accenture

How digital transformation is driving value across mining

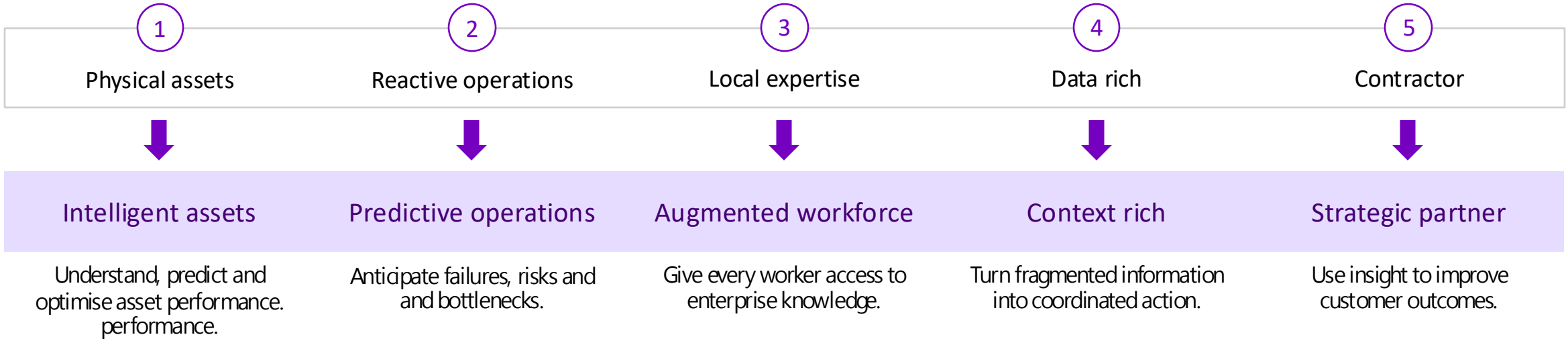
From insight to action

Sumit Sharma
Managing director Mining and resources, Engineering and Supply chain ANZ

11.11.2026

Five shifts are moving mining from operating assets to operating intelligence

The industry pressure is real; technology and AI are changing how organisations respond.



So what: The fastest movers solve one well-defined job with a clear owner, a payback, and results operators trust operators trust enough to act on. There are jobs robots can do today.

Copyright © 2026 Accenture. All rights reserved.

Robots already make inspection safer and more frequent; the value comes when the workflow can be trusted

Viable today

Safer.
Keeps people out of high-exposure areas: conveyors, tunnels, tunnels, active mining areas, confined spaces.

More frequent.
Consistent, repeatable inspection instead of periodic rounds that depend on who walks the route.

INPUT 1 Observe	INSIGHT 2 Orchestrate & Analyse	OUTPUT 3 Action
What data can we capture?	What does it mean, and how do we respond?	How do we act safely and efficiently?
Robots, drones, sensors, LiDAR, satellite and operations crews expand visibility.	Observations become trusted, contextual insights and coordinated, approved, executable work.	Executed through the right mix of operations crews, AR work instructions and robotic task execution.
Condition: findings accurate enough to act on	Condition: each finding tied to the right equipment	Condition: work raised automatically, with a with a person in the lead

Without a trusted workflow, a robot is just another data feed that someone has to review and re-key into another system.

Copyright © 2026 Accenture. All rights reserved.

Three inspection use cases: proven on conveyors, then validated with conditions in process plants and on haul trucks

Proven

Conveyor inspection and operator rounds rounds



Use case. Autonomous inspection of 1.4 km subsurface tunnel running from Unloading to Port Port facility. High predictive maintenance and HSE/safety objective reducing human exposure to exposure to unnecessary risk.
Approach. Quadruped and tracked robots run autonomous patrols, capturing thermal, visual data. Findings are tied to the equipment flow into maintenance work.
Where it stands. Validated in a tier 1 operating environment; now scaling from proof points to a to a connected capability.

Validated, with conditions

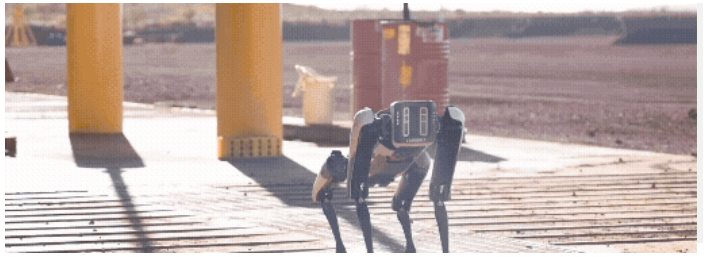
Process plant trials



Problem. Limited access to skilled workers at remote sites makes routine plant inspection staff consistently and safely.
Approach. A live quadruped trial in a copper concentrator mill, running remote-controlled and and semi-autonomous inspection missions.
Where it stands. Quadrupeds can support inspection, but performance depends heavily plant environment and operating model

Validated, with conditions

Autonomous haul truck inspection



Use case. Autonomous inspection of large haul haul trucks at the go line with an aim of reducing reducing human exposure to unnecessary risks, in risks, in line with goals of improved safety and and fatality elimination.

