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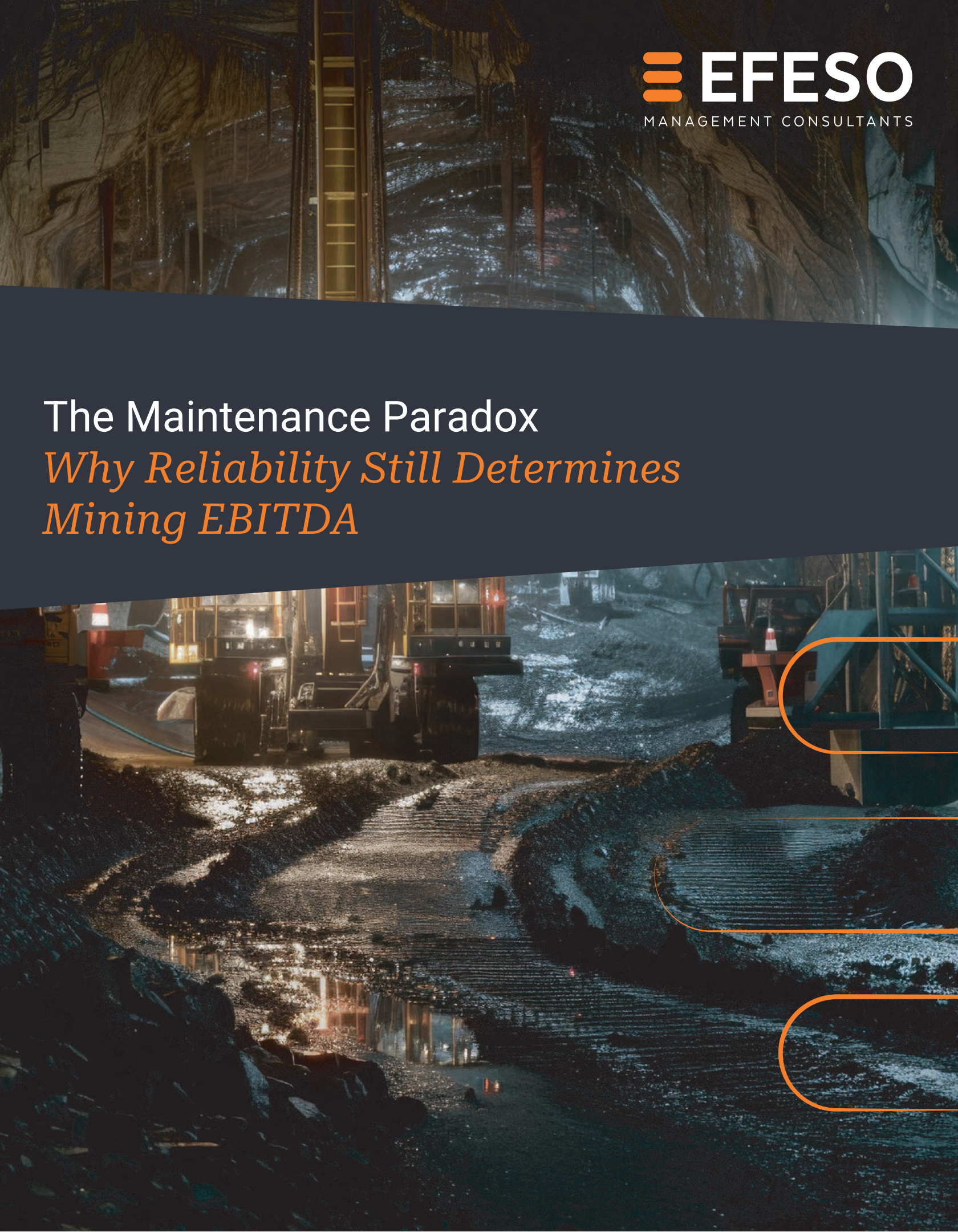
The Maintenance Paradox
Why Reliability Still Determines Mining EBITDA



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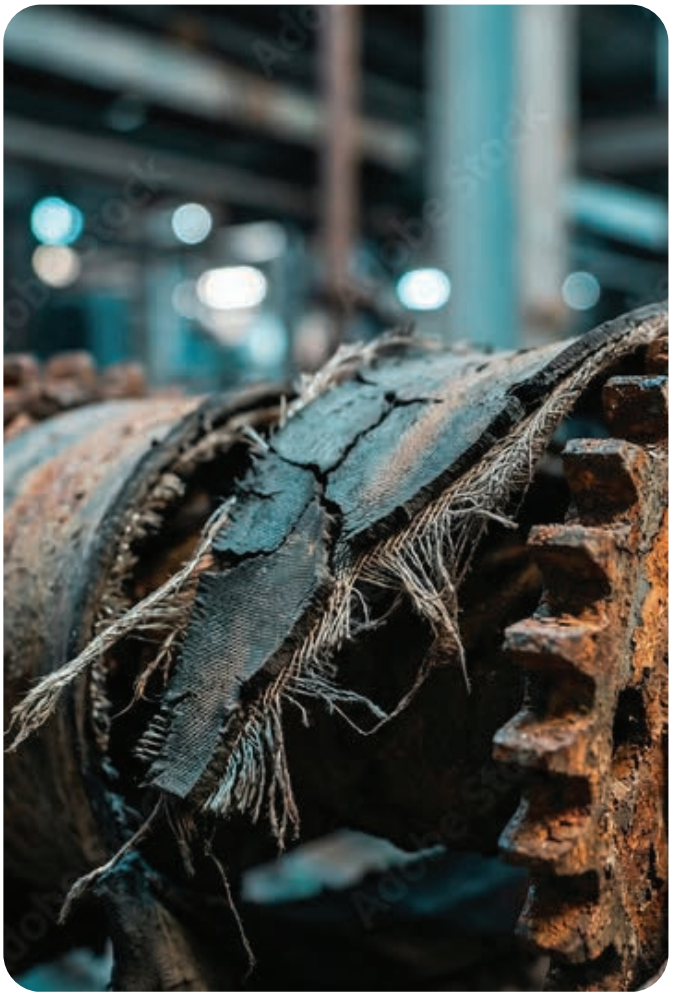
Why Reliability Still Determines Mining EBITDA

