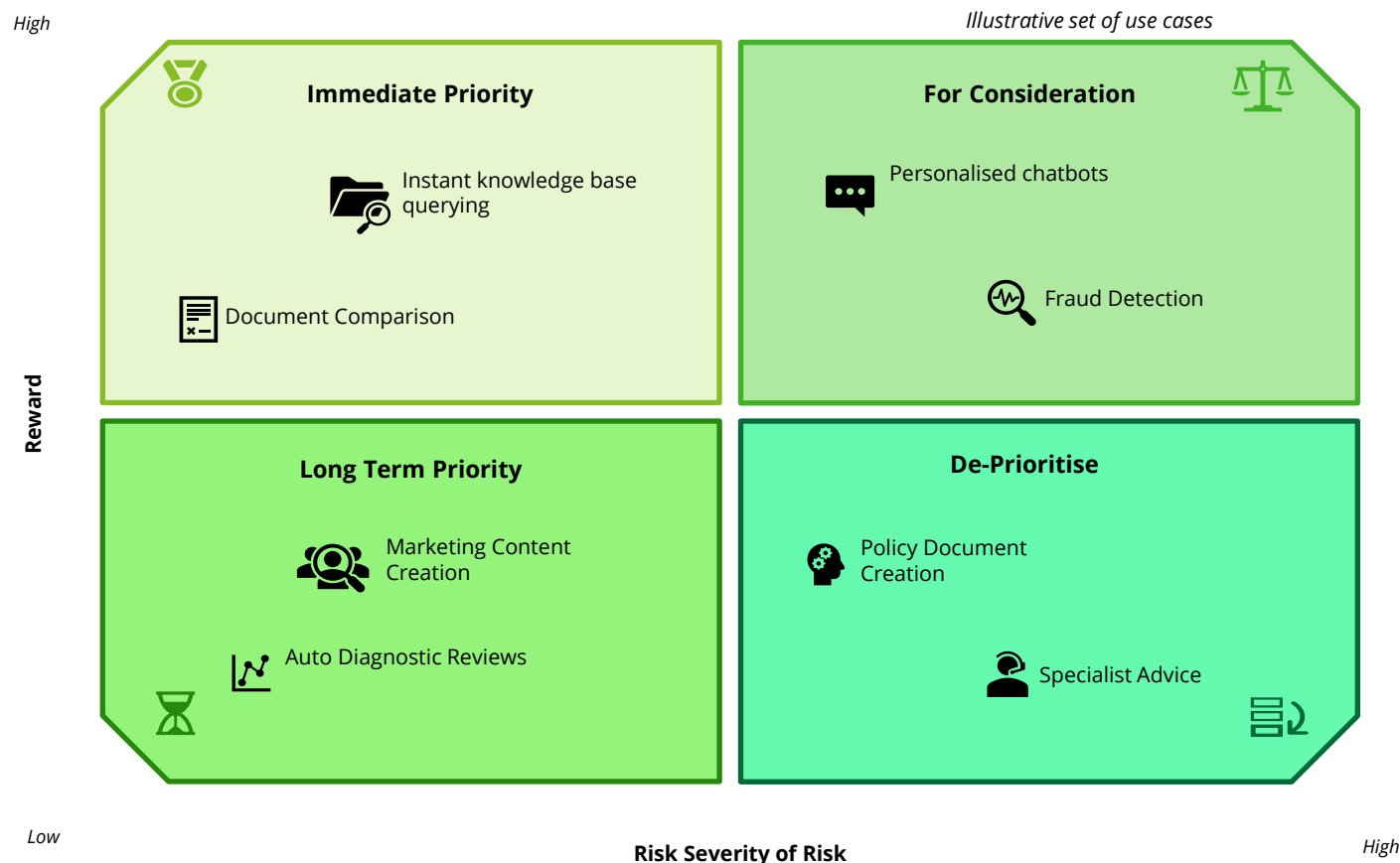


Every forward thinking organisation should have a Chief AI Officer. ”

Sulabh Soral, Chief AI Officer, Deloitte

Which use case should you prioritise?

