Artificial Intelligence

in accounting

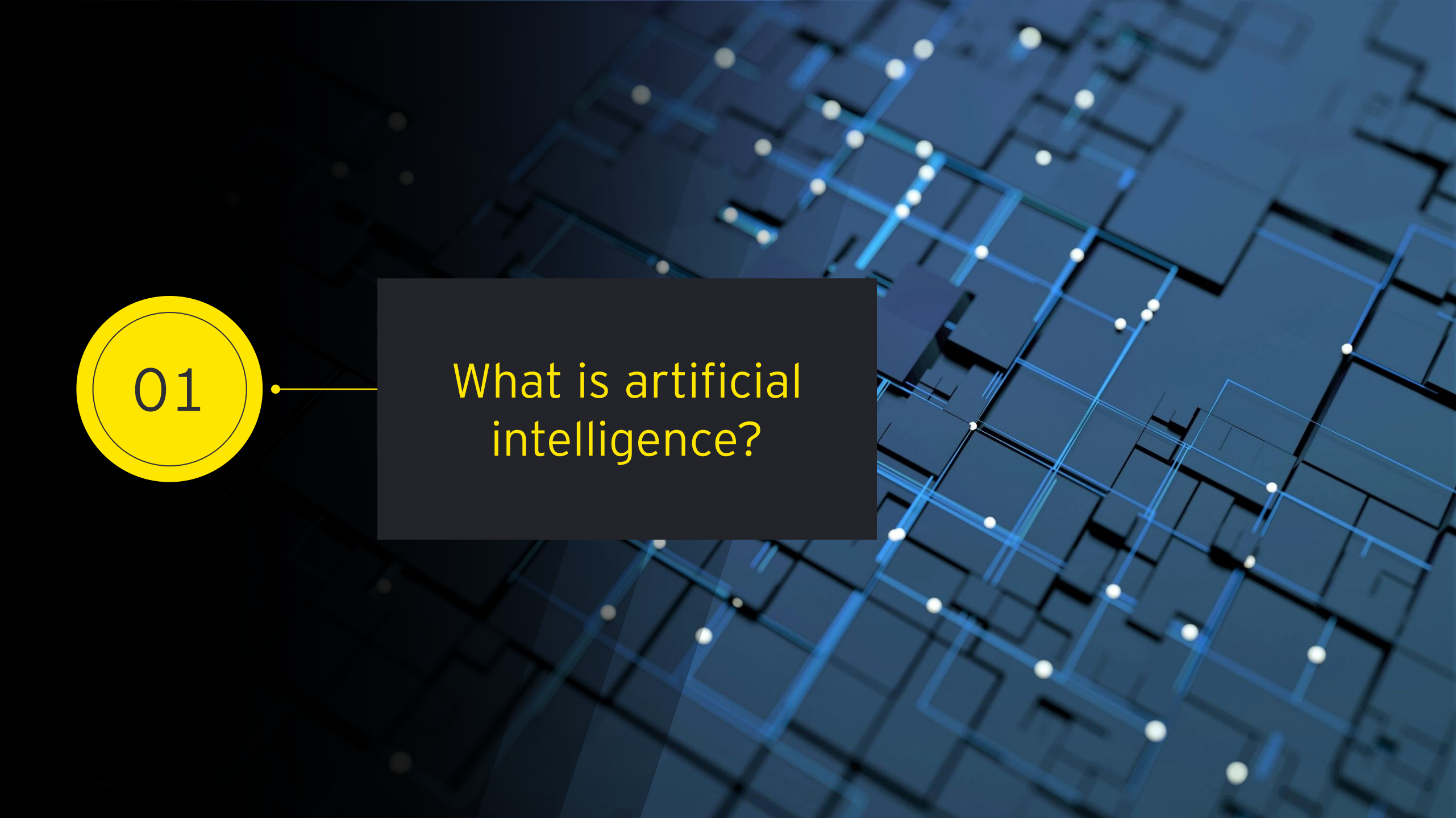
Convergence May 2024

Today's agenda

1. What is artificial intelligence (AI)?
2. How are companies using AI?
3. What are AI-related risks and governance considerations?
4. What are current audit considerations with respect to AI?

