CDAO Sydney

Turning Raw Data to Gold

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From Data to Conscience: Our Journey Today

1. From Data to Gold – the Opportunity
2. AI with a Conscience –Ethics is the filter
3. Responsible Innovation in Action
4. Conclusion & Call to Action

1 From Data to Gold

The Opportunity and Challenges

Data Gold Rush

It’s everywhere, it’s never-ending - Opportunity

- **Dark data makes up 55%** of an enterprise’s stored information — expensive to maintain but never utilized.- *(Technology Review, 2022)*
- By 2025, **the cost of storing** unused data globally will exceed **$250B annually-** *(MIT Sloan, 2023)*
- Only **14% of companies say they have deployed AI at scale** — despite 80% claiming it’s a strategic priority.- *(MIT Sloan & BCG AI Report, 2023)*
- 60% of firms admit they **don't know where to start with AI**, even though they have the data
- Executives now realize **data is the ore – AI is the refinery**

Unimaginable Scale of Data

Over 600 terabytes of structured and unstructured data

💡 **If We Printed 600 TB of Data on A4 Paper...(Assumptions)**

- ➢ 📄 1 double-sided A4 page holds 9 KB of text
- ➢ 📚 600 TB = 600,000,000,000 KB
- ➢ 📑 That's 66.7 trillion pages of A4 paper!

📏 **Now Stack Those Pages...**

- ✓ 🧱 One A4 page = 0.1 mm thick
- ✓ 📚 66.7 trillion pages = 6.67 million kilometers of paper

🌕 🚀 **What Does That Mean? –**

- ✓ That's like stacking paper from Earth to the Moon... 17 times! 🌎

🌕 🚀 **Stakes?**

From Chaos to Clarity: 5 step model

We do not need more data. We need Clarity

Data Discovery & Value Mapping	Data Product Thinking	Apply Maturity & Governance Framework	Consolidate	Open Up and Iterate
• What do we have? • What are the dusty data sets saying **?**.	• Who owns it ? • And Why ?	• Who can use it • And why ?	• One central Platform of truth	• Enable external innovation via APIs • Refine

Scatters Systems > Central Organized Platform

The Value We Uncovered

Once we get clarity, the value starts to emerge.

- **Performance and Scalability**: A solid data foundation lets systems handle growing workloads and deliver fast results.
- **Automation and Operational Efficiency**: Strong data infrastructure automates routine processes and eliminates manual bottlenecks
- **Interoperability and Integration**: A unified data architecture ensures different systems and teams can easily share and use data
- **Cost Savings and ROI:** By reducing manual data entry, fixing errors upstream and optimizing workflows, organizations cut wasted effort and expense.
- **Stakeholder Trust and Compliance**: A rigorous data foundation builds confidence among customers, regulators and partners.
- **Business Agility and Innovation:** Flexible data infrastructure lets organizations pivot quickly to meet new challenges.