Generative AI is vulnerable to bias and errors; therefore, it is best to use a Risk vs Reward approach when prioritising use cases



Considerations:

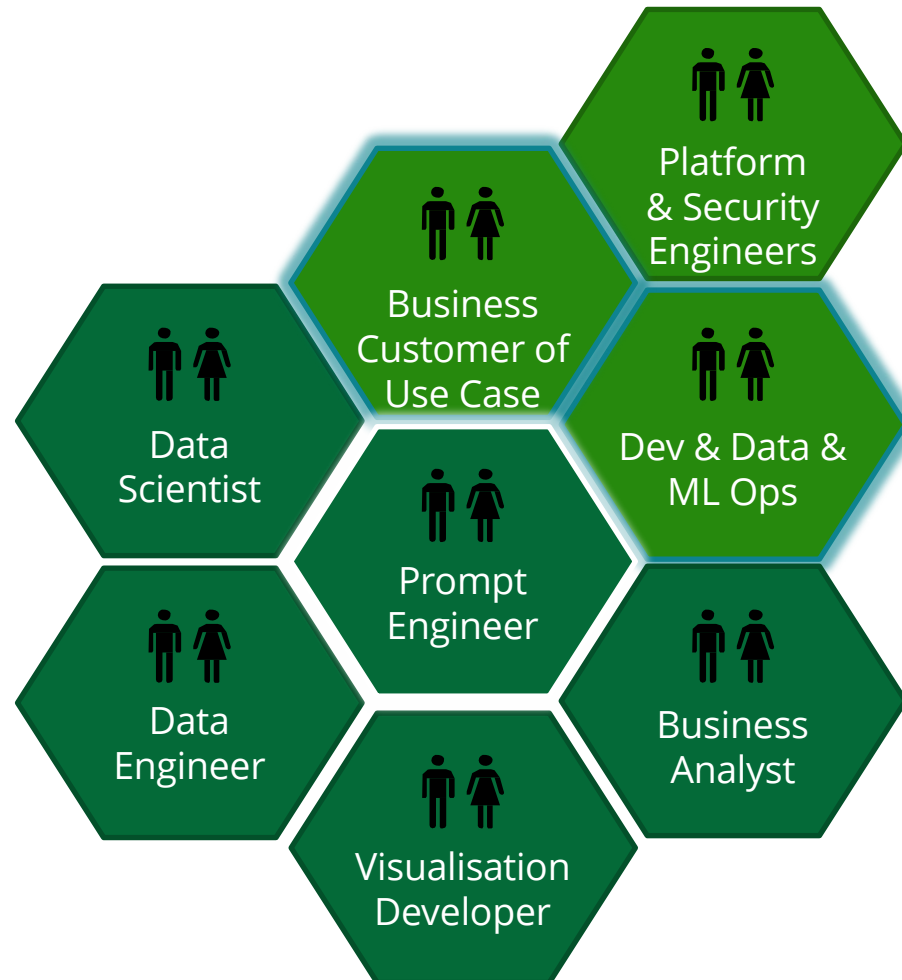
1. Is **GenAI** the **right tool** to solve your business challenge? Or can it be tackled using another data / analytics / AI solution?
2. What is the **financial viability** (e.g., investment and talent pool availability)?
3. What is the **technical viability** considering your existing tech stack?



PATH TO VALUE

How do I prepare my people for AI adoption?

What skills do I need to deliver AI capability?



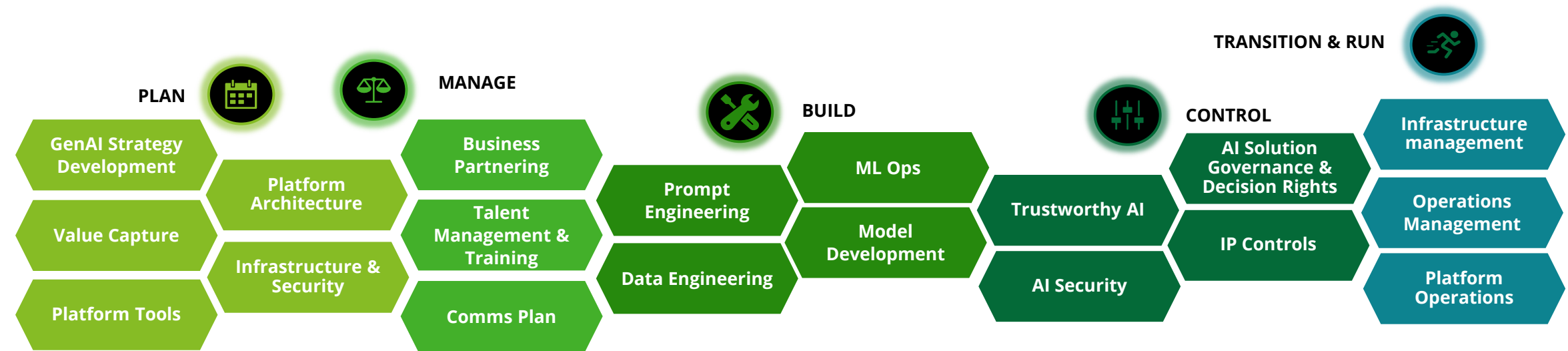
Have I communicated the organisations AI Strategy?