Module objectives

1. Examine how companies are rethinking workflows to integrate AI into core accounting functions
2. Review current AI applications used in accounting
3. Assess potential risks associated with AI implementation in accounting
4. Discuss how organizations can deploy AI in a risk-based governance model


01
What is artificial intelligence?

Significant shift in the human-machine relationship

Reshaping the future of work:

From human creators:

People executing

- processes
- presented with data
- powered by technology

To human editors:

AI Technology executing

- processes
- powered by data
- managed by people

The evolution of Artificial Intelligence

Artificial Intelligence

AI, or artificial intelligence, is a spectrum of technologies that will emulate the cognitive processes of the human brain and learn or evolve over time.

Machine Learning

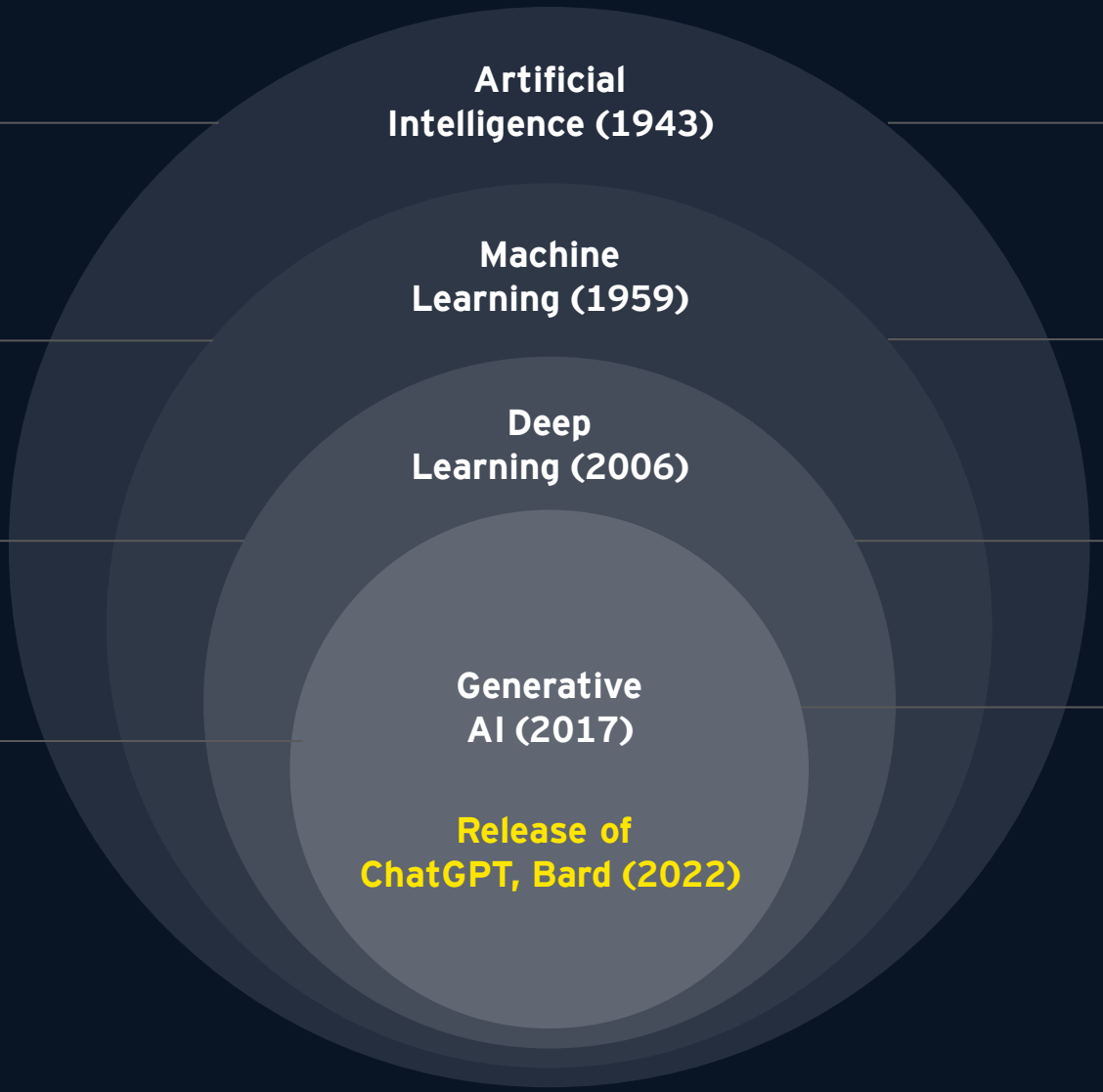
Machine learning is a subfield of artificial intelligence that uses models and data to teach algorithms how to respond without being explicitly programmed.