2 AI with a Conscience

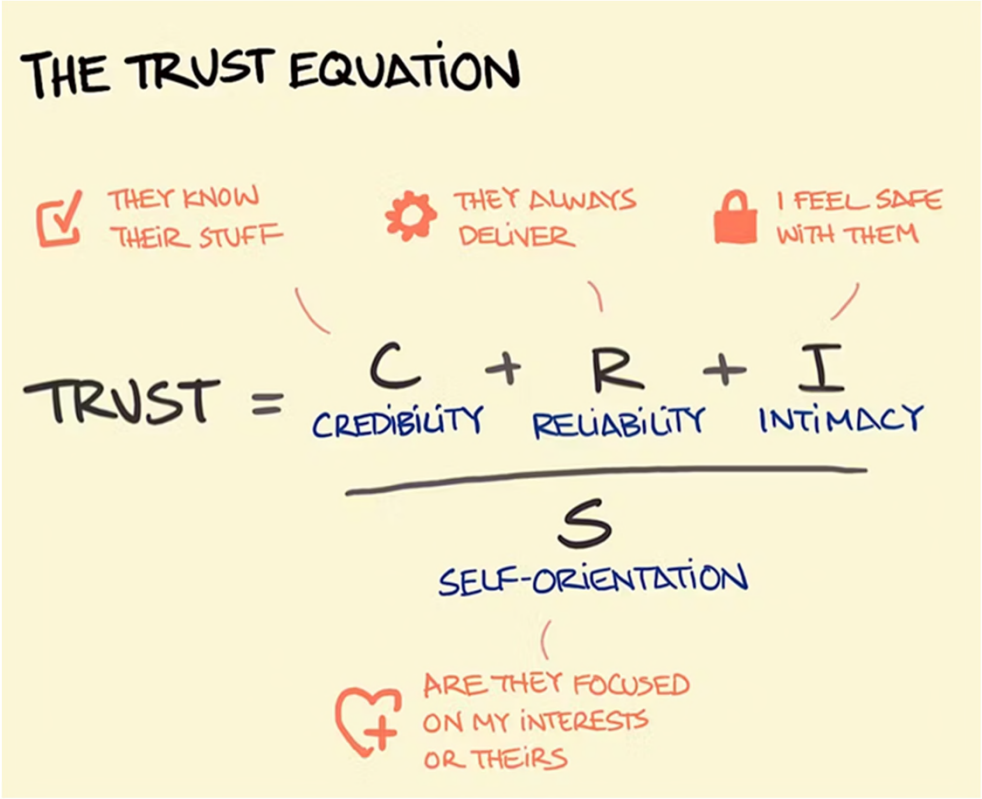
Organized Data is the foundation.
Let's bring AI into the equation

The Trust Imperative

84% of failed AI projects didn't fail on tech. They failed on trust.

Element	In AI Context	Description
Credibility	Technical performance & accuracy	Is the AI system built on sound data, science, and transparent logic?
Reliability	Consistency over time	Does it produce consistent, accurate outcomes across time, populations, and scenarios?
Intimacy	User transparency & empathy	Do people feel safe handing their data to it? Can users understand how it works?
Self-Orientation	Perceived agenda or bias	This is the denominator. Is the AI perceived as serving the user or its own goals?

We learn that human-in-the-loop isn't optional. It is essential. Because if you don't trust the system, you'll override it – or worse, ignore it.



** Equation developed by Charles Green*

Ethics: The Invisible Architecture of AI

You can’t bolt on ethics later. It has to be built in – like wiring in a house.

- **Is it Fair ? = Unlocking New Value**
  - ✓ Discriminatory AI limits opportunities and trust
  - ✓ Fair models tap into underserved markets
  - ✓ Protects against reputational harm and legal risk
- **Is it Transparent = Can you explain it**
  - ✓ Stakeholders deserve to know how AI decisions are made
  - ✓ Explainable AI fosters confidence
  - ✓ Transparency accelerates adoption and buy-in
- **Is there Accountability =Is it challengeable**
  - AI can’t be a black box — humans must stay in control
  - ✓ Clear audit trails, ethical reviews, human oversight
  - ✓ Easier to adapt to regulation and mitigate failure

Trust is *earned* —through **principles** in action.

Ethics isn’t a sign-off. It’s a conversation – from day one.

No matter how clever your AI is, adoption beats ambition. Every time.