Does the organisation have an AI Fluency programme?

What core skills do I need my teams to have to use AI effectively?

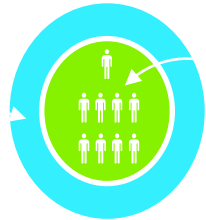
As tasks are automated and roles change how I am supporting reskilling?

How do will my operating model evolve?



'Centralised' Model

Business leverages GenAI solutions and feeds requirement to central hub



Central function delivers GenAI use cases

'Centre of Excellence' Model

Practitioners embedded in functions, delivering use cases



Central function sets standards, introduces best practices and manages training

'Dispersed' Model

Functions / BU deliver use cases with no central coordination





GET STARTED & REALISE VALUE

Data is a determining factor for your Generative AI success

In many ways the data management capabilities you have built for traditional analytics are required for GenAI, but key areas to dial up are quality, governance, availability and ownership clarity

Data Privacy & Data Sharing (Model training)

Data Availability (Scaling)

Data Governance & Ownership

Data Bias

Data Processing (Compute)

Data Storage

Data Security

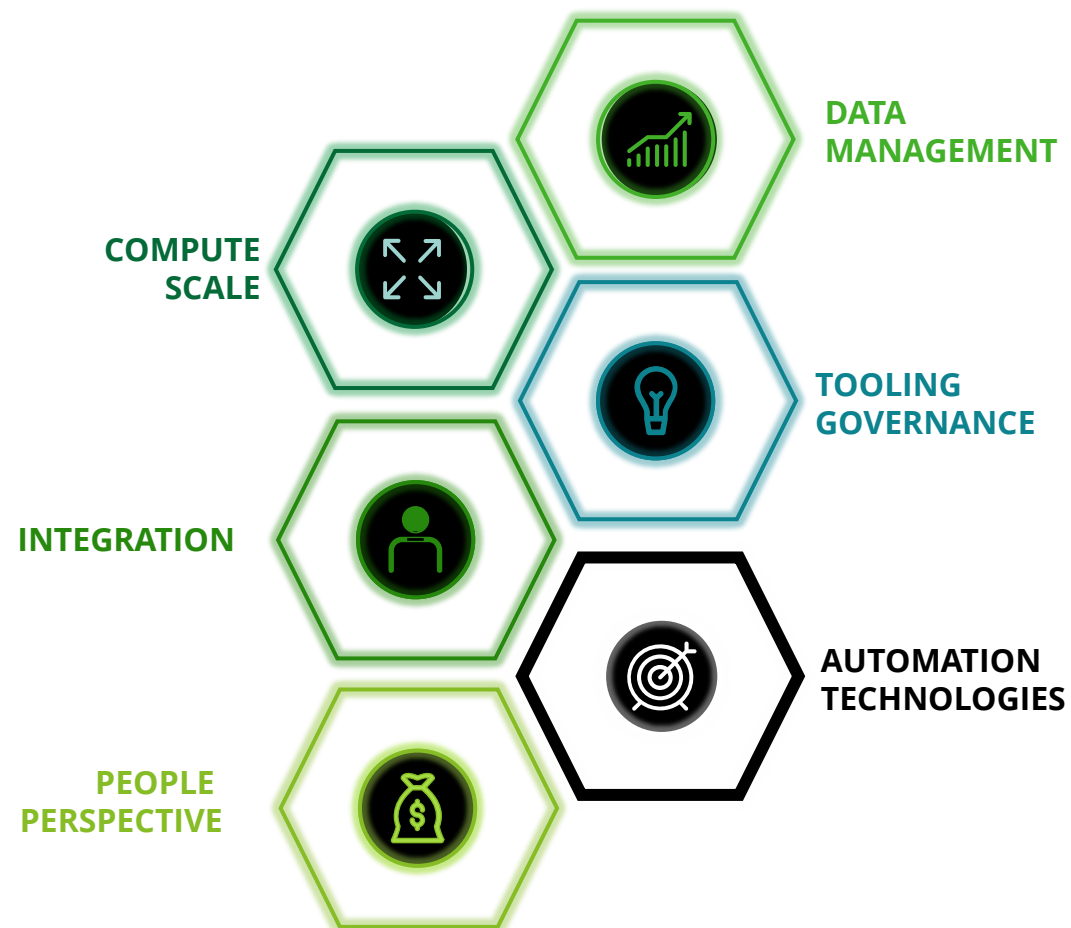
