accenture

From explore to ore

How data and AI can radically tighten the mineral exploration lifecycle

April 2025

Executive summary

It's no secret that mineral exploration companies face considerable challenges. Geopolitical risks are growing. Obtaining regulatory approval for exploration projects is getting harder in many places, as local communities, environmental groups and other stakeholders demand more sustainable practices.

In the meantime, discoveries of new mineral deposits are less frequent, and exploration timelines have extended significantly.

It now takes about 40% longer, on average, than it did just 15 years ago to get from discovery to production.

As companies seek to "tighten," or shorten their exploration lifecycles, artificial intelligence offers invaluable possibilities to help firms discover economic deposits faster and at a lower discovery cost. This report explains how certain companies are already turning AI's potential into tremendous results. Our research shows that four activities typical of mineral exploration are especially suitable for AI-led reinvention:

1. Prospectivity analysis and target generation
2. Advanced mapping and surveying
3. Analysis of drill data and ore body knowledge
4. Permitting and compliance

Despite the benefits that some exploration companies are reaping from AI, many firms are still not making the most of this capability. This report identifies three priorities—invest more, become data-ready and refocus talent and skilling strategies—that would enable exploration companies to realize the value of AI.

Authors

Liv Carroll
Managing Director—EMEA Mining Lead; Global Natural Resources Lead for Data & AI; Accenture's Global Mining Network Lead
liv.carroll@accenture.com

Liv leads the Accenture mining practice for EMEA and is the lead for data & AI across natural resources. She is also a Director on the Board of the Global Mining Guidelines Group.

Liv has more than 20 years' experience in exploration, mining, metals and quarrying, engaging with a range of stakeholders, including: listed and private mineral explorers; mining and metals operators; private equity firms; debt financiers; and government bodies. Liv works with C-suite and client teams to drive new business models, operational excellence, cost transformation and responsible mining. Liv believes innovation and partnerships are key to realizing value and decreasing risk through new ways of working—leveraging digital, data and AI—targeting safety, sustainability, productivity and profitability.

Liv's experience is supported by an MSc in Mineral Project Appraisal from the Royal School of Mines, Imperial College; a BSc (Hons) in Geology from Durham University; and executive courses in Behavioural Science & Decision Making (London School of Economics and Political Science) and Circular Economy—Sustainable Materials Management (Delft University of Technology). Liv is based in London, UK.

Dr. Bernd Elser
Senior Managing Director—Global Lead for Chemicals and Natural Resources, Accenture
bernd.elser@accenture.com

Dr. Bernd Elser leads the global chemicals and natural resources practice at Accenture. He manages a team of strategy, function, technology, industry and engineering professionals as they assist organizations to innovate, digitize, automate, generate growth and build resilience. With more than 20 years of experience, Bernd has helped companies across the chemicals, mining, metals, forest products and building materials sectors address their most challenging issues and extract value at the intersection of business and technology. His expertise covers strategy development and commercial, operational and functional excellence. Bernd is based in Frankfurt, Germany.

Sachin Kumar Chaudhary
Global Lead—Chemicals and Natural Resources Thought Leadership & Research, Accenture
s.d.kumar.chaudhary@accenture.com

Sachin Chaudhary leads the thought leadership and research group for Accenture's global chemicals and natural resources practice. He manages a team that develops data-driven insights and forward-looking industry perspectives to support clients' growth across chemicals, metals and mining sectors. Throughout his career, Sachin's extensive experience in research and consulting has helped many leading companies successfully navigate complex business challenges. He is based in Delhi, India.

Related research from Accenture

The mining industry's $67 billion blind spot

Powered for change

Decarbonizing the future of mining and metals

Mining's new role as champion of decarbonization

Acknowledgments

The authors thank the following Accenture colleagues for their contributions to this report:

Rahul Mathur
Managing Director—Mining and Natural Resources Portfolio Lead, Canada

Inga Seelemann
Principal Director—Resources Tech Strategy & Advisory Lead, Canada

