

# Bringing Vision to Ground (and Under)

A practical look at Gen (and Agentic) AI in mining

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# Unprecedented change in the Industry



## Market

Demand for minerals



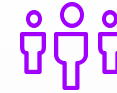
## Shareholders

Investors driving ESG transparency



## Consumers

Sustainable and responsible products



## Stakeholders

Stakeholder expectation and engagement



## Workforce

Shifting demographics and talent shortages

The mining industry is being **forced to reinvent itself**



Speed to discovery



Capital project control and resilience



Portfolio optimisation and step change improvement



ESG and Biodiversity focus



Talent transformation

# But our reality stands in stark contrast...



Commodity Price  
Pressure



Productivity  
Rates



Cost of Production



Mineral  
Security



Workforce  
Composition



Demand for Capital



"Taking on a challenge is a lot like riding a horse, isn't it?"

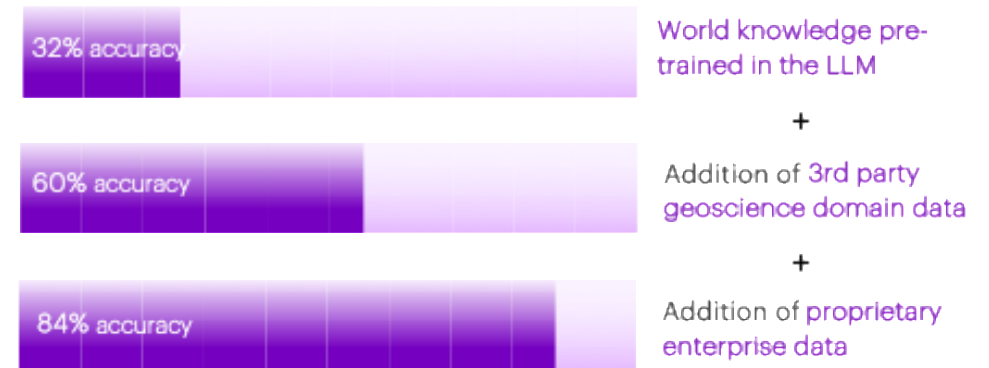
If you're comfortable while you're doing it, you're probably doing it wrong."

- Ted Lasso

# It's not all hype, there is (a lot of) truth...

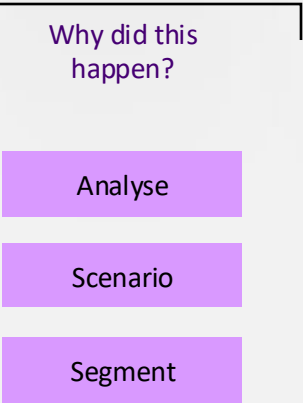
- Interest and **adoption of Gen AI faster** than any other technology
- Companies are realising the **need for AI holistically** which includes Generative and Agentic
- Gen AI has thrown the spotlight on the importance of data. **YOUR proprietary data is YOUR competitive advantage**, more than ever before
- Evolution of Gen AI from *'Consume to Customise'* and from *'Productivity to Strategic Differentiator'*
- Data privacy and **responsible use of AI** are leading to growing governance gap
- **AI Talent implications is across the board** for every enterprise unlike any other technologies before
- Gen AI the solution for unprecedented growth in **unstructured data**

A mining company example demonstrates how more data and context improves model accuracy



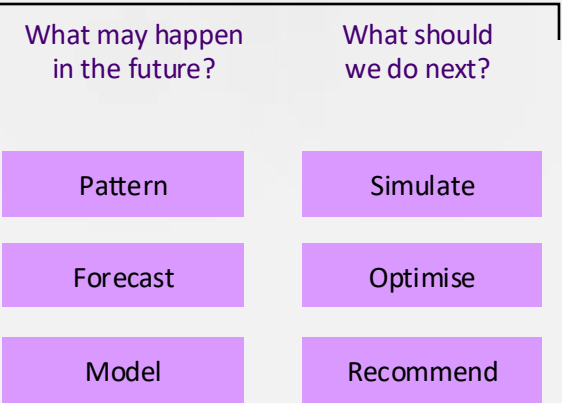
# AI Continuum

## Diagnostic AI



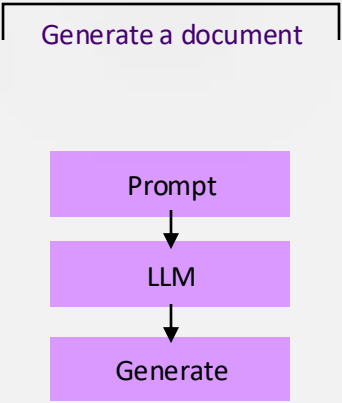
Example:  
Recognition  
Root cause analysis