Model Data Sensitivity



GET STARTED & REALISE VALUE

Technology considerations

When delivering a AI solution, you need to scope out the technology required to deliver, monitor, evaluate and improve it – below are some of the considerations you should make in your investigation












HOW TO GET YOUR STACK RIGHT THE FIRST TIME

1. Ideate use cases across different value plays
2. Validate and prioritise using the reward vs risk framework, considering the financial and technical feasibility
3. Scope out the technology required to deliver, monitor, evaluate and improve your prioritised use case(s) with your existing tech stack in mind
4. Plan your use case delivery with the required controls and governance in place
5. Ensure required change management for connection of solution(s) into existing business technologies and ways of working for true value realisation

Roadmap Development - from Pilot to Implementation

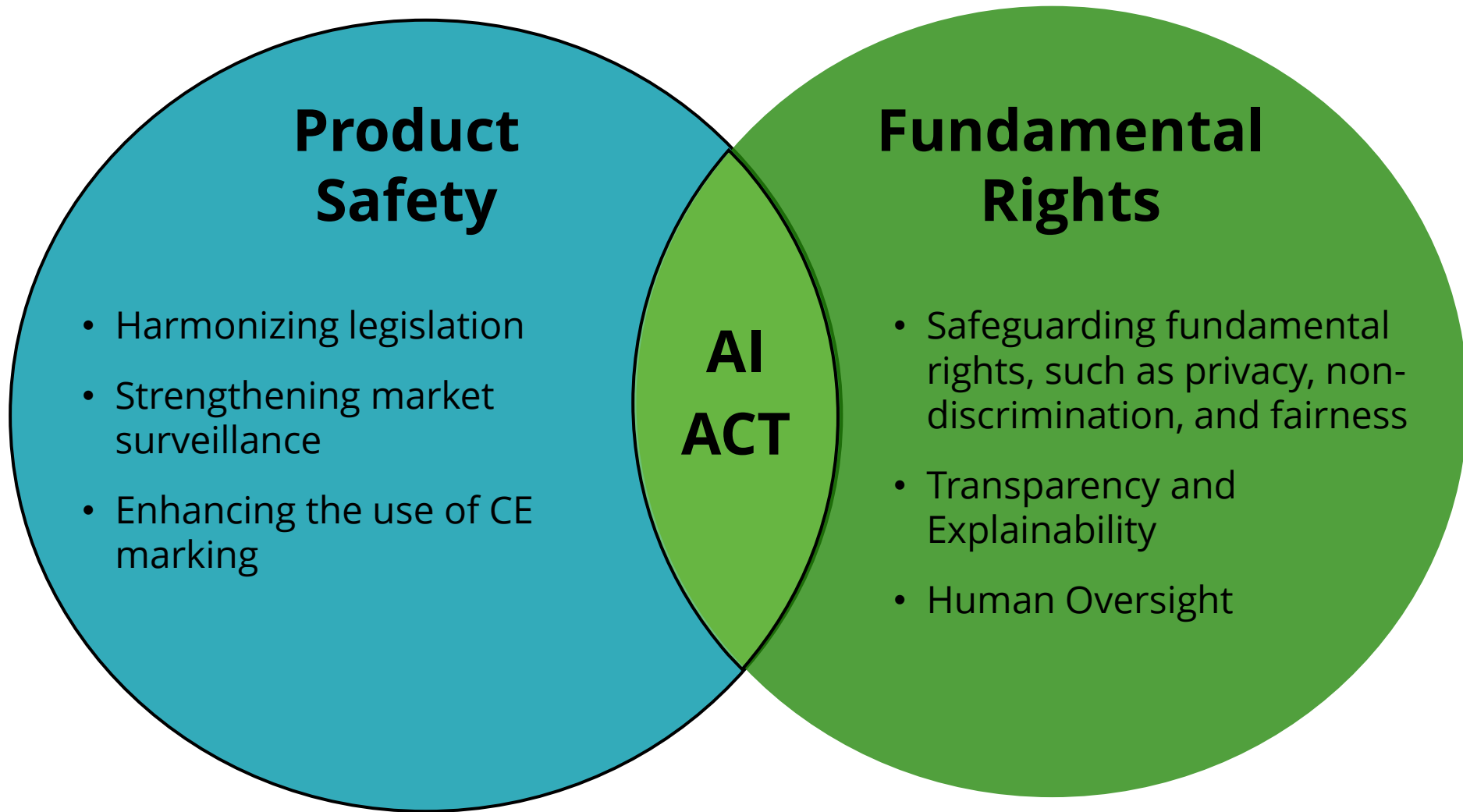
Building momentum around Indeed's AI program with a clearly defined set of next steps to support the AI vision to input to your AI roadmap and activate your stakeholder engagement plan.

