

Commercial Due Diligence & Investment Research
AI Value Creation Assessment
Heidelberg Materials

Company: **Heidelberg Materials**
Sector: **Building Materials**
Region: **Global**

Prepared by: **Cohres Ltd**
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Assessment Purpose

Evaluating the Commercial Credibility, Economic Attractiveness and Execution Feasibility of AI-Enabled Value Creation

Prepared using publicly available information and Cohres analysis. This assessment evaluates whether AI-enabled value creation assumptions underpinning the investment case are commercially credible, economically attractive and realistically executable.

EXECUTIVE SUMMARY

Company Overview

[Heidelberg Materials](#) is one of the world's largest integrated manufacturers of heavy building materials and solutions, employing approximately 49,000 people across operations in almost 50 countries¹. Its core activities include cement, aggregates and ready-mixed concrete, supported by downstream activities in asphalt and other building products.

Management's Digital and AI Value Creation Direction

Heidelberg Materials positions digitalisation, automation and AI as contributors to operational performance under Strategy 2030. Public evidence indicates that selected applications have progressed beyond experimentation, including production planning across more than 70 cement plants, Batch AI across 10 plants and a multi-site autonomous haulage rollout.

The investment relevance is concentrated in production efficiency, energy and resource consumption, asset reliability and logistics. Cohres does not underwrite AI-enabled revenue transformation as a material component of the investment case.

Overall AVCA Opinion

Heidelberg Materials has demonstrated sufficient evidence to underwrite AI as credible operational upside, but not as a material standalone driver of group valuation.

The strongest evidence sits in production optimisation and energy efficiency, where deployments have reached multiple plants and measurable operating benefits have been reported. The company's scale means relatively small improvements in material consumption, energy intensity, throughput or asset utilisation could become financially meaningful if replicated consistently across the network.

The principal underwriting gap is no longer whether selected applications can work. It is whether Heidelberg Materials can convert demonstrated plant-level improvements into repeatable group-level economics after implementation costs. Public disclosure does not yet establish project-level ROI (Return on Investment), realised



payback or a consolidated bridge from AI initiatives to margins, free cash flow and ROIC (Return on Invested Capital).

Cohres view: Favourable with verification required.

Principal Strengths

- Core use cases target material plant-level cost drivers.
- Scale allows small improvements to become financially meaningful.
- The AI thesis does not rely on revenue transformation.
- Downside is limited because the core investment thesis remains intact.

Principal Risks

- Quantified benefits are disclosed for selected initiatives, but their contribution to group-level margins, free cash flow and ROIC remains unverified.
- Several reported values represent expected annual potential rather than fully realised recurring savings.
- Deployment coverage varies materially by use case and remains incomplete across the wider operating network.
- Implementation costs, formal project-level ROI and realised payback periods remain undisclosed.
- Heidelberg Materials does not disclose a consolidated bridge separating AI-related value from wider digitalisation and operational-improvement programmes.

INVESTMENT CONTEXT & AI VALUE CREATION THESIS

Business and Investment Context

Heidelberg Materials reported revenue of €21.5B, result from current operations of €3.4B, free cash flow of €2.1B and return on invested capital of 10.4% for 2025². Under Strategy 2030, the company is targeting average annual growth resulting from current operations of 7–10% and ROIC of approximately 12%³. AI-enabled improvements should therefore be assessed according to whether they make a measurable contribution to these broader profitability, cash-generation and capital-efficiency objectives.

The underwriting question is therefore not whether Heidelberg Materials can deploy AI. It is whether AI can improve the economics of an already mature asset base sufficiently to contribute to margins, free cash flow and ROIC.

Core Underwriting Use Cases

Reported outcomes are classified as realised benefits, identified value opportunities, expected annual potential or deployment commitments. These categories should not be interpreted interchangeably.

Management's disclosures provide direct evidence of AI-supported batching, smart production planning⁶, automated inspection and autonomous haulage⁷. Cohres has grouped these initiatives into the operating categories most relevant to investment underwriting and has separately assessed resource and energy efficiency as a commercially credible but less directly quantified value-creation hypothesis.

