Artificial Intelligence: Emerging Opportunities & Risks

Navigating the Future with Artificial Intelligence

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LTSA

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Audience Pulse check

These are extremes but if you had to pick what you think the impact of AI will be do you lean towards A or B?

A

Dystopian future

Labour market collapse

Existential threats

Big Brother

B

Purpose driven work

Complex issues solved

Utopian future

Creative leaps

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Agenda

1. Definition of AI
2. Emerging opportunities: a use case view
3. Risks
4. Governance considerations
5. Where to start

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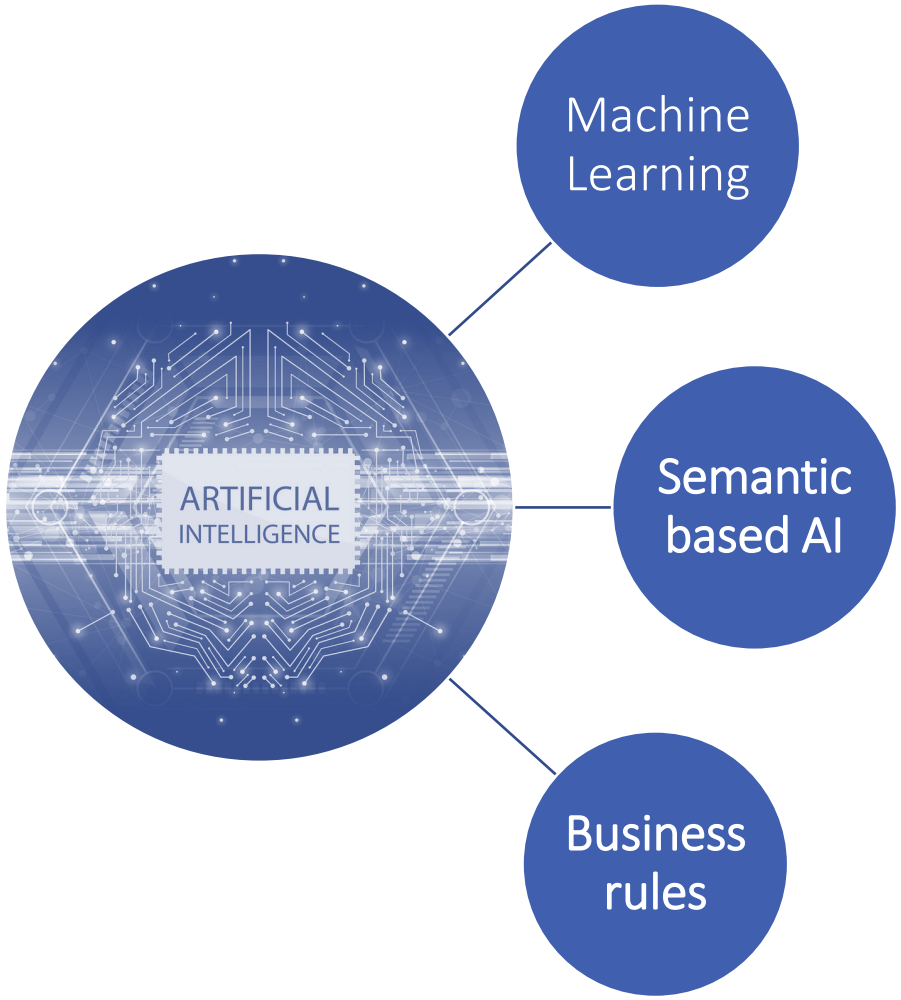
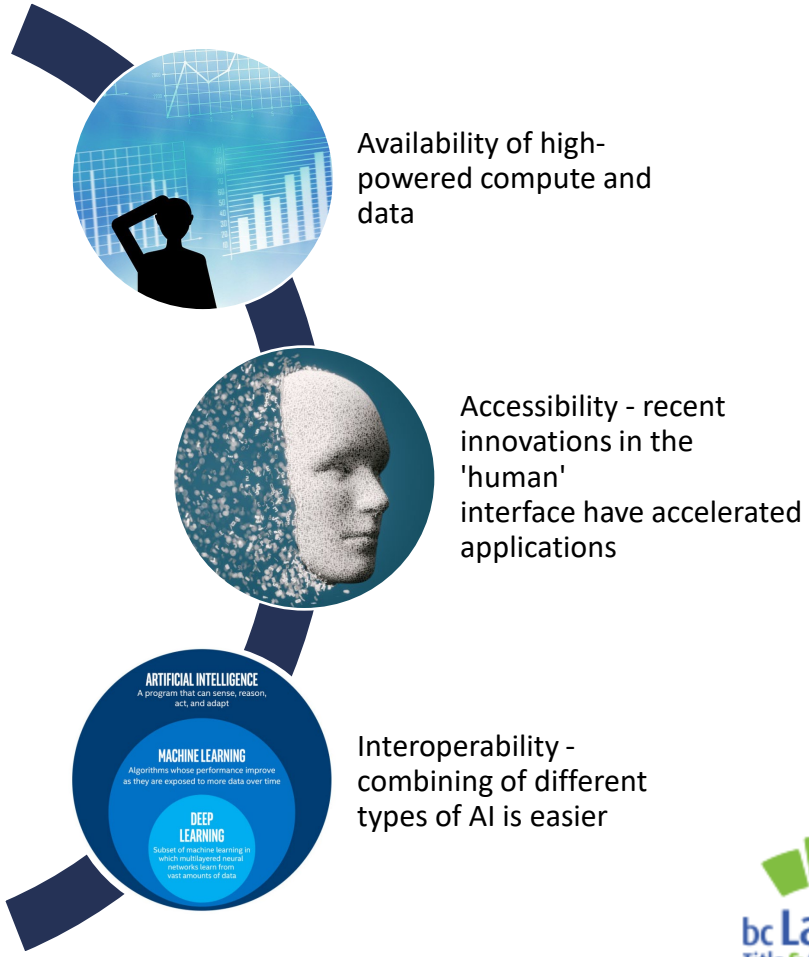
Introduction & Current State