PHASE 1: IDEATION			PHASE 2: INCUBATION			PHASE 3: INDUSTRIALISATION			
	Discover	Strategize	Prioritise	Pilot	MVP	Scale	Manage	Monitor	Advance
									
Ask	<p>What <u>use cases</u> will make a difference?</p> <p><u>What data sources are needed?</u></p> <p>Is this an AI or GenAI use case?</p>	<p>What's the business and technical feasibility</p> <p>How will the technical <u>design look like</u> (incl. constraints)?</p>	<p>Where are the <u>biggest</u> pain points?</p> <p>Where can we achieve <u>quick wins</u>?</p>	<p>What <u>data</u> is needed for in-context learning for the LLM?</p> <p>How do we generate the 'best' prompt?</p>	<p>How can I embed my validated use cases <u>into live processes</u>?</p> <p>What further enhancements can be achieved?</p>	<p>What's the roadmap?</p> <p>What <u>impact</u> it will have on technical architecture?</p>	<p>What <u>arrangements</u> are needed to support the model?</p> <p><u>Who will do this</u> and what skills they need?</p>	<p>What are <u>the risks</u> associated with the model?</p> <p>What <u>reporting</u> is useful and insightful?</p>	<p>What other <u>use cases</u> can benefit from this?</p> <p>How do we <u>govern</u> the model?</p>
Do	<ul style="list-style-type: none">Identify current pain pointsAssess principles and assumptionsAnalyse potential data sources (email, docs)	<ul style="list-style-type: none">Define technical, legal, ethical risks and agree controlsSketch out high level solutionDefine impact on 'status quo' & build roadmap	<ul style="list-style-type: none">Select pilot use casesAgree data requirementsGet agreed data sources (docs etc.)	<ul style="list-style-type: none">Extract and clean the dataEvaluate the prompt and model performanceBuild prototype on basic UI on top of the LLM	<ul style="list-style-type: none">Define success measures & KPIsFine tune LLM and expand scopeDevelop scalable infrastructure	<ul style="list-style-type: none">Integrate model into wider BAU architectureEstablish LLM OpsImplement continuous monitoring and logging	<ul style="list-style-type: none">Model evaluation and benchmarkingTraining & change managementHuman in the loop feedback	<ul style="list-style-type: none">Model risk managementModel monitoring automationExceptions handling and quality control	<ul style="list-style-type: none">Model innovation and expansionGovernance framework
Show	<ul style="list-style-type: none">Pain points	<ul style="list-style-type: none">High level solutionRisk controls approach	<ul style="list-style-type: none">Use casesData sources	<ul style="list-style-type: none">Working prototypeVerified results	<ul style="list-style-type: none">MVP scopeReporting created	<ul style="list-style-type: none">Scalable solutionLLMOps enabled	<ul style="list-style-type: none">RLHF enabled	<ul style="list-style-type: none">Model monitoring and risk management	<ul style="list-style-type: none">Model future roadmap

Implications of the EU AI Act for Directors

Laura Skelton | Data Privacy Team | Senior Manager

Understanding the EU Approach to AI Regulation



AI Value Chain

The AI Act recognises the intricate nature of the AI development process, which often involves multiple actors across various stages. This network of actors is referred to as the **AI value chain**



Providers

An organisation that develops an AI system or a General Purpose AI model that is made available in the EU



Deployers

An organisation which uses an AI system under its authority



Importers

An organisation which makes available in the EU, an AI system which does not bear its name or trademark



Distributors

Any organisation in the supply chain other than the provider or the importer that makes an AI system available in the EU



An organisation can potentially play multiple roles within the AI value chain depending on the specific context.

