

PRESENTED BY Fernando Mourao

Responsible AI (RAI) engineering & practices: Enabling trusted AI systems at scale



Why Responsible AI?



“We are debating the impacts of technology on our values to ensure our creations augment the kinds of society we want to live in, not subvert them”

Carole Piovesan

Rather than an isolated component, AI is a complex system that is shaped and reshapes the environment with which it interacts.

An unfair world

- People fairly understand the existence of many social problems
- Everyone generally agrees with RAI principles and the need to increase diversity and inclusion
- **So, why do we still see so many bad or irresponsible uses of technology in business worldwide?**

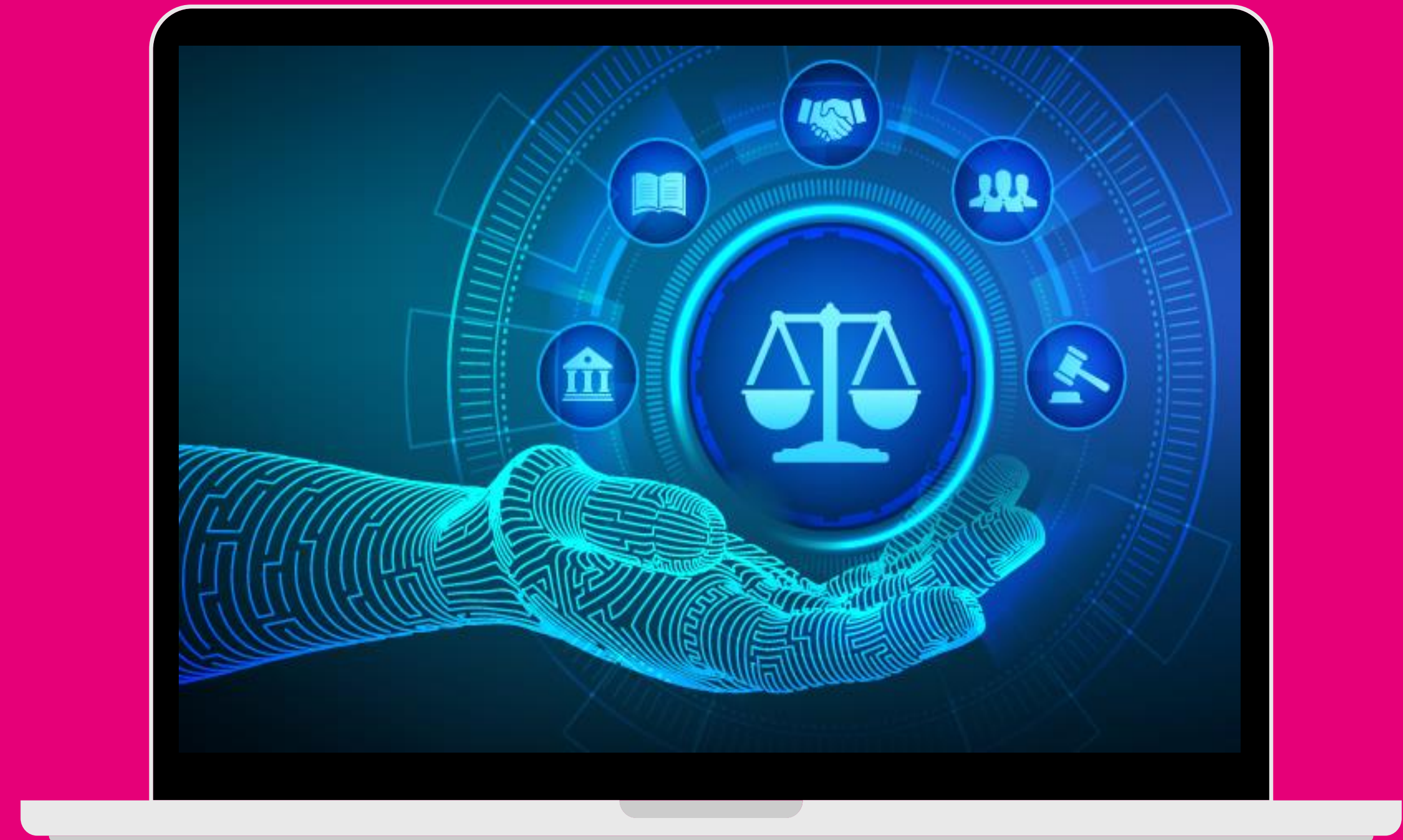
Lack of Ownership



A key responsibility of RAI Leaders within organisations is to identify and map the role of each stakeholder on RAI, empowering everyone to fully understand and execute their responsibilities for delivering trustworthy services.

What is Responsible AI?

RAI is a transformation process aiming to enable **behaviours** and **practices** required to establish a mature and professional AI development lifecycle, delivering trusted, lawful, fair, efficient, and sustainable services!