Use Case	Evidence	Economic Driver	Cohres View
Production & process optimisation	Batch AI live in 10 plants; >15ppt improvement in batch accuracy; identified material-saving opportunities	Material consumption, yield, variability	Highest conviction
Resource & energy efficiency	Planner deployed across >70 plants; millions of euros of reported energy savings	Energy cost, production efficiency	High conviction
Asset reliability & inspection	AI-enabled inspection applications disclosed; limited financial attribution	Downtime, maintenance, availability	Medium conviction
Autonomous haulage	Commercial rollout targeting >100 trucks following successful pilot	Fleet utilisation, labour intensity, extraction cost	Medium conviction
Direct AI-enabled revenue growth	No sufficient evidence	Revenue	Not underwritten

Value Creation Metrics

The value case should be assessed through operating metrics rather than the number of AI initiatives deployed.

Use case	Primary operating measures	Public evidence
Production and process optimisation	Throughput, yield, cement consumption, waste, production variability	Batch AI live in 10 plants ⁹ ; 15+ percentage-point batch-accuracy improvement ⁹ ; identified material savings
Resource and energy efficiency	Energy consumption per tonne, fuel efficiency, electricity cost, production stability	Planner deployed in more than 70 plants; millions of euros in energy savings
Asset reliability and automated inspection	Downtime, availability, inspection frequency, maintenance cost	Limited quantified group-level disclosure
Smart production planning	Electricity cost, scheduling accuracy, inventory availability	More than 70 plants using Planner
Quality optimisation	Cement use, rework, rejected output, consistency	SmartMix and Batch AI evidence; identified material-saving potential
Autonomous haulage	Haulage productivity, utilisation, cost, safety	Rollout across six sites; broader programme targeting more than 100 trucks across more than a dozen sites

Underwriting View

The highest-conviction opportunities are those directly connected to existing plant economics: material consumption, energy intensity, throughput and asset utilisation. Autonomous haulage and automated inspection are credible additional opportunities but lack sufficient disclosed financial evidence to assign comparable conviction.

AI creates value only if these improvements can be repeated across enough facilities to affect group-level economics. Successful pilots alone are insufficient.

AVCA ASSESSMENT

1. Strategic Role of AI Within the Investment Thesis

AI is strategically relevant but not thesis-critical. Strategy 2030 explicitly identifies automation, AI and digitalisation as operational value drivers, but Heidelberg Materials' economics remain primarily determined by construction demand, pricing, asset utilisation, energy costs and capital allocation.

Successful AI deployment could improve margins, cash generation and ROIC. Failure to realise the expected AI benefits would reduce potential operational upside but would not invalidate the underlying investment thesis.

Cohres Judgment: High relevance / Moderate dependency

2. Commercial Credibility

Cohres Judgment: High

The commercial logic is strong because the highest-priority applications address material operating costs rather than speculative revenue opportunities. Heidelberg Materials has also demonstrated deployment beyond isolated pilots: Planner operates across more than 70 cement plants, Batch AI across 10 plants, and autonomous haulage is progressing through commercial rollout.

This provides sufficient evidence to conclude that selected AI applications can improve plant-level economics.

The relevant underwriting question is therefore not whether the technology works in principle, but whether the resulting benefits are repeatable, attributable and sufficiently material to influence investment returns.

What remains unverified is the conversion from operational improvement to financial return. Public disclosure does not establish:

- realised versus potential benefits
- implementation and recurring costs
- project-level ROI and payback
- contribution to margins, FCF (Free Cash Flow) and ROIC
- consistency of returns across plants

Underwriting conclusion: Commercial credibility is high. Financial attribution remains incomplete.

3. Economic Attractiveness

Economic Priority by Use Case

Economic driver	Underwriting view
Production and process optimisation	Highest conviction
Resource and energy efficiency	High conviction
Asset reliability and automated inspection	High conviction
Smart production planning	Supporting value
Quality optimisation	Supporting value
Autonomous haulage and logistics	Supporting value
Direct AI-enabled revenue growth	Not underwritten

Cohres Judgment: Medium–High

Public evidence demonstrates financially meaningful addressable value: Planner has generated millions of euros of energy savings; Batch AI and SmartMix are associated with approximately €19M of identified North American material and recipe-optimisation value; and management estimates approximately €50M of annual potential from the broader North American digital suite.