Dhiraj Kumar Pandey
Research Manager—Natural Resources

Marketing + Communications

Louise Preedy
Toni-Ann Daly
Julie Day

Accenture Research

Ashish Kumar Gulgulia
Reshu Rathi
David Kimble
Sandra Najem

Mineral exploration companies face numerous challenges

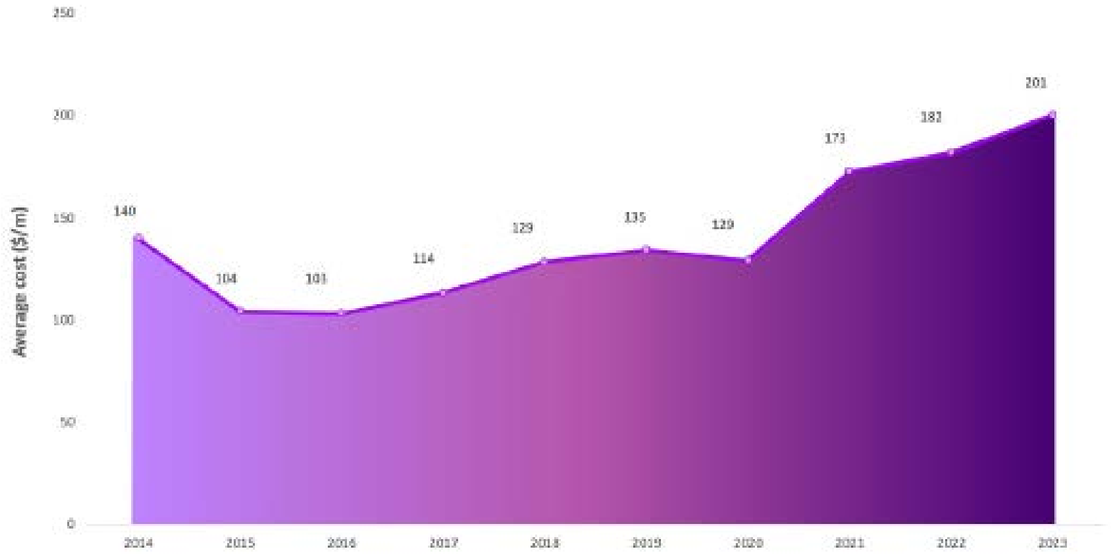
Geopolitical risks are mounting for the industry, with access to minerals increasingly being used by governments as chips in their countries' trade wars.[1] In response to this, many countries and regions are adjusting legislation to encourage, support and fast-track development of in-country critical mineral deposits.

Canadian legislation around restricting foreign investment and ownership was introduced in 2022, with updates in 2025 focusing on the size of the business, its place in the innovation ecosystem and, critically, the impact on Canadian supply chains—in an effort to "ensure Canadian interests remain adequately protected."[2] in March 2025, the European Union selected the first 47 projects that it believes will strengthen local extraction within the Union, a key step in implementing the EU's Critical Raw Materials Act 2024.[3]

Stakeholders' expectations for environmental and social governance around mineral exploration activities are changing, too. Many mineral exploration projects have been put on hold in recent years due to growing public scrutiny as communities, governments and environmental groups demand stricter environmental and social safeguards, including greater transparency and stronger commitment to sustainable practices, before granting project approvals.[4]

Meanwhile, in some areas, drilling costs are also going up. In Canada, on average, drilling costs went up from $140/meter in 2014 to $201/meter in 2023, as shown in Figure 1.

Figure 1: Up and up
Drilling costs in Canada have risen significantly since 2020



Source: Institut de la statistique du Québec

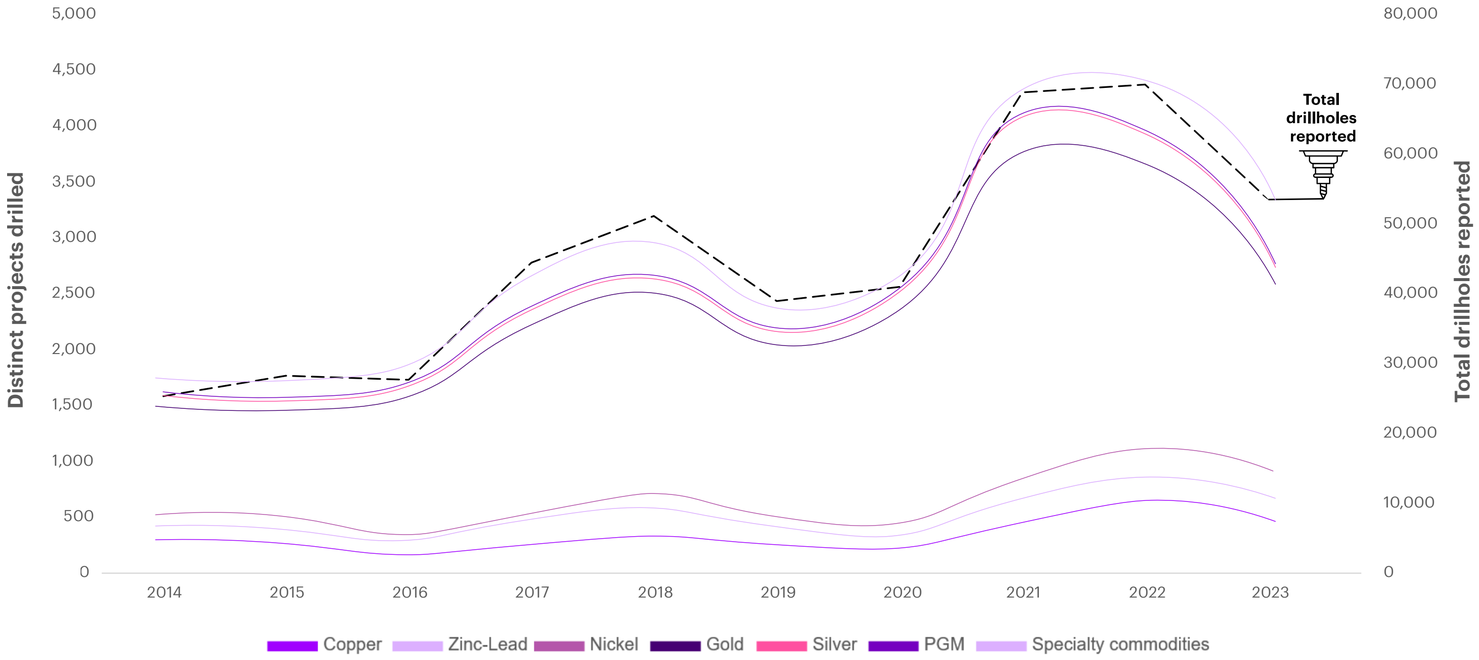
These days, it also takes a lot longer to get to production of ore and therefore generate revenue. For the average mine that came online during 2005–2008, it took 12.7 years to go from discovery to production, according to research published by S&P Global. Between 2020–23, the comparative figure was 17.9 years—40% longer.[5]