Deep Learning

Deep learning is a subset of machine learning, which is essentially a neural network with three or more layers that automatically learns representations of data, making it more adept at handling complex, unstructured data.

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 human-created and defined data it has been trained on.



Example application

Relevant search engine results based on user query

Past behavior leads to personalized ads

Automated identification of unstructured data (e.g. facial recognition)

Generate new information based on interpreting existing data

Generative AI augments traditional ML, does not replace it

	Classical AI	Generative AI	
1 From single-use to **broad application**	• **Fit-for-purpose model** - single-use models to address specific topics (customer churn, fraud, risk, etc.)	• **Multi-purpose LLM** - one model can address variety of tasks and topics	▪ Versatile ▪ Multi-modal
2 From model creation to **model adaptation**	• **Starts with creating new model** – using supervised training to deliver pre-defined outcomes	• **Starts with existing foundational model** – can be adapted for specific purpose	▪ cost-effective ▪ speed to insight
3 From complex interface to natural **human language**	• **Computer language** – requires technical expertise to build and interrogate the model	• **Natural language** – understands user commands in natural human language	▪ accessible ▪ conversational
4 From pattern recognition to **pattern creation**	• **Discriminative** - ideal for classifying, clustering, making predictions and recommendations	• **Generative** – can lead to truly innovative and unexpected solutions across real-world applications	▪ creative ▪ first draft
Example:	Analyze consumer behavior data to identify best content for driving customer retention	Use that same data to create entirely new personalized content to drive new customer acquisition and sales	
Key Enablers:	Machine learning, neural networks, deep learning	Massive computing power (GPUs), advanced deep learning (transformer architecture with attention mechanism), natural language interface	

02

How companies are using AI?

How big is AI's total addressable market (TAM)?

	Smartphones	Digital payments	Electric vehicles	Cloud/ SaaS	Artificial intelligence
Simple estimate (USD trillions)	$1.5	$2.0	$2.6	$4.5	?
How to size the TAM?	Total adult population	Total amount of spending	Total vehicle sales	Total amount of IT spend	?

Source: Gartner February 2024

Why is AI worth a try for many company leaders?

Benefits

Increased efficiency	**50%** Less time dedicated to planning and forecasting processes (Microsoft)	**15-50%** Time savings in finance processes execution (Microsoft)
Enhanced performance	**25%** Less time reaching AI benefits than peers, when Gen AI is used (Gartner)	**6%** Improved cashflow forecast accuracy with advanced AI (EY client experience)
Improved experiences	**72%** Percentage of global consumers who said GenAI would improve customer experience (Adobe)	**90th** Percentile scored by ChatGPT on the bar of ease of use

Challenges

Ethical and confidence concerns	**Bias** results in content that is relatable to certain groups while alienating others	**Hallucination** Generation of content that is incorrect, irrelevant, or inconsistent with the input	**IP concerns** $1.8 T lawsuit filed by Getty Images against AI image generator
Job impacts	**66%** CEOs say jobs impacted by AI will be counter-balanced by new roles. (CEO Survey, 2023 | IDC | McKinsey)	**$1,252** is the average cost of training per employee. (Indeed)	
Regulatory concerns	**Italy** First Western country to ban ChatGPT	**76** Page "AI Bill of Rights" blueprint unveiled by White House	

C-suite executives view **GenAI** as a catalyst for reinvention

81% see generative AI as a key lever in their reinvention strategy.