Across much of the mining sector, revenues have stabilized—and in several commodities improved materially. Yet EBITDA margins continue to underperform expectations. Comparable assets, operating at similar volumes, are often converting into materially different financial outcomes.

External pressures remain real. Inflation has raised operating costs. Labor markets remain tight. Energy and supply chain volatility persist. But EFESO's execution focused work across mining, metals, and minerals points to a more structural issue:

Reliability driven cost erosion remains embedded in how work is done—even where maintenance performance is broadly viewed as "under control."

- Costs are actively managed. EBITDA still leaks.
- This paradox—apparent discipline, disappointing results—defines the starting point of this ToolBox Discussion series.



When Cost Out Targets Stability Instead of Removing Cost

In most executive discussions, maintenance performance is described as acceptable. Budgets appear lean. Compliance indicators look reasonable. Preventive maintenance completion rates are reported weekly. On the surface, the system appears controlled.

At the same time, those same leaders describe a different lived experience:

- Equipment availability fluctuates week to week
- Short stops are frequent, but explained away
- Schedules are constantly reworked
- Production plans are recovered through effort rather than repeatability

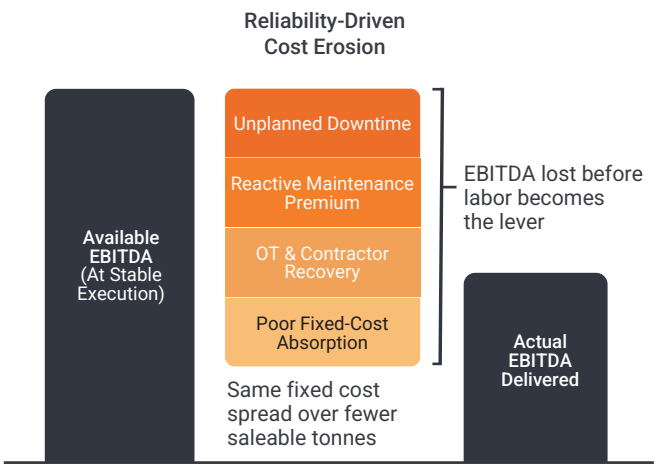
Targets are met—but through heroics, not discipline.

In many organizations, maintenance is still treated primarily as a controllable cost pool, rather than as a production constraint. Under output pressure, preventive work is deferred. Assets are pushed beyond stable operating envelopes. Variability increases slowly, almost invisibly.

What looks rigorous on paper introduces instability in practice.

In recent EFESO engagements across surface and underground mines and process intensive operations, the pattern remains consistent. Sites with similar asset bases and workforce sizes often display stark differences in plan stability—despite comparable spending levels. The difference is not how much maintenance is done.

It is how deliberately reliability is protected as part of the operating system.



Where Reliability-Driven Cost Erodes EBITDA

A financial structure view showing how:

- Unplanned downtime
- Reactive maintenance premiums
- Overtime and contractor recovery
- Poor fixed cost absorption

structurally reduce EBITDA before headcount actions are ever considered.

How Reliability Quietly Erodes EBITDA

When asked what drives underperformance, mining leaders rarely cite catastrophic failures. Those events are visible, investigated, and acted upon.

Instead, EFESO surveys and on site diagnostics consistently reveal a quieter pattern of loss:

- Incremental increases in unplanned downtime that are normalized
- Growing variability that undermines fixed cost absorption
- Escalating overtime and contractor usage to recover late plans
- Skilled trades consumed by firefighting instead of failure elimination
- Preventive work executed, but not locked

None of these individually trigger alarm. Collectively, they compound.

EBITDA erosion occurs **shift by shift**, not through a single event. Variability accumulates financially in ways that are rarely visible in standard cost reports. The result is a widening gap between technical performance indicators and financial outcomes.