Copyright © 2026 Accenture. All rights reserved.

Closing the loop from inspection to action is what takes robotics from proof points to scale

Closing the loop: from sensing to decision to action

Robotic inspection data flows directly into asset health and maintenance systems, so findings become decisions and work, not another data feed.

Start with conveyors, then scale to other equipment and assets

What it takes to get there

The asset itself	Designed for people, not robots: build robot-ready walkways and platforms into capital projects.
The operating model	Safety, emergency response, storage, programming and maintenance must be designed in.
People stay in the loop	Humans still intervene, programme and maintain, with new safety considerations. considerations.



Process plant trial

Emerging

What we are seeing emerging: blast hole measurement



People walk the pattern and tape each hole, marking those outside design depth for rework. It is labour intensive and exposes people to the work area.

Inspection is paying off now. The next gains depend on workflows people trust and plant designed for robots.

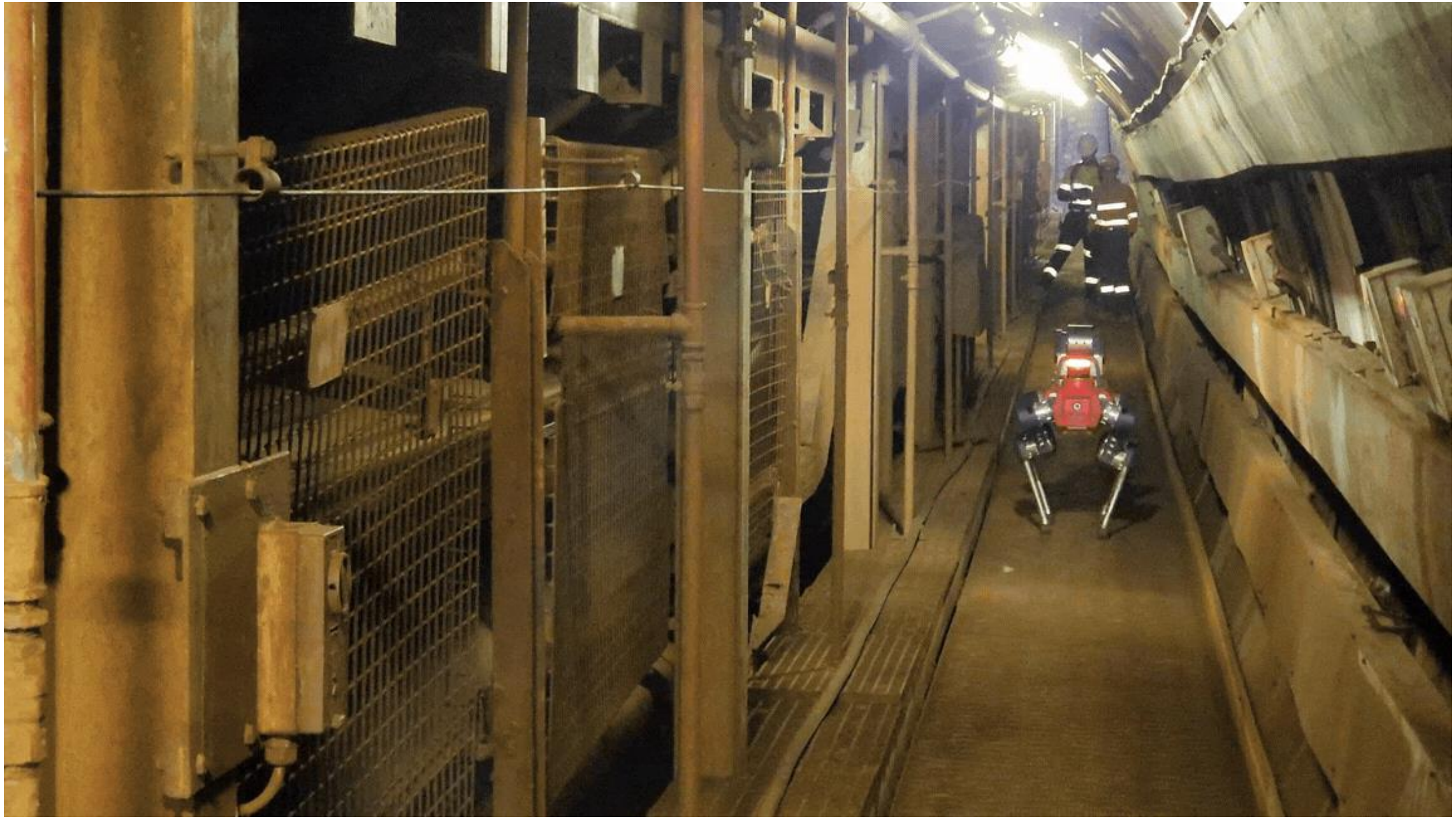
Copyright © 2026 Accenture. All rights reserved.

Thank you

Want to know more? Check out our whitepaper

Physical AI at scale. Manufacturing & Warehousing

Copyright © 2026 Accenture. All rights reserved.



In partnership with Chironix

Copyright © 2026 Accenture. All rights reserved.



In partnership with Chironix

Copyright © 2026 Accenture. All rights reserved.