Their plans to fundamentally reinvent specific areas of their business with generative AI over the next 3 years include:

IT	Marketing	Finance	Customer service	Strategy and M&A	R&D
63%	54%	41%	35%	29%	29%

Source: Accenture 'Reinvention in the age of generative AI', January 2024

How are companies using AI?

Selected examples:
Existing company uses of AI

- Informing and directing direct decision making: customer profiling, credit analysis and credit scoring
- Supply chain and procurement – including AI enabled inventory management
- AI enabled IT code reviews and code development

Look ahead – AI in the finance function:
Significant company R&D activity with AI

- Search and summarization of accounting policies as well as researching standards
- AI enabled forecasting and planning
- AI for operational accounting and close process automation (e.g., auto reconciliations)
- AI enabled automation of Accounts Payable
- AI enabled sales and financial performance trend analysis
- AI enabled automation of financial statement disclosures and management analysis

Example AI use cases today in finance and accounting

Reporting

- **Narrative generation** – Draft suggested narratives and footnote disclosures for financial reporting and regulatory filings based on financial data
- **Analyze Peer Group Financials** – Perform peer analysis of published 10K/10Q and other publicly available financial reports

Accounting

- **Predict reserves/accruals** – Estimate the likelihood of future warranty claims by analyzing historical relationships between product failures and the factors that influence them

AP

- **Perform Vendor Expense Analysis to Detect Fraud** – Analyze vendor/employee expenses to identify trends and discrepancies
- Read and classify invoices

Tax

- **Perform Scenario Analysis to Determine Tax Strategy** – Analyze tax scenarios across different jurisdictions and recommend optimal strategies
- **Optimize Tax Decision Making** – Identify tax deductions and credits, evaluate tax implications of business decisions

Treasury

- **Forecast & Analyze Cash Flows** – Forecast cash flow by analyzing historical data and identify trends and patterns to optimize cash flow

Financial planning and analysis

- **Financial Forecasting** – Analyze financial data to project future performance (revenue, expense) by using large internal & external datasets

Challenges of adopting AI in accounting

Data quality, privacy, availability

Skilled talent scarcity

Change resistance, culture shifts

Evolving regulatory compliance

Implementation cost


03
What are AI-related risks and governance considerations?

What are key stakeholders doing now relative to AI?

Boards

Focused on strategic alignment and risk management. Must have basic awareness of the training and frameworks being used for responsible AI use and regularly update AI policies to adapt to rapidly changing landscape.

Government/regulators

Grappling with how to establish flexible, principles-based legislation and governance that can evolve, determine accountability, establish frameworks for reporting.

Investors

Focused on balancing AI transparency and company vulnerability, ethical AI development, labor efficiency without job loess, and sustainability of current business models in the AI era.

Auditors

Asking management how they are thinking about deploying AI, policies around usage, adherence to existing frameworks, data security.

Considerations for company stakeholders

Key questions for audit committees

Strategy
What is your organization's AI strategy?

Governance
Does your organization have a dedicated governance framework?

Visibility
Do you have visibility of AI being deployed across your organization?

Risk management
How is your organization identifying and addressing potential risks associated with the use of AI?

Key questions for C-Suite executives

CEO / COO	...does AI impact your company's strategy and market position?
CFO	...can you leverage AI to create value and increase shareholder returns?
CTO / CIO	...can you integrate AI into your teams' skillsets as well as your core technology and information systems?
CRO	...do you place the right safeguards and controls to operationalize using AI while ensuring data security?
Employees	...when is it permissible to use AI and how do I know when AI impacts my process?