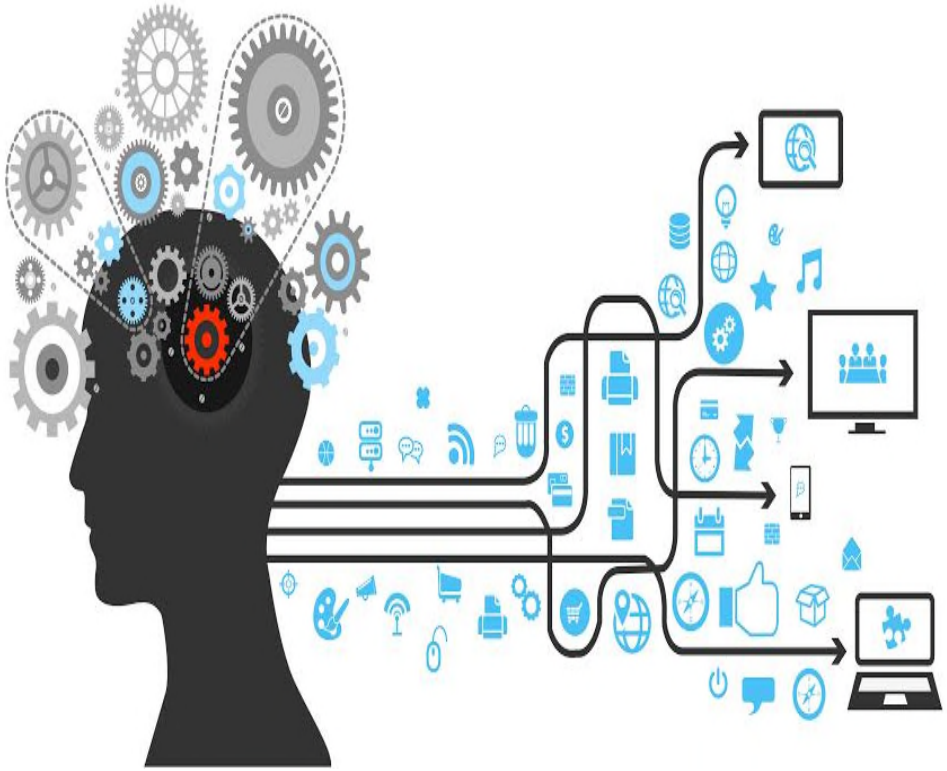
Phase	Ethical Focus	Practical Approach
Problem Framing	Purpose alignment	Is this problem worth solving with AI? Who benefits?
Data Sourcing	Privacy & representativeness	Is the data diverse, secure, and permissioned?
Design	Explainability & inclusion	Can users understand and challenge outcomes?
Development	Fairness & robustness	Are models tested for bias, drift, and blind spots?
Deployment	Accountability & transparency	Is oversight clear? Are outputs auditable and traceable?
Feedback & Iteration	Continuous improvement	Is there a process for monitoring, feedback, and tuning?

3 Responsible Innovation in Action

How do we take all this – the data, the ethics, the trust – and make it stick ?

Responsible Innovation in Action

"We are witnessing an explosion in AI R&D.



Explosive R&D Growth: Global investment in AI R&D **surpassed $135 billion in 2023**, with over 110 countries incorporating AI into their national innovation agendas. (Source: Stanford AI Index 2024)

Corporate Adoption & Innovation: **64% of global companies report AI is helping** them gain a competitive edge through faster product innovation. (Source: McKinsey Global Survey on AI 2023)

Patent Explosion: AI-related patent filings have grown **30x** over the past decade, led by machine learning and computer vision domains. *(Source: WIPO, 2023)*

Australia's Role: AI is a key pillar in Australia's **National Science and Research Priorities** and is expected to contribute **$315 billion** to the economy by 2030. *(Source: CSIRO and AlphaBeta)*

Ethics-Driven Innovation: **72%** of public sector leaders in OECD countries now prioritize **ethical innovation** in AI deployment. *(Source: OECD Observatory on AI, 2024)*

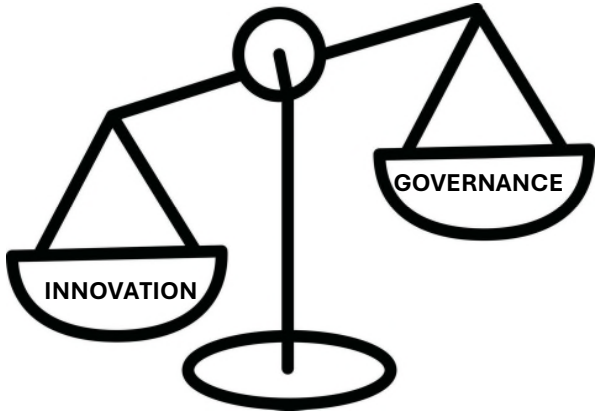
Innovation isn't a side hustle. It's a cultural rhythm.