Why the AI 'buzz' now?



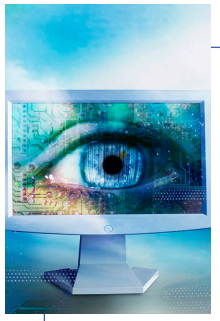
Availability of high-powered compute and data

Accessibility - recent innovations in the 'human' interface have accelerated applications

Interoperability - combining of different types of AI is easier

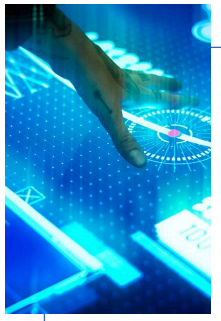
Emerging Opportunities – Computer Vision and Natural Language Processing

Potential opportunities - computer vision



Analyse and Interpret visual data

- Biometrics authentication
- Law enforcement



Natural language processing

- Intelligence at scale from previously hard to manage documents
- Perform repetitive tasks efficiently

Computer Vision – Use Case

Discriminatory covenants

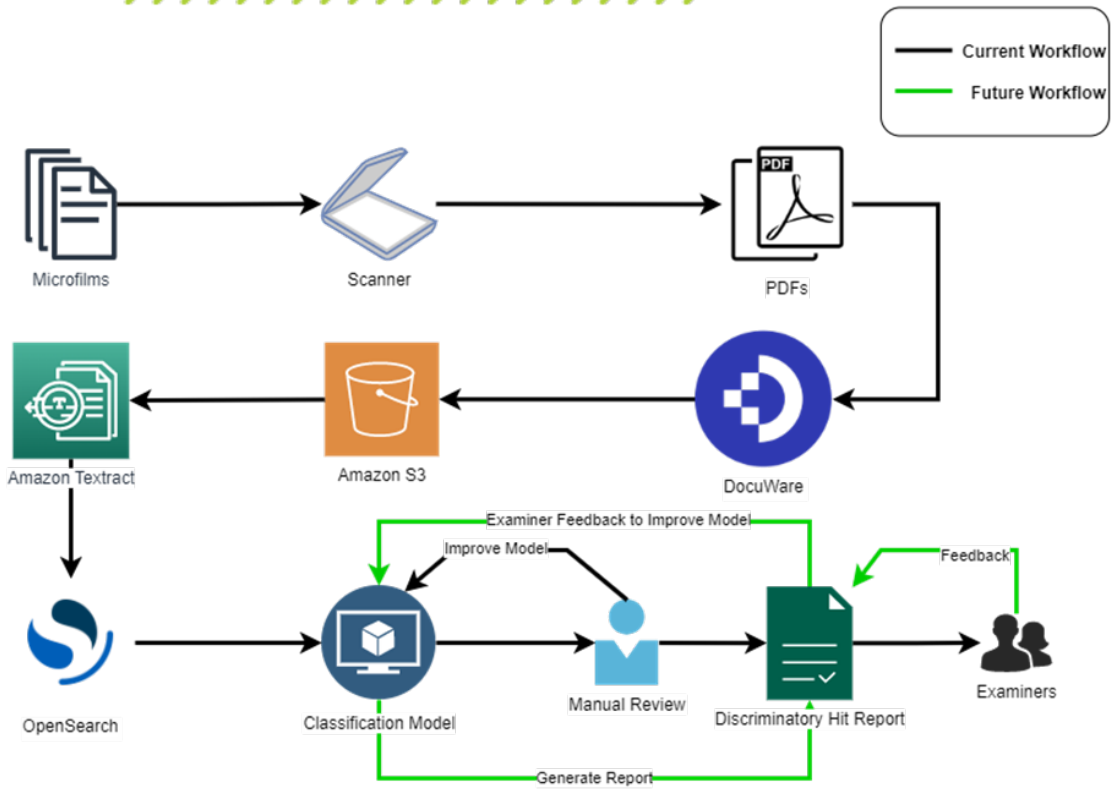
Objective

- Identify discriminatory covenants in land title documents. Discriminatory covenants on land titles typically restrict the sale or occupation of land based on race, ethnicity, or other characteristics of a person

Complication

- 48,000 microfilm reels of documents dating back to 1860s
- Approximately 110,000,000 pages of documents

Computer Vision – Use Case



Problem

- Over 100 million pages of historic land title documents to review

Success Criteria

- High accuracy conversion of images to text

Complications

- Balancing cost vs. accuracy
- Optimize detection of discriminatory language in results
- Privacy and Security

Outcome and Learnings

- Developed vision and detection pipeline
- Poor data quality of old documents needed significant pre-processing
- Synthetic data benefits

Computer vision – Future Applications

Intelligent Document Processing

Augmented reality (property and land visualisation and modelling)

Industrial automation of imaging (monitoring and mapping) - accelerating with IoT and autonomous vehicles (e.g drones)

Emerging Opportunities – Generative AI

A large language model (LLM) is a type of artificial intelligence (AI) algorithm that uses deep learning techniques and massively large data sets to understand, summarize, generate and predict new content.