Determining Risk

The EU AI Act takes a **risk-based approach**, meaning the level of regulation applied to an AI system depends on the potential risks it poses to fundamental rights and safety.

Requirements for High-Risk AI

The **focus of the Act** is primarily on high risk systems, with **increased obligations** on technologies deemed high-risk

Examples of high-risk use cases:

- **Credit Scoring**
- **Biometric Identification Systems**
- **AI systems for the recruitment of individuals**

Requirements for Limited- Risk AI

Limited-Risk AI systems must comply with **minimum transparency** requirements that allow users to make **informed decisions**

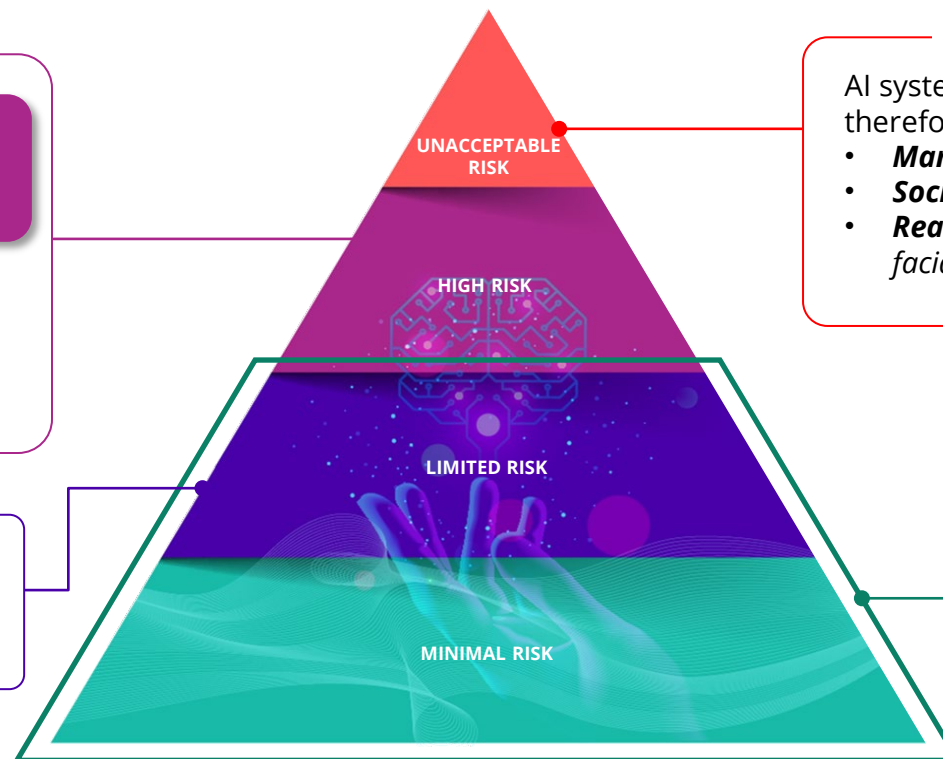
Characterisation for Prohibited AI Systems

AI systems are considered to pose an **unacceptable risk**, and therefore **prohibited**, when they pose a **threat to people**:

- **Manipulation of vulnerable people or groups**
- **Social scoring**
- **Real-time and remote biometric identification systems** (e.g., facial recognition)

Code of Conduct

Companies **can choose** whether to **adopt** a **code of conduct** to **ensure** the **reliability** of their **AI systems**, (i.e. follow the requirements applicable to high-risk AI systems for AI classified as limited or minimal risk)



The AI Act also introduces **systemic risk** which is specific to certain **General Purpose AI systems (GPAIs)** to which specific obligations are applicable (e.g., definition of cyber security measures, mitigation of potential risks).

What is Next?