## Predictive AI



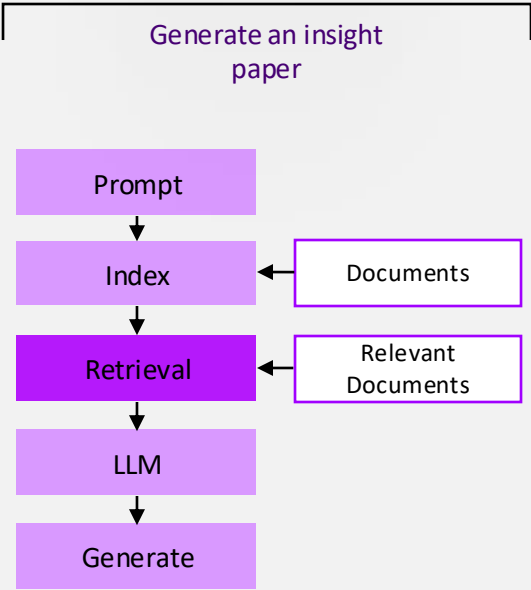
Example:  
Regression

## Gen AI



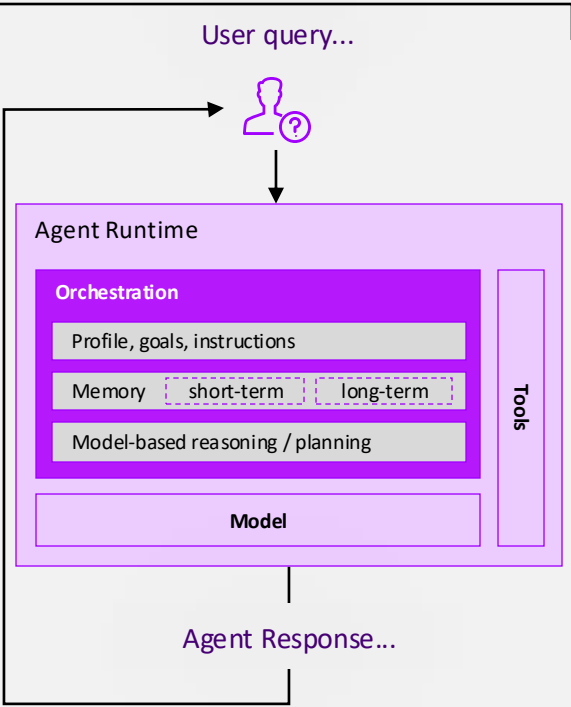
Example:  
Text,  
Images, Videos etc.

## Gen AI w/RAG



Example:  
Reports, Plans, Processes  
etc.

## Agentic AI



Example:  
LOM and  
Maintenance plan  
execution

# During SaaS & Cloud, we didn't see this rate of adoption

Insights from ~500 Gen AI/Agentic projects in Resources clients<sup>1</sup>

| Types of GenAI Applicability | Areas    |                                  | Use Cases                                                                                                                |
|------------------------------|----------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|                              | Advise   | Advisor for knowledge-based work | Advise on correlation, root cause and right actions/decisions                                                            |
|                              | Create   | Content generation               | Generate reports (e.g. geological, production, environmental, compliance), training materials, SOPs, safety manuals etc. |
|                              |          | Visual design and model          | Generate visual imagery for website or social media; create 3D models based on existing data                             |
|                              | Assist   | Application development          | Requirements generation/product definition, code generation                                                              |
|                              |          | IT operations                    | Conversational agents/customer services                                                                                  |
|                              |          | Quality engineering              | Test automation; quality management                                                                                      |
|                              | Automate | Business Process                 | Business process automation e.g. finance & accounting, procurement, legal & compliance                                   |
|                              |          | IT Process                       | IT process automation for areas in service management                                                                    |
|                              | Protect  | Information & Security           | Protecting against fraud and support regulatory compliance                                                               |
|                              |          | Governance                       | Identifying risks, dependencies and opportunities and proactively manage them                                            |