About one in 1,000 exploration projects results in a viable mine.[6]

Faced with mounting geopolitical risk, growing stakeholder demands, rising costs and longer lead times, exploration companies have also had to make do with only modest increases to their budgets. S&P reports that in 2010, 2,213 public and private companies with exploration budgets in excess of $100,000 collectively spent $11.5 billion exploring for non-ferrous metals; in 2023, the comparative figure was $12.9 billion.[7]

While the total number of drillholes reported globally rose from 25,356 in 2014 to 53,582 in 2023 (the most recent year for which data is available), a decline of 23% was recorded between 2022 and 2023, most notably for gold and copper (Figure 2).[8]

Figure 2: Up and down
Drilling activity has been inconsistent over the last decade

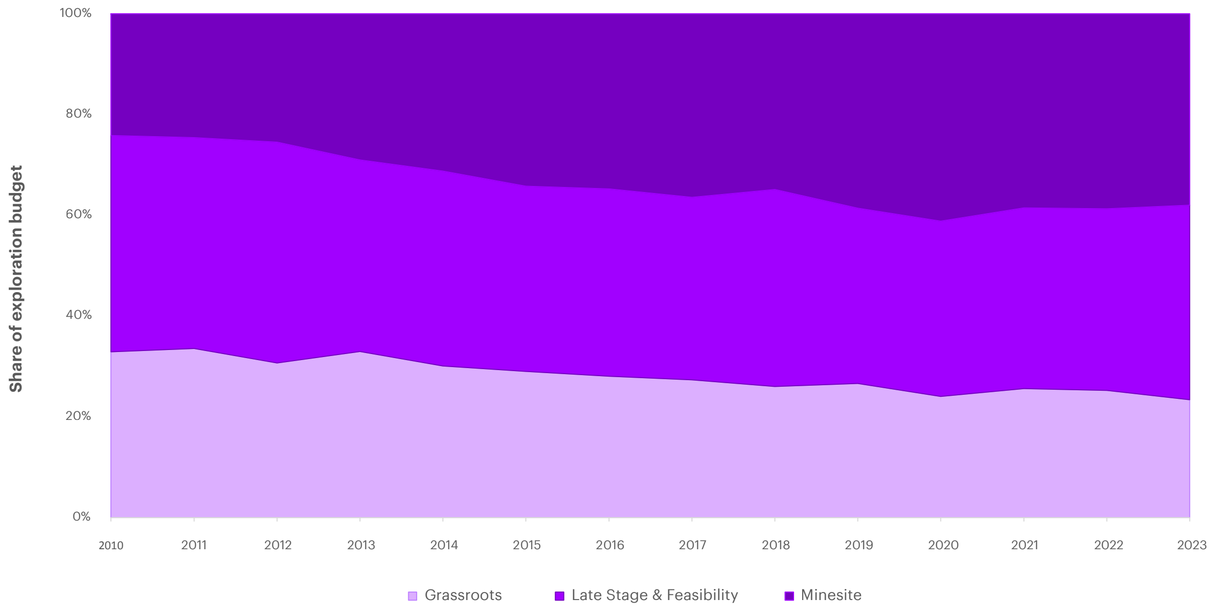


Source: S&P Global

Companies are increasingly investing in extending the life of existing mines. This is due in part to dwindling mineral reserves as well as declining grades; and because it is faster and cheaper to get minerals to market from existing operations where the infrastructure already exists. Going through the whole exploration lifecycle with a greenfield project—with all the permitting and social-license-to-operate hurdles that such a project entails—requires a much longer timeframe.