The cornerstones of governance apply to AI but require unique considerations

Understanding who is responsible to implement the areas below across the business is critical

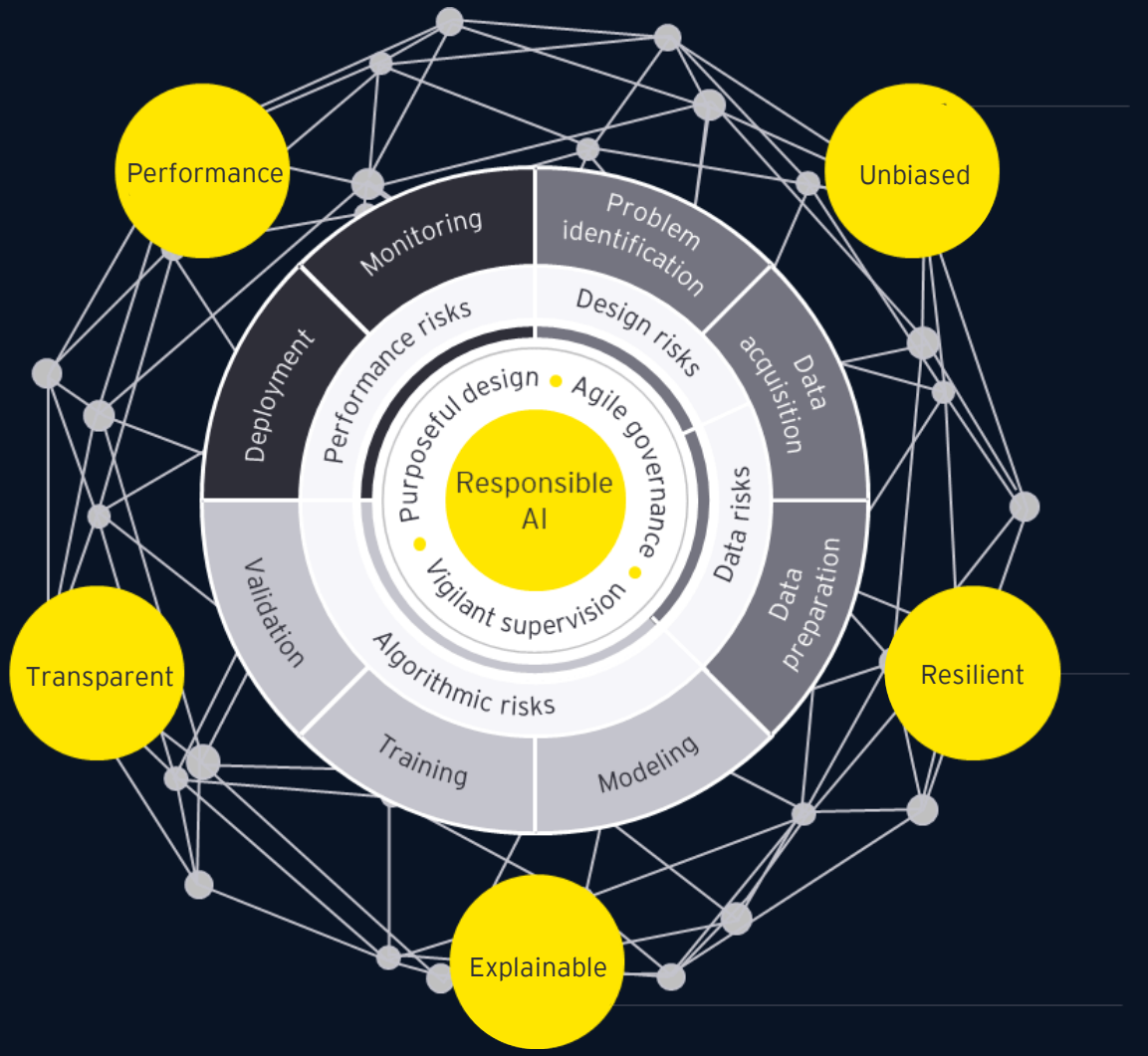
Traditional risk and control categories apply to AI technology, but they each bring their own unique risk considerations

Balancing the risks with the opportunities

- **Responsible AI frameworks** evaluate AI risk and build controls across five trust attributes, **four risk categories** and three governance domains