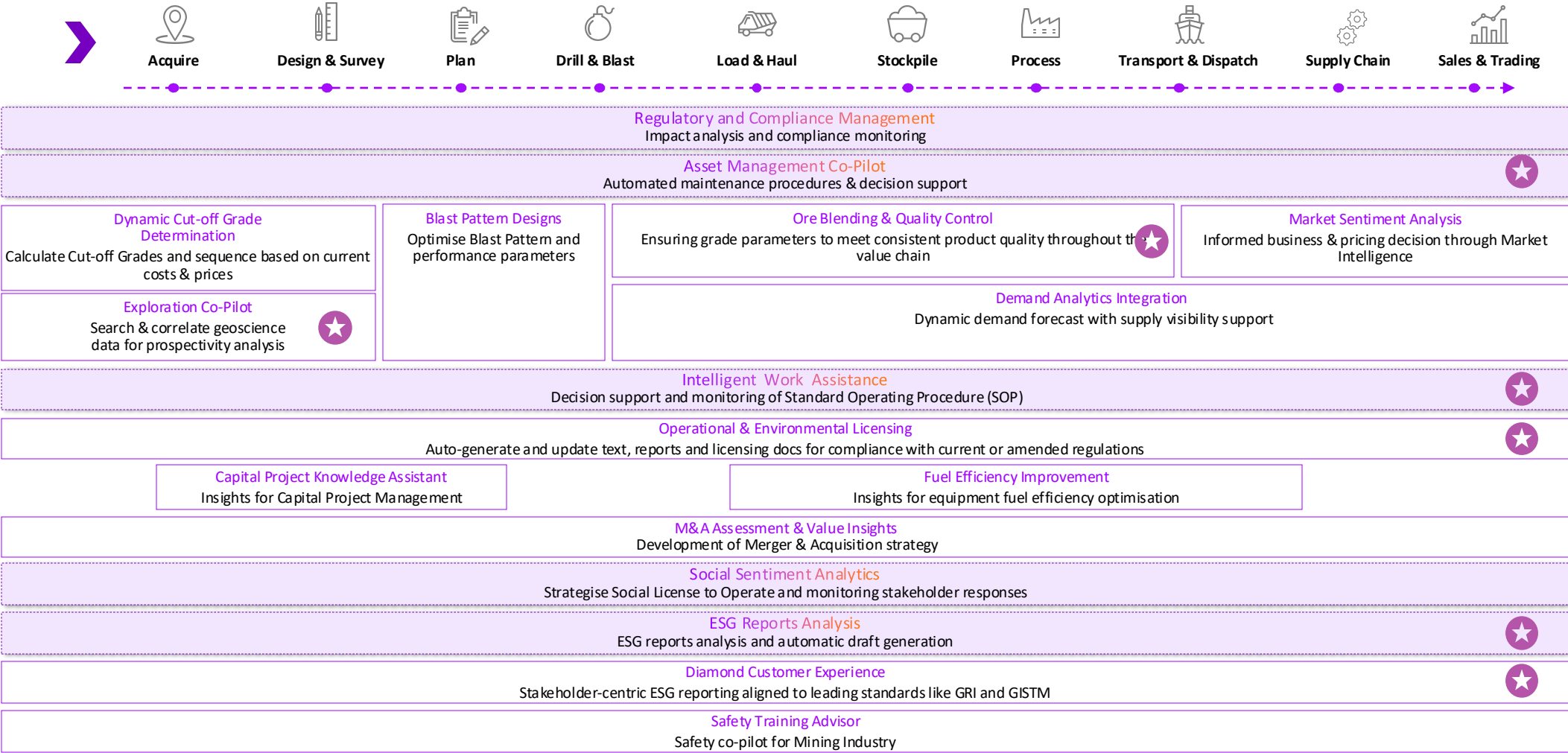
Notes: (1) Non-Exhaustive



**\$1 to \$3  
Billion**

*Estimated value of Generative and  
Agentic AI across the industry*

# Gen AI use cases across the Mining value chain



\*\*Industry agnostic use cases e.g., HR, Finance etc. are excluded here

“ The Matrix is a  
**system**, Neo. That  
**system** is our  
**enemy** ”

Morpheus



# Gen AI does offer enormous potential...

Foundation models are huge

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Rapidly generates original content

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Provides human-like experiences

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Adaptable

---

Fine-tuned with little data

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Provides multimodal deep learning

# ...but enterprises need to factor its limitations

Security vulnerabilities

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Difficult to interpret and validate output

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Learn biases easily

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IP protection unclear

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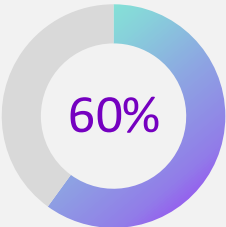
Produces authoritative answers, even when unaware

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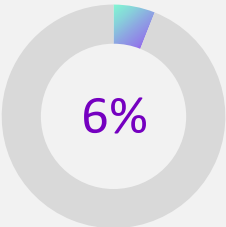
Does not understand semantics of the text

# Responsible AI in practice

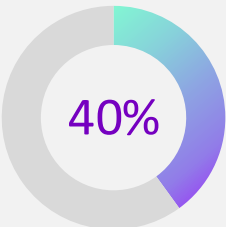
## Findings



of large enterprises will mandate formal data literacy and responsible AI training



have built a Responsible AI foundation and put principles into practice



of organisations will use AI-enabled risk and compliance solutions to monitor and predict non-compliance in real time by next year

## Fundamentals



Accuracy  
Transparency  
Fairness



Privacy  
Safety & Resilience  
Liability & Compliance  
Sovereignty



Accountability  
Accessibility  
Societal Benefits

Source: IDC, [Accenture Research](#)