The impact of this can be seen in the share of mining companies' exploration budgets devoted to "grassroots" exploration. From 2010 to 2023, these budgets declined from 33% to 23%, while the share of budgets allocated to "minesites" rose from 24% to 38% (Figure 3).[9]

Figure 3: Less grassroots
Minesite exploration is receiving a greater share of exploration budgets



Source: S&P Global

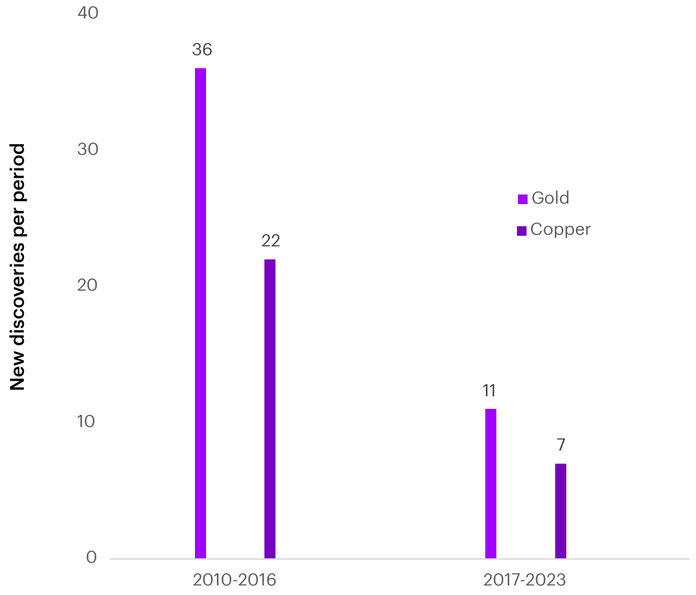
Meanwhile, the number of active exploration companies (public and private) with exploration budgets in excess of $100,000 has plateaued globally. In 2010, there were 2,213 such companies; in 2023, there were 2,238.[10]

Most near-surface, large deposits have already been found, which is also a factor in the shift in focus to brownfield exploration and the number of exploration companies remaining flat.

Evidence that discoveries are harder to come by can be seen in the drop in major copper and gold discoveries over the last 15 years. Between 2010 and 2016 (Figure 4) there were 22 significant copper discoveries and 36 significant gold discoveries. Between 2017 and 2023, these numbers dropped to seven for copper and 11 for gold.[11] The move from near-surface exploration to under-cover exploration (where deposits are covered by layers of rock) requires a change in perspective, technique and the leveraging of new technology.

Figure 4: Bonanza no more
Discoveries of gold and copper are becoming less common

Source: S&P Global



Brownfield exploration: challenges and opportunities

"Brownfield" exploration occurs near existing mines. It involves looking for satellite deposits, extensions to existing deposits or reexploring former operations that may have been shuttered for decades. Often, brownfield exploration can lead to the discovery of high-quality satellite deposits that can feed the existing mine and processing infrastructure. This, in turn, can reduce the need for new capital investment and keep existing operations going.

On the other hand, lower-quality deposits, which can also be found through brownfield exploration, require more extensive processing—and, thus, increase costs. Aging mines also need more maintenance and investment to remain productive. Aging mines are typically more energy and water intensive as well, which can lead to both higher carbon emissions and increased regulatory scrutiny.

How AI is transforming the exploration lifecycle

As mining companies face these challenges, improvements in data and artificial intelligence, including generative AI, are allowing firms to reinvent how they search for minerals and gather ore-body knowledge. Here's how.

Collation and curation of geological, geophysical and geochemical data traditionally requires significant manual effort, geoscience expertise and time-consuming processes. AI can help companies rapidly uncover correlations within vast, complex datasets—thereby increasing speed to discovery through faster analysis and geological modeling, accelerating decision-making, reducing discovery costs and mitigating risk.

In other words, AI is bringing incredible speed, precision and scalability to data collation and analysis.

In our experience, four key activities of the exploration lifecycle are being transformed by AI.