- 5 trust attributes in AI design
  - **Explainable** design
  - **Resilient** from intended disruptions
  - **Unbiased** data inputs and model
  - **Performance** in line with intended strategy
  - **Transparent** decisions and outputs

- 4 risk categories
  - Design risk
  - Data risk
  - Algorithmic risk
  - Performance risk

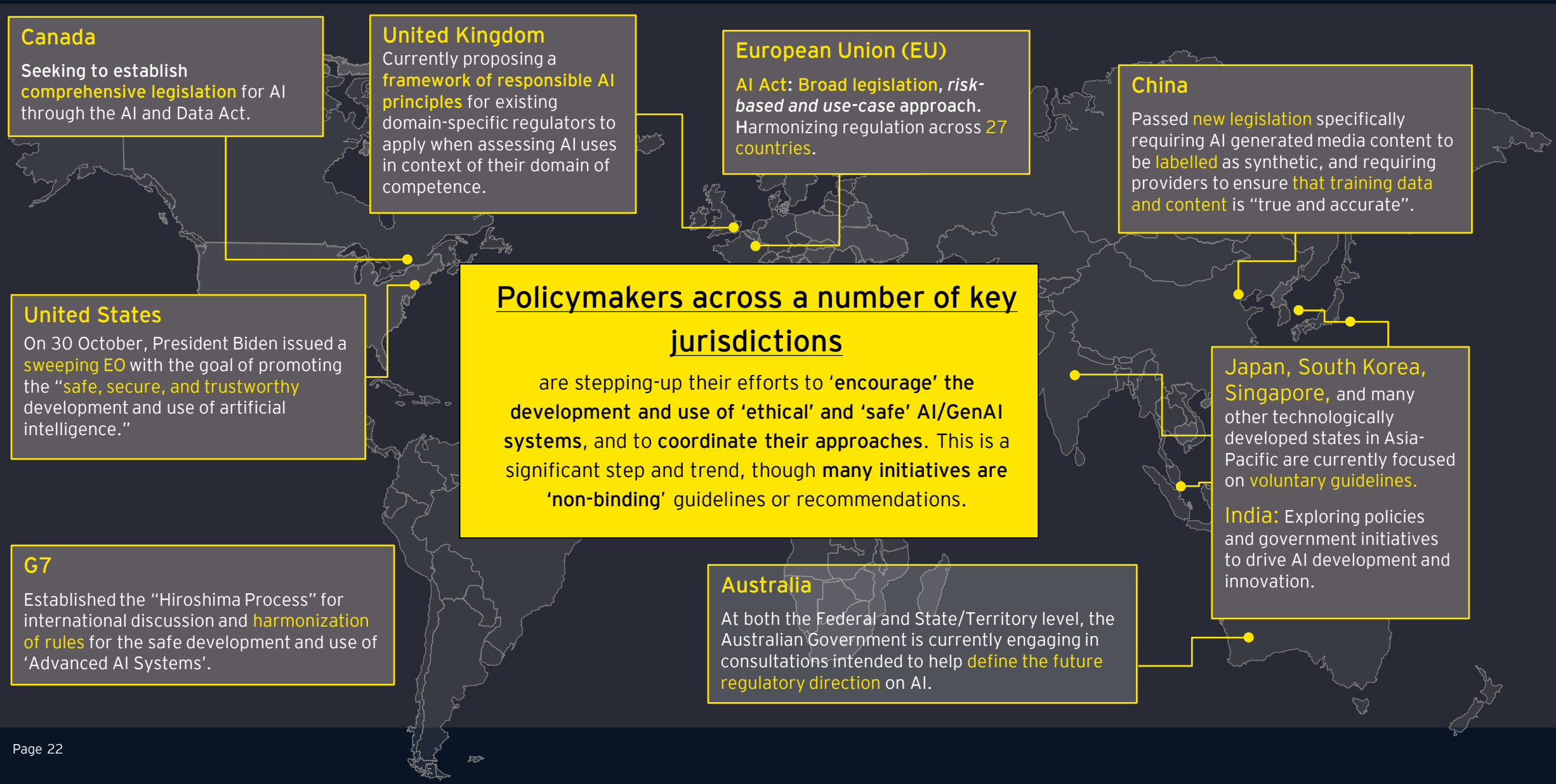


What are example AI risk categories and controls to consider?