# Risks and Mitigations

## Key Gen AI risks



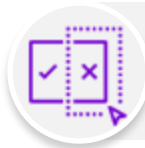
IP infringement, plagiarism and legal risks



Prompt hacking



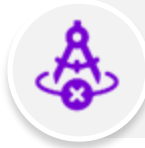
Biased questions and answers



Misinformation



Language toxicity



Inaccuracy



Proprietary and confidential information



Protection of AI output and security



Workforce displacement and readiness

## Proactive mitigation strategies

01

Clear governance and accountability

02

Updates to internal ways of working

03

A risk intelligent selection strategy for foundation models

04

Full model ownership and governance

05

'Run-time' technical controls

06

Human in the loop

07

Ethics and AI training

08

Responsible AI

“I belong to the warrior in whom the old ways have joined the new

”

Katsumoto



# Blending Human and Digital



## Humans



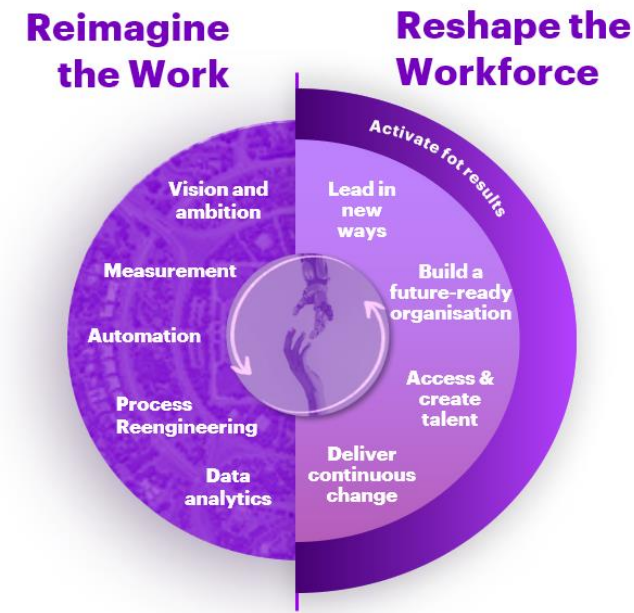
## Agents

- Roles will evolve, and work will become less transactional, and more **strategic**
- **Workforce capacity will be unlocked**, with expert talent remaining critical
- Humans will be trained to work with AI agents and continuously upskilled with **personalised learning** in the flow of work
- There will always be a '**Human in the Loop**' – handling interventions, QA, escalations etc.
- Companies will need to change the way they **recruit & promote** (e.g. *lattice vs ladder, skills-based*)

- Agents will take over **administrative, repetitive, and time-consuming tasks**, improving efficiency and accuracy
- **Multi-level agentic workforce** —from utility agents, foundational agents, and orchestrators — will interface with one another and with humans
- **Available 24/7 with infinite capacity**
- **Agents remember** past interactions and **learn**, and make **targeted** recommendations
- Agents will **self-enhance the workflow** over time
- Agents also need to be **managed, measured & maintained**

# Organisational readiness

**75%** of business leaders agree that their current operating models will be **unrecognisable** in the next 5 years



## Lead in new ways

- Leadership strategy
- Leadership capability assessment
- Rapid leadership development
- Identifying leadership potential
- Team development
- Cultural activation

## Build a future-ready organisation

- Organisation diagnostic (IOA)
- Operating model design
- Organisation design
- Strategic Workforce Planning
- Transition planning

## Access and create talent

- Reinvention of work tasks
- Job architecture
- Skill evaluation
- Accelerated learning

## Deliver continuous change

- Change maturity assessment
- Organisation change capability build
- Change activation

“ Your path **you  
must decide** ”

Yoda



# Enterprise Reinvention



## Reimagine **work**

- Automate and augment work
- Re-engineer processes around outcomes
- Enable data-driven decisions

## Lead with **strategy & value**



## Reshape the **workforce**

- Lead in new ways
- Build a future-ready organisation
- Access and create talent
- Deliver continuous change



## Redesign the **workbench**

- AI-powered tools
- Connected Platform
- Seamless user experience

Rewire the Digital Core to create a

## **digital brain**

Digital thread to connect all  
organisational functions

Leverage the power of  
ecosystem

Modern enterprise design  
(Human + Machine)

21 August 2031



Commodity Price Pressure



Productivity Rates



Cost of Production



Mineral Security



Workforce Composition



Demand for Capital

- No injuries for the last 24 months
- Greenfield mine development time down to 5 years
- Surpassed China as lowest cost producer of critical minerals
- Mining sector surpasses 500,000 FTEs and more than 2m agent workforce

# AUSTRALIAN TIMES

## AUSTRALIA'S MINING SECTOR CROWNED WORLD'S SAFEST AND MOST PRODUCTIVE



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# Thank You