In multiple EFESO mining engagements, restoring basic reliability discipline—without adding capacity or major capital—has delivered:

- **3–6 percentage point improvements in equipment availability**
- **5–10% reductions in unplanned downtime**
- **Meaningful improvement in fixed cost absorption**
- **1–3 EBITDA margin points,** sustained beyond the intervention period

These gains are not the result of "better maintenance programs." They arise when reliability is managed as a **system property**, not a functional metric.

Same *Assets*. Same *Volumes*. Very Different *EBITDA*

This dynamic explains why two operations—sharing similar geology, fleet composition, and throughput targets—can produce materially different margins.

Higher performing sites protect availability deliberately. Lower performing sites expend energy recovering it.

In stable systems:

- Maintenance plans are executable, not aspirational
- Preventive work is protected, even under output pressure
- Failure modes are eliminated end to end
- Accountability between operations and maintenance is explicit

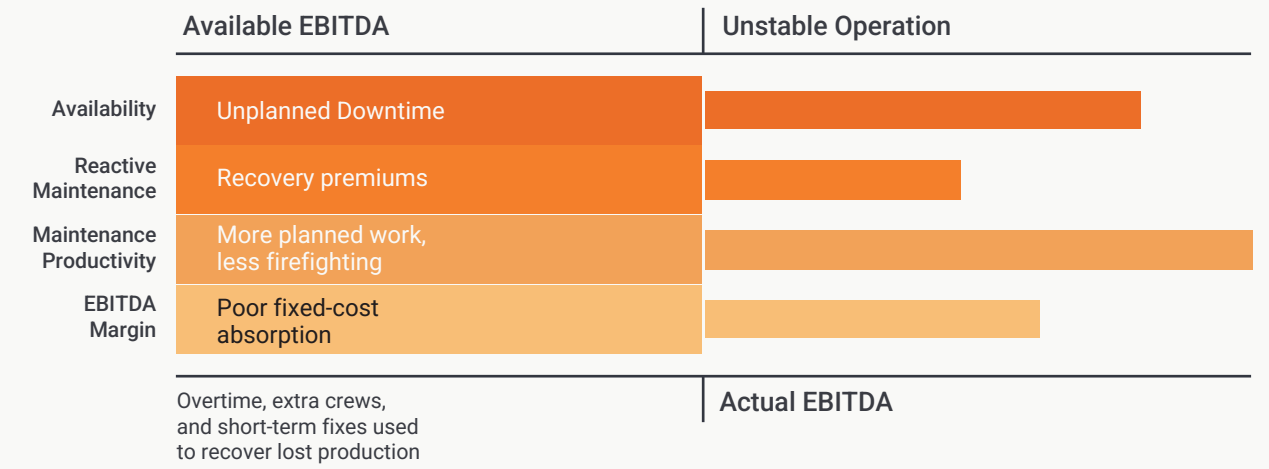
In stable systems:

- Schedules are re negotiated daily
- Preventive work is flexible "when convenient"
- Failures recur without clear ownership
- Variability is treated as an external reality

The difference is not intent. It is discipline.

Indexed Performance Comparison:

Stable vs. Unstable Operations



Reliability losses erode EBITDA structurally through downtime, recovery premiums, and poor fixed-cost absorption-consed

The *Warning* Signs That Precede Headcount Led Cost Out

- Maintenance backlog growth is normalized rather than challenged
- “Temporary” preventive deferrals quietly become routine
- Weekly schedules are continually reworked instead of locked
- Reliability issues are discussed without clear end to end ownership
- Skilled resources are stretched thin, reducing time for root cause elimination

Over time, labor begins to appear high relative to output—not because labor is excessive, but because productivity is being structurally suppressed by variability.

At this point, cost out discussions often drift toward workforce reduction—not by intent, but by elimination of visible alternatives.

Why *Headcount Reduction* Becomes the Focus—and Why It Should Be *Last*

Headcount reduction is not where reliability driven cost out should begin. It is where it ends—when upstream warning signs have gone unaddressed.

Once instability is embedded, organizations feel trapped. Labor appears expensive. Output remains fragile. Reducing headcount may deliver short term savings, but often accelerates decline by:

- Removing critical skills and institutional knowledge
- Increasing contractor dependence
- Further destabilizing execution

In EFESO's experience, sites that start with headcount reduction before restoring reliability discipline almost always re encounter cost pressure within 12–18 months—often with weaker performance capability than before.

How Execution Instability Drives Cost-Out Toward Headcount

When execution instability persists, cost decisions drift from structural control toward visible, headcount-led actions.

Sustainable Cost Out Starts with Reliability as a Production Risk

Higher performing mining organizations do not manage reliability as a maintenance initiative. They manage it as a **production and EBITDA risk.**

They focus on:

- Removing critical skills and institutional knowledge
- Increasing contractor dependence
- Further destabilizing execution

The objective is not perfect uptime. It is **predictability.**

When predictability improves, cost follows.

Implications for Mining Leaders

Reliability improvement is not:

- A maintenance initiative,
- A short term cost program
- A workforce exercise—unless everything else has failed

It is an execution discipline that converts directly into EBITDA.

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Real Results, Together

Email: mining@efeso.com
Website: www.efeso.com/americas

Author

James Metro, Partner
james.metro@efeso.com
404.245.6211