LLMs

Make it easier to find, synthesise and understand information

Improve customer experience while reducing dependency on tacit knowledge

Improve processes and tools to reduce time spent on predictable tasks

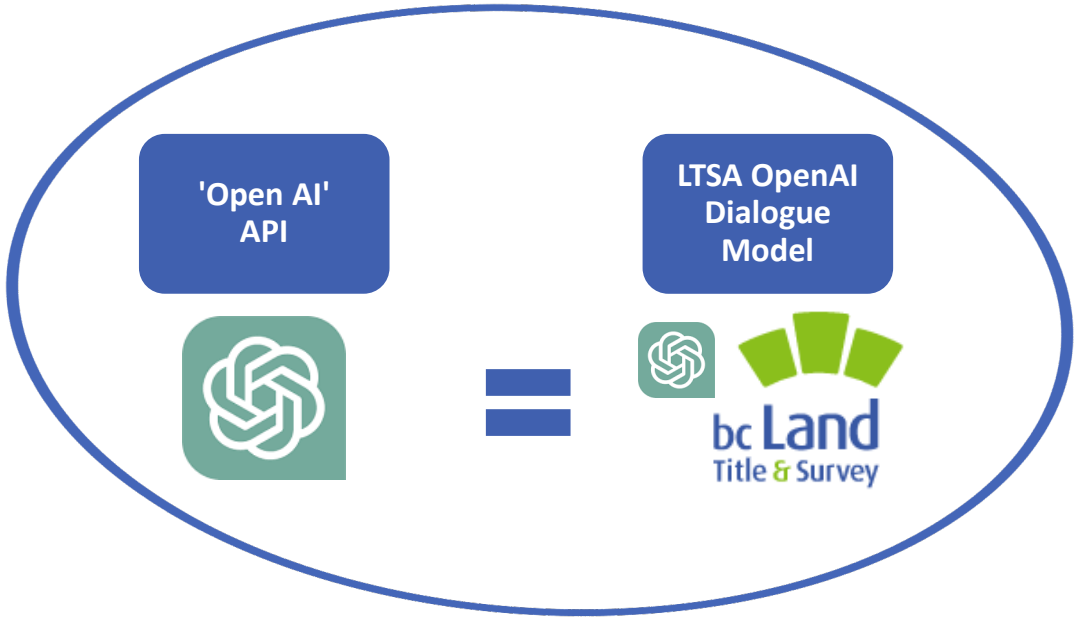
Generative AI – Use Cases

LTSA is running a Proof of Value to investigate the applications of Large Language Models (LLMs)

- Advanced chatbot for customer service
- Leverage LLMs to visualize and optimize business processes
- Code/test automation and assistance
- AI assistant to help “enhance accuracy, thoroughness, and efficiency in legal research, document drafting, and jurisdictional policy analysis”

Aim is to demonstrate the capabilities of LLMs, and the benefits of a tailored approach to couple power of available LLM engines with LTSA specific domain knowledge

Generative AI – Chatbot Use Case



Problem

- How to blend 'Open AI' and proprietary information (RAG approach)

Success Criteria

- Provide accuracy and quality
- Ensure privacy and security
- Prove customer and ccommercial value
- Understand constraints of applying LLMs in business context

Complications

- Inaccurate responses could harm reputation of LTSA. What degree of accuracy is appropriate?

Outcome and Learnings

- Enhanced accuracy and targeted response with RAG approach
- Providing the ability to reference retrieved documents in responses builds user trust
- Data quality of the knowledge base is critical

Generative AI Is Not A ‘Silver Bullet'

Generative AI – Suitability Areas

From Gartner (2024)

AI technique suitability Low (L) Medium (M) High (H)

	Common AI techniques					
Use-case families	Generative models	Nongenerative machine learning	Optimization	Simulation	Rules/ heuristics	Graphs
Prediction/ forecasting	L	H	L	H	M	L
Planning	L	L	H	M	M	H
Decision intelligence	L	M	H	H	H	M
Autonomous systems	L	M	H	M	M	L
Segmentation/ classification	M	H	L	L	H	H
Recommendation systems	M	H	M	L	M	H
Perception	M	H	L	L	L	L
Intelligent automation	M	H	L	L	H	M
Anomaly detection/ monitoring	M	H	L	M	M	H
Content generation	H	L	L	H	L	L
Conversational user interfaces	H	H	L	L	M	H
Knowledge discovery	H	M	L	L	M	H

Generative AI – Future Applications

Business process re-engineering

- Generative AI to translate existing non-standard (language based) business process documentation into a graphical standard representation for specifying business processes, such as BPMN, could be a way to reduce the time and effort in updating business processes

Knowledge management

- Rise of 'fusion skills'
- Knowledge over data and idea of knowledge 'arks'
- Universal agents – replace the web search