AI accelerates prospectivity analysis and target generation

One of the biggest challenges in exploration is deciding where to explore for mineral deposits, though prospectivity analysis for area selection and reconnaissance field work help narrow down the area. In the past, geoscientists needed to painstakingly analyze both remote sensing data and historical data, collect samples from the field and then make decisions about the prospectivity of an area. This process, however, is often slowed by the fact that an exploration company's data is not available in a single portal. As a result, the time required to collate and process the data into an accessible and analyzable format often leads to unnecessary effort and delays to decision making, as well as higher costs.

With the support of AI, prospectivity analysis can be undertaken more rapidly to greater success. Machine-learning algorithms can analyze multi-discipline geoscience data to identify geological trends, compare with known deposit styles and then predict high-prospectivity areas with much greater accuracy and at a faster rate.

Consider a few examples. **Fleet Space Technologies** is enabling mineral-exploration groups to leverage satellites for multi-physics modeling and updates of those models in significantly reduced timeframes. The company uses AI to process multispectral and geophysical data to identify subsurface anomalies. The rolling updates of the models are opening new frontiers for mineral discovery, particularly with deposits under cover—such as Australia's Macquarie Arc—and accelerating discoveries.[12]

VerAI Discoveries is using AI in its "mineral asset generator," focusing on geophysical data to identify prospective ground, particularly deposits under cover. Once identified remotely, the company then seeks to acquire the exploration license and/or partner with local entities to accelerate exploration on the ground. VerAI Discoveries is applying this approach in Chile, utilizing AI as a tool for portfolio review to make more informed decisions—both where to acquire and when to drop "staked ground." By doing this, the company reduces risks by ensuring that funds are applied only to the most promising areas.[13]

Emperor Metals, an exploration and mining company focused on Canada's Southern Abitibi Greenstone Belt, leveraged AI to rapidly create a mineralized model for its flagship Duquesne West Gold Project, while building a full 3D geological model in just months. This enabled the company to identify high-priority targets and rethink the conceptual model for the deposit, positively shifting the economics of a future operation.

"We're not just drilling blindly anymore,"

said John Florek, CEO of Emperor Metals, to Mining NewsWire, an industry news website. "Thanks to AI, we intercepted grades of 15.8 grams per ton 10.85 meters—data that reshaped our exploration strategy and confirmed the potential for an open-pit operation."[14] Emperor's approach of leveraging AI to reanalyze historical data of overlooked deposits is opening up the potential for new discoveries.[15]

AI facilitates advanced mapping and surveying

Geological mapping is central to exploration, but traditional mapping techniques rely on manual interpretation, which can be subjective and prone to errors. Many exploration areas are remote, hard to access, covered in dense vegetation or terrain hazards and require multiple land access permissions—so mapping and surveying are slow processes.

Digital terrain models are essential for accurate mapping, surface sampling location and placement of drill collars, ensuring that the data captured, samples taken and any ensuing assay results have known coordinates and therefore can be used for modeling.

Today, AI-powered remote sensing tools are increasingly being used across the industry. Using satellite and drone-based imaging, a digital elevation model (DEM) or digital terrain model (DTM) can be rapidly generated and alteration and mineral signatures detected remotely. This reduces footprint, cost and risk for field workers, and enables the explorer to generate targets remotely, reducing early-stage exploration activities that may not be fruitful.

BHP now uses drones that are equipped with military-grade cameras. These drones are being used for "mineral surveillance," among other use cases, and provide real-time aerial footage and 3D mapping. "This is far cheaper than using planes for survey work," said Frans Knox, BHP's head of production for mining, to MINE Australia, a magazine. BHP estimates that replacing plane-based surveys with advanced drones has saved the company AU$5 million annually at its sites in Queensland, Australia alone.[16]

Advanced remote sensing and geospatial analysis using drone technology and AI are also transforming gold exploration in Botswana, helping exploration firms overcome the challenges posed by the thick cover of the Kalahari sands. **Farmonaut**, a company that previously focused on the agriculture sector and satellite-based crop health monitoring, is repurposing precision agriculture tools and methodologies for mineral exploration.

These include drone-based magnetic surveys, analysis of satellite imagery and adapting agriculture-soil analysis methods to mineralization. These technologies offer extensive terrain coverage, automated data collection, AI-powered data interpretation and reduced environmental impact, significantly advancing **North Arrow Minerals'** Kraaipan Gold Project.[17]

Esri's geographic information system software, "ArcGIS," is widely used across exploration and enables geoscientists to synthesize field data, using mapping and analysis tools to visualize, share and communicate field observations. To support the use of AI, Esri has made 75 pre-trained AI models available in ArcGIS for various uses, including the identification of buildings, roads and vegetation, which can assist with field-work planning and logistics. In addition, Esri has integrated geospatial AI capabilities into ArcGIS to support AI workflows, including the building and training of AI models.