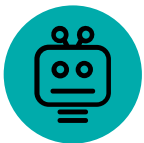
2 February 2025

Ban on prohibited AI systems take place



2 February 2026

Implementing act on post-market monitoring expected



2 August 2027

Obligations of High-Risk AI systems identified through Annex I (EU Harmonisation Legislation) take effect



2 August 2025

Provisions for General Purpose AI systems and models take effect

2 August 2026

Obligations of High-Risk AI systems (listed under Annex III) take effect



Non-compliance with the prohibition of AI Systems

€35 Million
or **7%** of the total worldwide annual turnover



Non-compliance by operators to their obligations

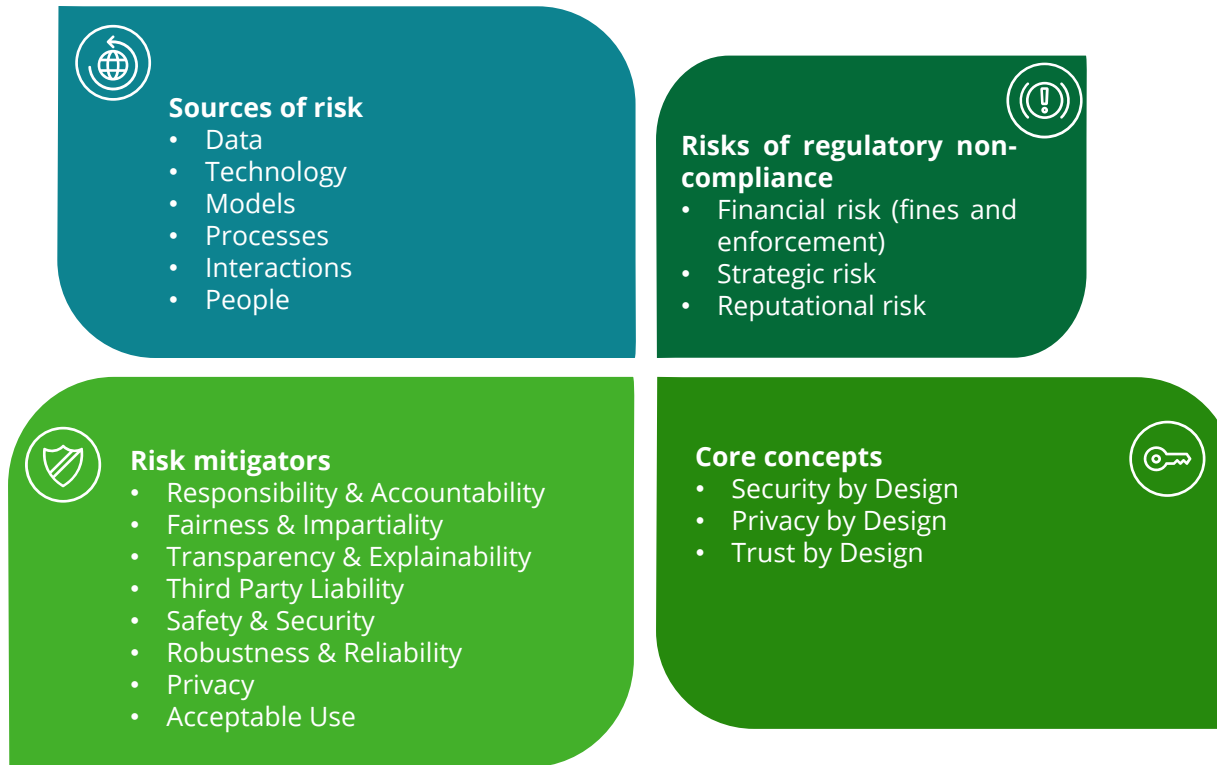
€15 Million
or **3%** of the total worldwide annual turnover



Supply of incorrect, incomplete of misleading information to National Competent Authorities

€7.5 Million
or **1%** of the total worldwide annual turnover

How does this impact your organisation?



Prioritising risk and compliance in AI design can reduce regulatory-driven delays and time to market. The Act's interplay with existing regulation creates a complex compliance challenge. Adopting a holistic strategy that leverages synergies and addresses dependencies, can help streamline and optimise compliance requirements.

Planning Ahead – What should organisations be doing now?



Create an **AI Inventory**



Identify your role in the
AI Value Chain



Determine the **Risk Category** of your AI systems and General Purpose AI models



Develop your **AI compliance framework**

Focus on Training and Awareness – Article 4 (AI Act)



Assess
Current AI
Literacy Levels



Develop AI
Literacy
Programme



Establish
Policies &
Procedures



Documentation
& Reporting



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