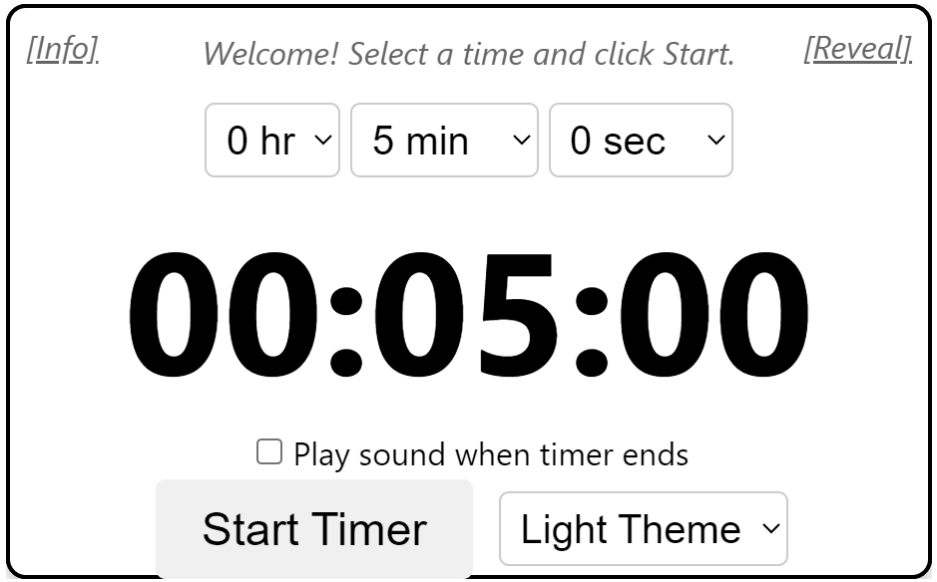
Agentic LLMs (the vehicle to realise AI's economic potential?)... Consider, for example

- Generative AI produces ideas for a service (extensive literature search to test merits of idea)
- An Agentic AI carries out experiments
- Generative AI assesses them and writes-up opportunity
- Generative AI reviews the write-ups done by Generative AI!

Your Turn?

3-5 mins: turn to person next to you and discuss the relevance of these use cases for your organisation and/or if there are additional ideas for AI you think are interesting/exciting.

Jot down any interesting ideas



RISKS: THE SPEED OF CHANGE

1

Ethics & Transparency

AI systems are highly complex and opaque (black box), data-driven and running at scales and speeds unmatched by humans.

- Bias and fairness
- Transparency and explainability
- Clear decision-making accountability

2

Scalability & Integration

Overlooking future AI-powered solutions may result in disjointed workflows, inefficiencies, and missed opportunities.

- Risk of building data-models, architectures or platforms that don't support or integrate with AI-powered solutions

3

Privacy & Data Security

Ensuring ethical use and maintaining transparency may become increasingly challenging.

- The challenge of safe-guarding data and information may begin to shift
- Increased complexity within IT systems using AI-powered tools

RISKS: EVOLVING CHALLENGES

4

Workforce Adaptation

Inability to upskill workforce could lead to decline in service quality, productivity, and employee satisfaction.

- Automation may require role redefinition and transition strategies
- Core competencies, along with recruitment and retention approach may require realignment
- Continuous AI training and education will be critical to maximize utility and maintain workforce proficiency

5

Regulatory Compliance/Social Rejection

Non-compliance due to fast-evolving policies and regulations could lead to legal risk or stall innovation.

- Inadvertently violate privacy laws
- Advancements may exceed existing compliance structures (can't leverage solutions)
- Social stigma leads to public rejection of services that rely on AI.

6

Capital-Intensity (Obsolescence)

The speed of change complicates strategic decision-making.

- Time-to-obsolescence may increase
- Pressure on the capital investment cycle may increase
- Risk of spending capital on throw-away products or solutions may increase

Governance Considerations

AI systems should be reliable and safeguard human dignity (AIDA).