Fleet Space Technologies is also reducing the timeline for survey-data analysis. Typically, such analysis would require about 10 weeks before actionable insights could be drawn. Fleet Space Technologies has, however, reduced this timeline to just one week by using AI to dramatically accelerate data processing.[18]

AI enables improved analysis of drill data and ore body knowledge

Traditional drill-data analysis relies on manual core logging and laboratory-based assays—the results of which take weeks, if not months, to return. This limits real-time decision-making during the drill campaign, increases exploration costs and increases the risk that critical geological insights are missed.

AI-powered core-scanning technologies—including hyperspectral imaging and high-resolution core photography—can provide geoscientists with rapid, accurate and consistent drill-core insights without waiting for traditional assay results. Couple this drill data analysis with AI-enabled, 3D predictive models, and geoscientists are equipped to make in-field, informed decisions, such as calling the end of a hole or determining the next drilling location. This results in significantly shortened exploration timelines and considerably improved operational efficiency.

Hyperspectral imagery and laser-induced breakdown spectroscopy (LIBS) are becoming increasingly common. LIBS provides geologists with insights on lithology, alteration and mineralization in the field to support core logging—and LIBS does this far more quickly than the return of assay results. For example, **Corescan's** Hyperspectral Core Imager incorporates AI sensors into auto-scan core trays, rock chips and other sample material, providing high-speed data acquisition, quality control and system-health monitoring, while doing all this on-site in remote environments.[19]

St Barbara, an Australia-based mining company, leveraged advanced AI algorithms to classify material types in their operations based on recovery characteristics, identifying additional sulfide materials suitable for carbon-in-leach treatment. This allowed the company to reclassify 3.7 million tons of material at 1.2 grams per ton of gold at its Simberi mine in Papua New Guinea.[20] As a result, St Barbara can now recover more gold from existing resources through its existing flowsheet, increasing revenue and reducing waste—without additional exploration expenses.

AI streamlines permitting and compliance

Regulatory approvals remain one of the biggest obstacles to advancing exploration projects, from discovery to first ore. Obtaining permits requires extensive documentation, environmental assessments and adherence to evolving regulations. These hurdles often delay projects by months or years.

AI can streamline the permitting process by analyzing regulatory requirements, as well as historical permit approvals and project-specific factors, such as environmental and social impact assessments, heritage data, biodiversity considerations and proximity to protected areas as well as communities. AI can generate draft applications, ensure compliance with environmental standards and predict potential regulatory hurdles so they can be addressed before they arise. Among other benefits, AI's ability to streamline permitting and compliance reduces the scope for human error, speeds up submissions, supports standardization of submitted materials and enables companies to navigate complex legal frameworks far more efficiently.

A **leading iron ore producer** in Western Australia streamlined permit approvals by developing a sophisticated digital platform, which manages over 1,000 requests annually.[21] The system automates compliance checks, integrates geographic information system mapping, helps the company comply more efficiently with the many environmental and heritage site regulations, and supports its maintenance of the social license to operate.

Unlock AI’s full potential

From pinpointing high-potential mineral deposits to minimizing environmental impact, AI can make every stage of the exploration lifecycle more accurate, efficient and cost-effective. Yet our research also shows that relatively few companies are unlocking AI's full potential. Below, we note some of the biggest hurdles—and explain how to overcome them.

Invest more

Despite AI's great potential to transform how mineral exploration is conducted, many companies remain hesitant to spend aggressively on the required technology. While exploration-specific data regarding investment in AI is not available, Global Data, an analytics firm, reports that mining companies currently devote only 2–6%, on average, of their external information and communications technology budget to data and AI.[22]

So what's the right amount of spending on data and AI? It will inevitably vary by industry and company. Recent research by Accenture—which examined 2,000 large companies across nine industries—suggests that mining companies' current investment levels are much too low: Among companies that are succeeding at scaling their AI initiatives across their entire organization, the study found that spending on cloud and artificial intelligence accounts for 51% of these companies' tech budgets, on average.[23]

Become data-ready

Many exploration companies already use AI, but typically only on small subsets of their data. That's because most of their data is not available in a format that AI can use effectively.

When an exploration group is "data-ready," it has high-value data that has been validated for quality, is readily available and is in an analyzable format to generate the insights and models required. The silos that typically sit across the geosciences (geophysics, geology and geochemistry) have been overcome through data schemas and the right tooling—including cloud—to enable data interoperability. And data is managed, maintained and operated in a responsible way.