AI Ethics

It is about ...

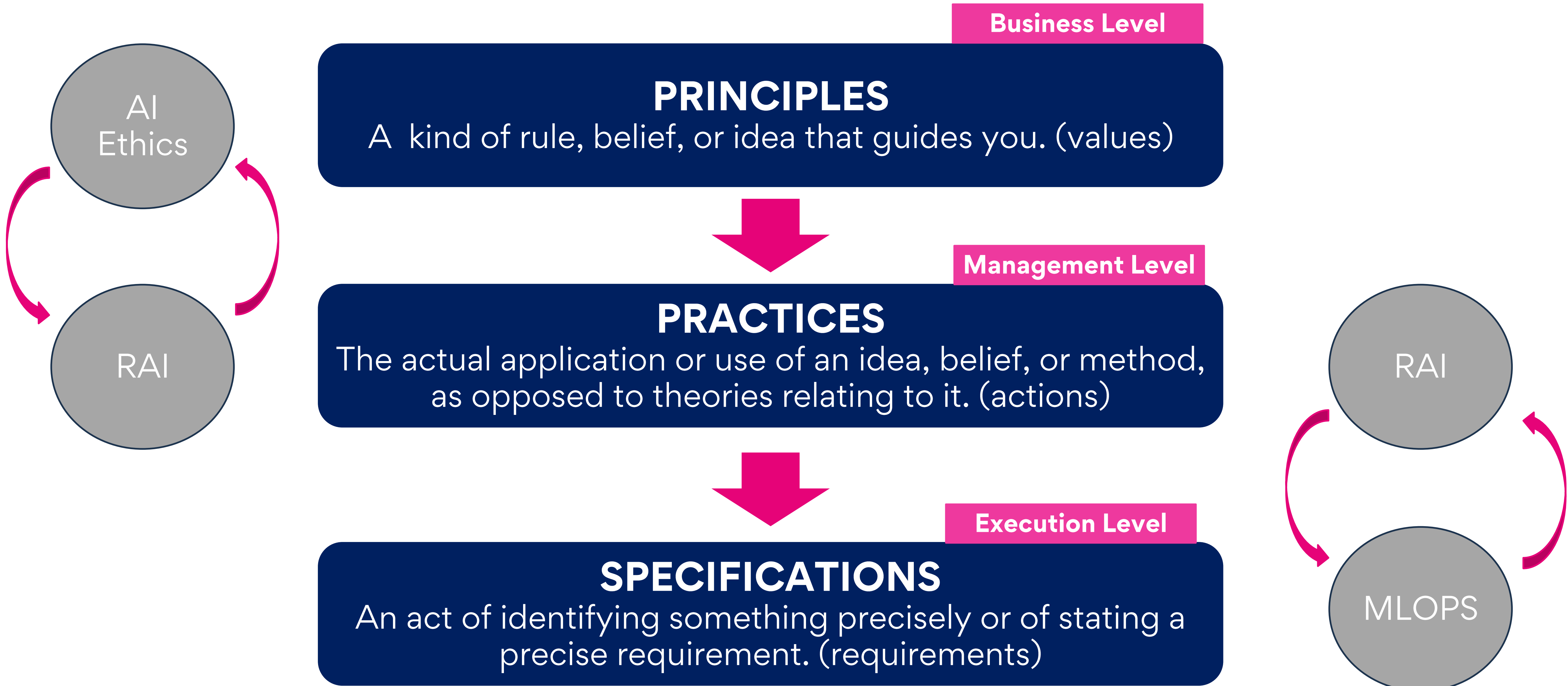
- Setting values to guide intents
- Creating foundations & directions for businesses
- Aligning AI principles, commitments, and priorities with business vision, mission, and values