Risks	Risk descriptions	Processes and controls
01 Design risk	Is the solution designed contemplating the needs of all impacted stakeholders?	▸ Design documentation (comprehensive, comprehensible) ▸ AI regulatory/legal compliance, data protection and privacy regulations ▸ Established team of qualified personnel to provide oversight, monitoring, maintenance
02 Data risk	Is the right data available? Is the data unbiased and representative?	▸ Documentation and review of input data requirements ▸ Validation procedures to identify and remediate deviations from established requirements ▸ Process designed to assess quality, security and integrity of data used
03 Algorithmic risks	Is the AI system explainable?	▸ Audit trail to explain outcomes ▸ Review of model appropriateness for the intended purpose ▸ Quality and security validation of third-party AI systems
04 Performance risk	Does the AI produce accurate and reliable outcomes?	▸ Validation controls over data inputs and AI outputs ▸ Proper IT controls over access and change management


04
What are current audit considerations with respect to AI?

AI related regulations and standards: Current global landscape



Canada

Seeking to establish comprehensive legislation for AI through the AI and Data Act.

United Kingdom

Currently proposing a **framework of responsible AI principles** for existing domain-specific regulators to apply when assessing AI uses in context of their domain of competence.

European Union (EU)

AI Act: Broad legislation, *risk-based and use-case* approach. Harmonizing regulation across 27 countries.

China

Passed new legislation specifically requiring AI generated media content to be labelled as synthetic, and requiring providers to ensure that training data and content is "true and accurate".

United States

On 30 October, President Biden issued a sweeping EO with the goal of promoting the "safe, secure, and trustworthy development and use of artificial intelligence."

Policymakers across a number of key jurisdictions

are stepping-up their efforts to '**encourage' the development and use of 'ethical' and 'safe' AI/GenAI systems**, and to **coordinate their approaches**. This is a significant step and trend, though **many initiatives are 'non-binding'** guidelines or recommendations.

Japan, South Korea, Singapore, and many other technologically developed states in Asia-Pacific are currently focused on voluntary guidelines.

India: Exploring policies and government initiatives to drive AI development and innovation.

G7

Established the "Hiroshima Process" for international discussion and harmonization of rules for the safe development and use of 'Advanced AI Systems'.

Australia

At both the Federal and State/Territory level, the Australian Government is currently engaging in consultations intended to help define the future regulatory direction on AI.

COSO Framework for AI

Applies principles from COSO's Enterprise Risk Management (ERM) – Integrating with Strategy and Performance Framework (2017) to AI initiatives.

- **Governance:** Governance structure should be designed to provide oversight of the use of AI, including the establishment of policies and procedures for the development, deployment, and use of AI.
- **Risk Management:** Identify and assess the risks associated with the use of AI, and develop and implement controls to mitigate those risks.
- **Performance Measurement:** Measure the performance of its AI initiatives, including the effectiveness of its controls and the impact of AI on the organization's objectives.
- **Control Activities:** Implement controls to mitigate the risks associated with the use of AI, including controls over the development, deployment, and use of AI.
- **Information and Communication:** Communicate information about its use of AI to stakeholders, including investors, customers, and regulators.

What are auditing considerations for a company's use of AI?

Overview

There are no current auditing standards specific to the auditor's responsibilities for financial reporting processes that are supported by AI.

Important aspects of a framework are not dissimilar to other auditing standards, including:

1. The importance of understanding how the use of AI applications and other emerging technologies fits within an entity's overall business strategies and the business model implemented to achieve those strategies

2. The types of management's controls expected to address the risks of material misstatement as it relates to AI

3. Considerations related to identifying the risks of material misstatement arising from management's use of AI applications within the financial reporting processes and the nature, timing and extent of our responses to identified risks of material misstatement that arise from the entity's use of AI in their financial reporting processes

thank you