Cohres would not underwrite the €50M as realised value. The disclosed figures mix realised savings, identified opportunities and expected annual potential.

The economic case should therefore be underwritten on realised and attributable benefits rather than management's total stated opportunity.

Economic attractiveness becomes High only if Heidelberg Materials demonstrates that recurring savings exceed implementation and operating costs, returns persist after deployment, and successful applications can be replicated without materially degrading project-level returns.

Rating: Medium–High

4. Execution Feasibility

Execution requirement	Principal test
Ownership	Who owns deployment and financial benefits?
Data readiness	Are plant systems and operating histories reliable?
Adoption	Have operating routines actually changed?
Replication	Can successful pilots be standardised across sites?
Capital discipline	Are projects stopped when return thresholds are missed?

Cohres Judgment: Medium–High

Heidelberg Materials has demonstrated that selected applications can be replicated across multiple operating sites. Planner's deployment across more than 70 cement plants is particularly important because it moves the evidence beyond isolated proof-of-concept.

The remaining execution risk is organisational rather than technological: who owns benefit realisation, whether plant-level operating behaviour changes, whether economics remain consistent across sites and whether management stops projects that fail return thresholds. The decisive test is whether deployment changes operating behaviour and whether those changes produce recurring financial benefits that are owned, measured and captured at plant and group level.

Deployment is not the same as value capture. Cohres would require evidence of adoption, financial ownership and realised returns before concluding that Heidelberg Materials has established a repeatable group-wide AI operating model.

Rating: Medium–High

5. Competitive Durability

Cohres Judgment: Medium

AI is unlikely to create a proprietary technology moat for Heidelberg Materials because the underlying tools will increasingly be available to competitors.

Any durable advantage must instead come from execution: proprietary operating histories, plant data, deployment speed, organisational adoption and the ability to replicate successful applications across the network faster than peers.

Holcim provides a useful benchmark, targeting approximately CHF200M of recurring EBIT benefits from AI by 2028 and deployment of AI-based machine intelligence across more than 100 plants. Heidelberg Materials demonstrates credible scaled adoption but does not disclose an equivalent group-level earnings target.

AI adoption alone is therefore not treated as evidence of competitive advantage; durability depends on whether Heidelberg Materials can convert proprietary operating data and execution speed into superior economics that competitors cannot easily replicate.

Underwriting conclusion: Heidelberg Materials appears to be a credible leading adopter, but current evidence does not support underwriting AI as a durable competitive moat.

6. Investment Risk & Sensitivity

Cohres Judgment: Moderate

AI creates limited fundamental downside because Heidelberg Materials does not depend on AI for revenue generation or business-model viability. The more relevant risk is capital misallocation: deploying technology across a large asset base before site-level economics and adoption have been proven. The downside case is therefore not simply that AI underperforms technically, but that capital and management attention are committed without producing returns above Heidelberg Materials' broader investment hurdle.

Scenario	Cohres Assessment
Base	Selective deployment produces incremental efficiency gains but does not materially change valuation.
Upside	Proven applications scale across the network and become visible in margins, FCF and ROIC.
Downside	Deployment expands faster than realised benefits; implementation costs rise, adoption varies by plant and returns fail to justify invested capital.

7. Overall AVCA Opinion

AVCA Scorecard

Assessment Area	Rating
Strategic Role	High relevance / Moderate dependency
Commercial Credibility	High
Economic Attractiveness	Medium–High
Execution Feasibility	Medium–High
Competitive Durability	Medium
Investment Risk & Sensitivity	Moderate
Overall AVCA Opinion	Favourable, with verification required

Investment Conclusion

Heidelberg Materials has moved sufficiently beyond experimentation for Cohres to underwrite AI-enabled operational improvement as credible upside.

Conviction is highest where applications directly affect material consumption, energy efficiency and production economics and where deployment has already reached multiple plants.

Cohres does not currently underwrite AI as a material standalone valuation driver. Cohres distinguishes between what can currently be underwritten, what should remain potential upside, and what requires further verification before being incorporated into the core investment case. The missing evidence is financial rather than technological: implementation cost, realised payback, site-level ROI, benefit ownership and the bridge from operational improvements to group margins, FCF and ROIC.