A lack of data-readiness is not a challenge that is unique to mineral exploration. A previous report by Accenture found that 47% of surveyed CXOs said that data readiness was the top challenge that their company faced in applying generative AI effectively.[24]

A checklist to become data-ready would include the following points:

- Establish a cloud-based infrastructure
- Adapt data architecture, engineering and management capabilities for new data types. Evaluate ecosystem partners
- Adopt a "data-product" mindset.
- Implement responsible data policies and automate tooling to determine data compliance and regulatory needs for AI
- Create a "central-design" authority for data use
- Develop the skills of data practitioners and domain experts
- Establish systems to track and optimize the costs and use of data—which is essential in exploration, where revenue generation is years away.[25]

Refocus talent and skilling strategies

Recruiting younger workers continues to be a considerable challenge in the mining and exploration sector. It's no coincidence that enrollment in undergraduate mining engineering, geophysics and geology courses is dropping. For example, the Colorado School of Mines saw its enrollment drop 35% between 2013 and 2023; the UK Camborne School of Mines has seen enrollment fall so low that, in 2023, the school paused intake for new students and pivoted to programs for existing mining employees, while rewriting the curriculum with the input of industry.[26]

"Shortages are a very real risk and everyone in the industry is talking about it," said Nadia Mykytczuk, executive director of the Ontario-based Goodman School of Mines at Laurentian University, to Reuters.[27]

Research also suggests that the industry is struggling to cultivate digital skills in the workforce: In one survey, 73% of firms said their employees' lack of digital skills is a major hurdle to implementing AI and other technology into their processes.[28]

As AI becomes more central to the activities of exploration and mining firms, nearly every job will be impacted. Some jobs will be eliminated, most will be transformed and many new ones will be created. Companies will need to "decompose and recompose" jobs into tasks, reconstitute processes and invest in training people to work more productively alongside machines.[29]

Refocusing talent and skilling strategies is required to teach employees how to leverage AI and when to delegate to AI, while maintaining the necessary level of human validation and traceability. Workers should be trained to teach AI agents, like ChatGPT, new skills, as well as how to effectively "prompt" an AI agent to get the desired information from their exploration or ore body knowledge data. Employees also need to acquire the knowledge to ensure that their companies' AI systems are being used responsibly.[30]

Win the exploration race

The race to discover and develop critical mineral deposits is not new, and the winners have always been those that innovated first. Today, innovations in technology are happening at a faster pace than ever before.

High-resolution satellite imagery and hyperspectral data are providing new insights much earlier in the exploration lifecycle. Advanced survey technologies, such as LiDAR, group penetrating radar (GPR) and muon tomography, as developed by Canadian tech company Ideon, are allowing explorers to map and model deposits in 3D and 4D—thereby improving the chances of both discovery and ore-body knowledge for improved recovery.

With ever-increasing volumes of data and challenges with interoperability that need to be solved, leveraging AI is the key to unlocking value, reducing risk, minimizing cost, making discoveries and maximizing mineral recovery. Exploration and mining companies that figure out how to use AI effectively—and, especially, before their peers do—will be well positioned for success.

References

1 https://www.csis.org/analysis/geopolitics-critical-minerals-supply-chains

2 https://ised-isde.canada.ca/site/investment-canada-act/en/updated-guidelines-national-security-review-investments

3 https://www.mining.com/eu-unveils-47-strategic-projects-to-secure-critical-minerals-access/

4 https://www.afr.com/companies/mining/gold-miner-says-1b-project-unviable-after-plibersek-intervention-20240819-p5k3gj

5 https://www.spglobal.com/market-intelligence/en/news-insights/research/average-lead-time-almost-18-years-for-mines-started-in-2020-23

6 https://www.qmxgold.ca/economic-factors-to-consider-in-mineral-exploration/

7 “Non-ferrous” metals are those that are not primarily composed of iron, such as copper, aluminum, nickel, zinc, lithium, cobalt, gold and silver. See https://www.spglobal.com/market-intelligence/en/news-insights/research/ces-2023-monetary-tightening-weighs-down-exploration-activity

8 https://www.spglobal.com/market-intelligence/en/news-insights/research/world-exploration-trends-2024

9 Ibid.

10 https://www.spglobal.com/market-intelligence/en/news-insights/research/world-exploration-trends-2024

11 https://www.spglobal.com/market-intelligence/en/news-insights/research/gold-from-major-discoveries-grows-3-although-recent-discoveries-remain-scarce; https://www.spglobal.com/market-intelligence/en/news-insights/research/major-copper-discoveries

12 https://www.fleetspace.com/newsroom/fleet-space-inflection-resources-advance-sustainable-data-driven-copper-exploration-with-spacetech-ai-in-australias-macquarie-arc