RAI

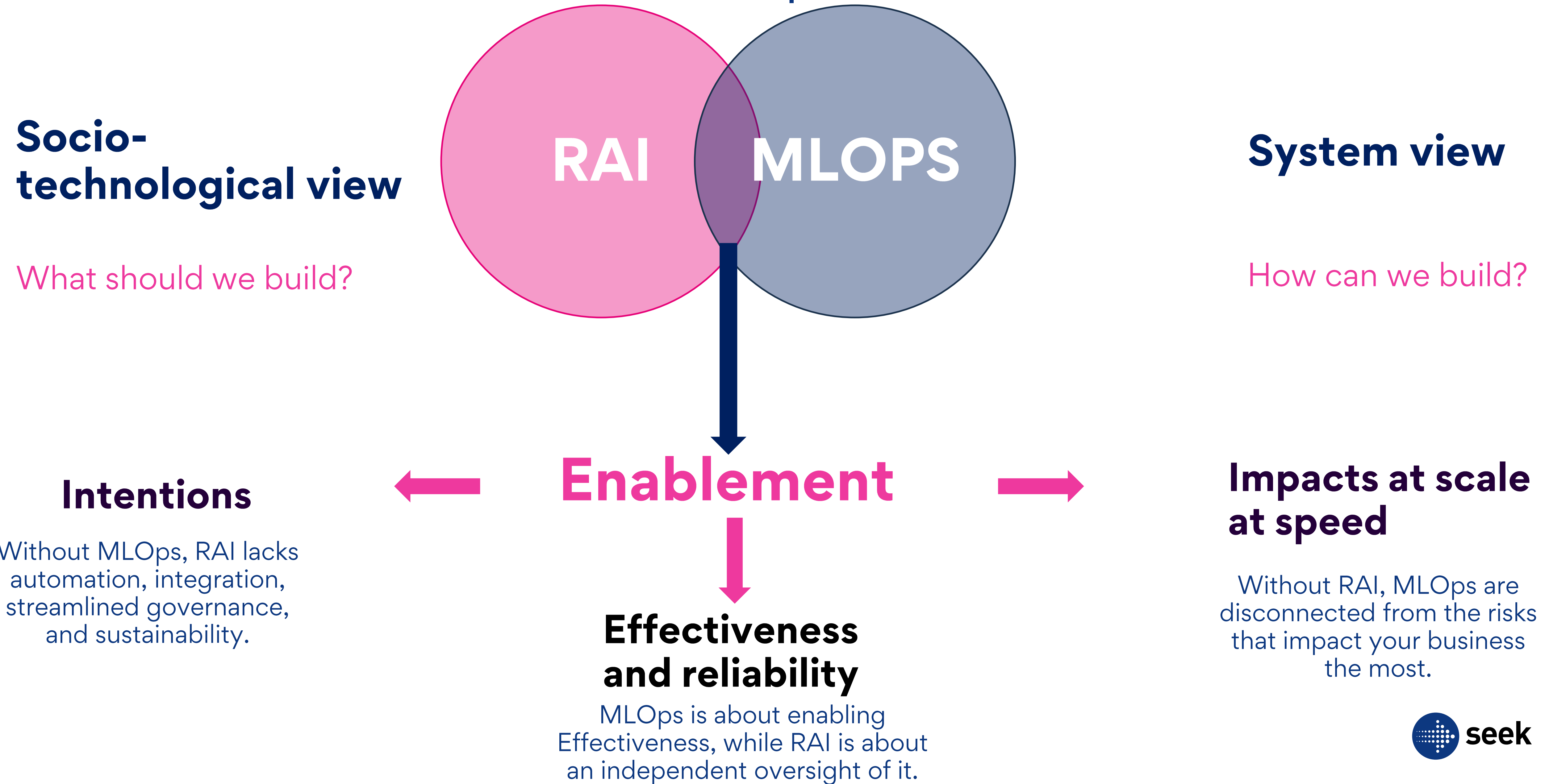
It is about ...

- Enabling the delivery of the intended solutions
- Empowering stakeholders to materialise the business intentions
 - Aligning governance, frameworks, practices, and processes with AI principles, commitments, and priorities

From Principles to Specifications



How do RAI and MLOPs complement each other?



How could MLOPs assist RAI in scaling trusted AI systems?

- ▶ **Supporting effectiveness:** Frequent failures bring adverse consequences to people and organisations
- ▶ **Accelerating experimentation:** Move from the "Fail Fast" mindset to the "Quilt Quick" one
- ▶ **Streamlining oversight:** Add Continuous Alignment (CA) to the equation: CI/CD/CT/CA
- ▶ **Integrating Guardrails:** Failures cannot be avoided but should be identified and mitigated quickly