The Innovation-Governance Tension

With great power comes great responsibility

📉 Why It Matters

- 84% of AI failures traced to governance gaps (Source: MIT Sloan, 2023)
- AI models trained on biased data can amplify inequality and reputational harm
- Poor oversight leads to "black-box" decisions no one can explain or defend



📈 Governance Enables Innovation by

- Building **public trust** → greater adoption
- Ensuring **regulatory alignment** → fewer delays and penalties
- **Driving ethical design** → better long-term outcomes
- **Protecting data rights** → reducing litigation risk

🧭 **Why We Govern** *(Principles)*	🏛️ **How We Govern** *(Frameworks)*	⚙️ **What We Do** *(Execution)*

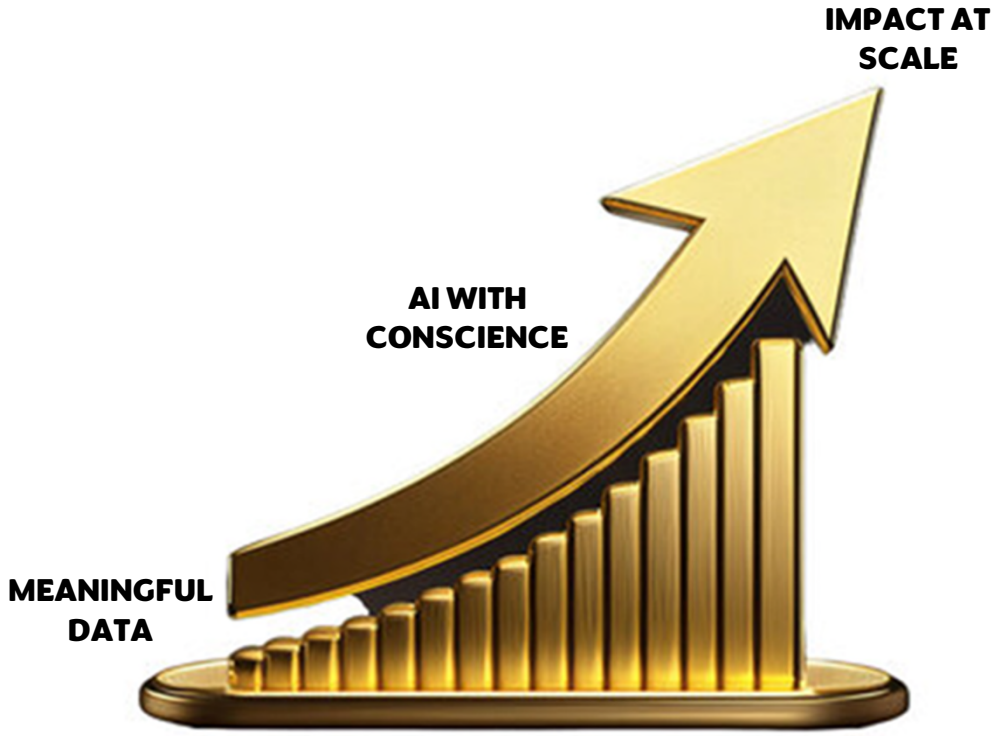
4 Conclusion

The Call to Action

Wrap Up

Call to Action ?

- **Start with meaningful data** – It's not about more data; it's about the *right* data. Relevance beats volume every time.
- **Embed trust from Day One** – Use global and local AI risk frameworks to guide responsible choices early, not after the fact.
- **Design for transparency** – Make your systems explainable and traceable. Trust fades when outcomes can't be understood.
- **Build in friction with purpose** – Create deliberate pause points: alerts, audits, human-in-the-loop. Safety isn't a speed bump—it's the seatbelt.
- **Champion ethical fluency** – Elevate ethics to the level of performance, uptime, or ROI. Make it part of the daily language of innovation



THANK YOU

"Ethical AI isn't a luxury – it's the foundation of sustainable innovation."