Investment implication: AI strengthens the operational improvement case but should remain upside to the core investment thesis until group-level financial materiality is demonstrated.

KEY QUESTIONS REQUIRING FURTHER DUE DILIGENCE

Priority Due Diligence Questions

1. How much of the approximately €50M North American annual potential has actually been realised?
2. What implementation and recurring costs are associated with the principal applications?
3. What project-level ROI and realised payback periods have been achieved?
4. How much of the reported savings reaches operating margins and FCF?
5. Are returns consistent across plants and regions?
6. Who owns financial benefit realisation at plant, regional and group level?
7. Which AI projects have missed return thresholds, been delayed or discontinued?

Until these questions are resolved, AI should be treated as credible but incompletely verified operational upside rather than a core component of the investment case.

METHODOLOGY

AI Value Creation Assessment Methodology

Cohres' AI Value Creation Assessment independently evaluates whether AI-enabled value creation assumptions within an investment thesis are commercially credible, economically attractive and realistically executable.

AVCA assesses six areas: Strategic Role, Commercial Credibility, Economic Attractiveness, Execution Feasibility, Competitive Durability and Investment Risk & Sensitivity.

The methodology distinguishes between assumptions that can be underwritten based on available evidence, value creation that should remain potential upside, and claims that require further verification before they can be incorporated into the investment case. It does not assess AI architecture, software quality, vendor selection or technical implementation.

AVCA evaluates AI through the lens of investment conviction rather than technological sophistication. The central question is not whether a company is advanced in AI, but whether AI-enabled value creation is sufficiently evidenced, financially material and realistically executable to support an investment decision.

Assessment Limitations

This assessment is based on publicly available information. Deployment metrics and selected operating benefits have been publicly reported, but implementation costs, project-level returns, realised payback and group-level financial attribution cannot be independently verified without non-public information.

Sources

This assessment has been prepared using publicly available information available at the time of writing.

Principal Company Sources

- Heidelberg Materials company overview and business profile.
- Heidelberg Materials Strategy 2030 and Capital Markets Day materials.
- Heidelberg Materials Digital strategy and published digital use cases.
- Heidelberg Materials Annual and Sustainability Report 2025.
- Heidelberg Materials Investor Relations materials and key financial data.
- Heidelberg Materials product, sustainability and regional operating disclosures.

Key Company Disclosures Referenced

- ¹ Heidelberg Materials Company Overview and Business Profile
- ² Heidelberg Materials Annual and Sustainability Report 2025 – Financial Results
- ³ Heidelberg Materials Strategy 2030 / Capital Markets Day Presentation
- ⁴ Heidelberg Materials Digital Use Case – Batch AI
- ⁵ Heidelberg Materials Digital Use Case – Automated Inspection
- ⁶ Heidelberg Materials Digital Use Case – Smart Production Planning
- ⁷ Heidelberg Materials Digital Use Case – Autonomous Haulage
- ⁸ Heidelberg Materials Strategy 2030 – Digitalisation and Data Advantage
- ⁹ Heidelberg Materials — *Frontrunner in Digital and AI* presentation
- ¹⁰ Holcim — Artificial Intelligence / Smart Operations disclosures

Supporting Sources

- Industrial AI and heavy manufacturing research.
- Building materials industry research.
- Cohres analysis.

Independent Industry Sources



- The Information — Startup Founded by Anthony Levandowski to Launch Autonomous Trucks Globally (Alex Perry, 24 February 2025).

Disclaimer

This assessment has been prepared using publicly available information and Cohres analysis.

The conclusions presented represent independent commercial evaluation and professional judgement based on information available at the time of writing. While reasonable efforts have been made to ensure the accuracy of the information presented, Cohres makes no representation or warranty regarding its completeness or accuracy.

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The AI Value Creation Assessment evaluates the commercial credibility, economic attractiveness and execution feasibility of AI-enabled value creation assumptions supporting an investment thesis. It should be considered alongside broader Commercial Due Diligence, financial analysis and other investment evaluation processes.

About Cohres

Cohres is an independent investment research and commercial due diligence firm supporting investors through commercial evaluation, Commercial Due Diligence, investment research and investment committee support. Cohres developed the AI Value Creation Assessment to independently underwrite AI-enabled value creation assumptions within investment opportunities.

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