13 https://projects.gbreports.com/chile-mining-2024/verai-discoveries-interview

14 https://www.miningnewswire.com/how-ai-is-transforming-mineral-discovery-and-driving-efficiency/

15 https://www.miningnewswire.com/how-ai-is-transforming-mineral-discovery-and-driving-efficiency/

16 https://mine.nridigital.com/mine_australia_yearbook_2018/how_drones_are_changing_the_art_of_mineral_surveying

17 https://farmonaut.com/africa/revolutionizing-botswanas-gold-exploration-advanced-remote-sensing-and-drone-technology-unveil-hidden-treasures-beneath-kalahari-sands/

18 https://www.fleetspace.com/newsroom/fleet-space-technologies-revolutionises-mineral-exploration-with-launch-of-exosphere-by-fleet#:~:text=Fleet%E2%80%99s%20new%20product%20is%20a%20first-of-its-kind%20system%20that,up%20to%20100%20times%20faster%20than%20traditional%20methods

19 https://corescan.com.au/products/hyimager/

20 https://stbarbara.com.au/wp-content/uploads/2024/05/2024.05.07-asx-release-simberi-ai-collaboration-success.pdf

21 https://www.endava.com/case-studies/leading-mining-company-streamlines-permit-process-with-integrated-management-system

22 https://www.globaldata.com; https://www.idc.com. An “external” ICT budget refers to allocations to third-party services, vendors and external-technology solutions, rather than to spending on in-house IT operations.

23 https://www.accenture.com/us-en/insights/consulting/making-reinvention-real-with-gen-ai. The nine industries are: life sciences, insurance, utilities, communications and media, banking, energy, consumer goods and services, public services and retail.

24 https://www.accenture.com/content/dam/accenture/final/accenture-com/document-3/Accenture-Is-Your-Data-Ready-To-Power-AI-Reinvention-Report.pdf

25 Ibid.

26 https://www.bloomberg.com/news/articles/2023-09-01/it-s-getting-harder-to-find-mining-engineers-a-green-world-needs

27 https://www.reuters.com/sustainability/society-equity/canadian-mining-firms-fear-ability-meet-soaring-demand-jobs-crisis-stalks-land-2024-11-07/?utm_source=chatgpt.com

28 https://mining.com.au/closing-digital-skills-gap-imperative-to-upskilling-minings-workforce/

29 https://hbr.org/2023/12/genai-will-change-how-we-design-jobs-heres-how

30 https://hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces

About Accenture

Accenture is a leading global professional services company that helps the world's leading businesses, governments and other organizations build their digital core, optimize their operations, accelerate revenue growth and enhance citizen services—creating tangible value at speed and scale. We are a talent- and innovation-led company with approximately 799,000 people serving clients in more than 120 countries. Technology is at the core of change today, and we are one of the world's leaders in helping drive that change, with strong ecosystem relationships. We combine our strength in technology and leadership in cloud, data and AI with unmatched industry experience, functional expertise and global delivery capability. Our broad range of services, solutions and assets across Strategy & Consulting, Technology, Operations, Industry X and Song, together with our culture of shared success and commitment to creating 360° value, enable us to help our clients reinvent and build trusted, lasting relationships. We measure our success by the 360° value we create for our clients, each other, our shareholders, partners and communities.
Visit us at accenture.com.

About Accenture Research

Accenture Research creates thought leadership about the most pressing business issues organizations face. Combining innovative research techniques, such as data-science-led analysis, with a deep understanding of industry and technology, our team of 300 researchers in 20 countries publish hundreds of reports, articles and points of view every year. Our thought-provoking research developed with world-leading organizations helps our clients embrace change, create value and deliver on the power of technology and human ingenuity.
Visit us at accenture.com/research

About this research

This report analyzes key trends in mineral exploration and identifies real-world examples of companies utilizing data and AI in the mineral-exploration value chain. The resulting insights are drawn from extensive secondary research—industry reports, company disclosures, proprietary-research platforms and AI-driven assessments.

The material in this document reflects information available at the point in time at which this document was prepared as indicated by the date provided on the front page, however the global situation is rapidly evolving and the position may change. This content is provided for general information purposes only, does not take into account the reader's specific circumstances and is not intended to be used in place of consultation with our professional advisors. Accenture disclaims, to the fullest extent permitted by applicable law, any and all liability for the accuracy and completeness of the information in this document and for any acts or omissions made based on such information. Accenture does not provide legal, regulatory, audit, or tax advice. Readers are responsible for obtaining such advice from their own legal counsel or other licensed professionals. This document refers to marks owned by third parties. All such third-party marks are the property of their respective owners. No sponsorship, endorsement or approval of this content by the owners of such marks is intended, expressed or implied.