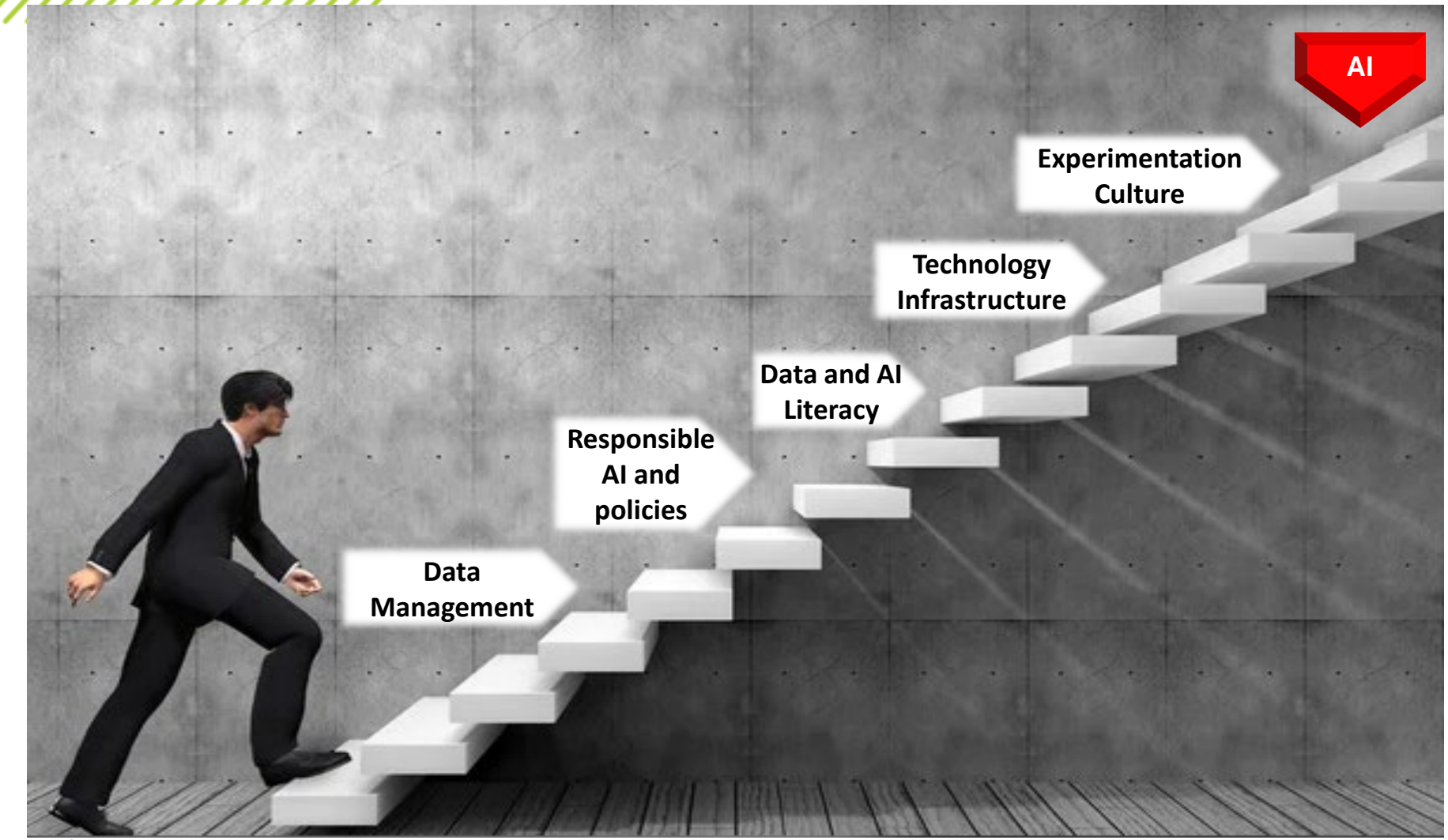
Key Considerations

- Responsible AI use: Transparency and Accountability, Ethics, Fairness
- Privacy and Security
- Regulatory compliance
- Take a use case view
- Embed into existing Governance mechanisms (including ongoing monitoring)

Implication

- Data Management , Data and AI literacy. Who should be responsible for AI governance agenda?
- Measures to safeguard sensitive data (across value chain)
- Evolving – will customers be able to opt out?
- Is the business problem (and associated risk) clear
- AI is already becoming embedded in everyday tools

Where to start?



Questions

Thank you

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