A roadmap for Trusted AI at Scale

A top-down strategy



RAI Engineering

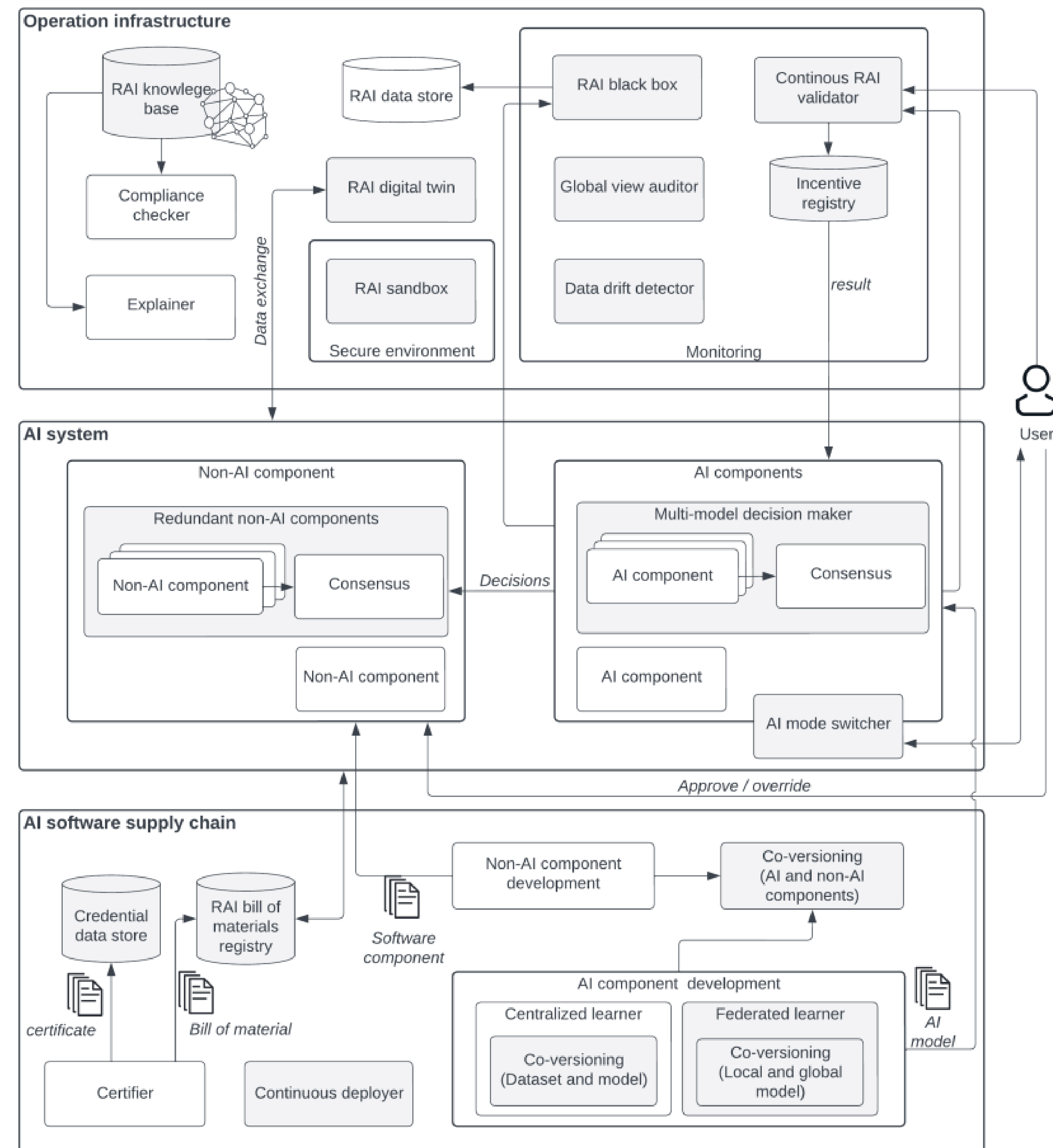
An approach to fill the gap between practices and specifications

*“Responsible AI Engineering (RAIE) involves employing engineering methods, practices, platforms, and tools to tackle end-to-end **system-level challenges**, making both AI systems and their development process responsible.”*



What can RAIE do for MLOPs?

1. Offer solution patterns to manage common AI risks
2. Provide concrete and connected methods for assessing risks
3. Highlight system-level decisions able to boost organisations' capabilities to check RAI Principles
4. Challenge current DevOps/MLOPs paradigms and best practices
5. Bring more clarity about when to automate



Operationalisation Challenges

Aware & empowered stakeholders

We were not trained to encode or assess human values in automated systems

Coordinated & Normalised

Lack of clear and normalised understanding combined with diffuse and overlapping stakeholder actioning undermines RAI governance

Integrated and sustainable

RAI processes should be part of the unified governance of projects

Proportionate & Contextualised

The challenge is not the measurement itself but identifying the most appropriate way to look at and interpret distributions of algorithmic errors and omissions

Embedding human values

The actual challenge is not about mathematical correctness but how to make algorithm systems and our delivery process support human values

RAI Silos

To be effective, RAI requires holistic activation across the organisation

Main Takeaways

RAI is an organisational behaviour

RAI is a concept in construction. Start by defining what it means for your organisation

Sustainable transformation

Sustainable transformation requires clear vision, engagement, empowerment, and time

Adaptive Governance

Adopt a lean, flexible and adaptive governance customised to your business

Break down complexity

Engage the right people with the right questions at the right time

Expand Inclusion

Expand who and what is considered and involved in decision-making

Data is not the answer

“Our datasets are tied to our history.” Renée Cumming

Think of MLOps as the powerplant driving the continuous, integrated, and sustainable RAI governance. Conversely, RAI acts as the connective tissue, bridging MLOps with the most pressing business risks.

Thank you

