



Automating procurement in mining

July 30, 2024

Peter Benda

As of 2023, 2% of all mining trucks were autonomous, but the market is expected to grow by nearly 30% per year for the foreseeable future⁽¹⁾. There are many reasons to automate:

- Scaling up operations to meet demand
- Offsetting the high cost of the workforce
- Consistency and efficiency
- Safety

Mine owners now capturing benefits from automation in mining, milling, and processing will naturally look for ways to apply this technology to other aspects of the business.

In many industries, automation is becoming essential to support functions such as supply chain optimization and procurement. Procurement at mine sites is especially ripe for automation for several reasons:

- The costs of an indirect workforce, such as procurement, at remote sites, is high. This is especially true for FIFO operations, where travel and camp accommodations are a huge burden. Automation should reduce on-site procurement headcount.
- Volatility in the mining industry, changes in personnel at a mine site, and changing local political or economic conditions can make mine-site procurement very dynamic. Automated processes provide consistency and transparency regardless of any volatility in the procurement area.
- There is a class of “orphan” suppliers—who don’t get much attention despite their significant spend volume over time—for which automated negotiation and contracting may provide a level of control that is lacking today.

Overlooked by procurement: orphan suppliers

While other industries also have orphans (more commonly called “tail spend”), the problem is acute in extraction industries such as mining and oil and gas because:

- **Small procurements and small suppliers don’t get much attention on either side of the market cycle.** Volatility in natural resources extraction keeps procurement focused on the strategic and high dollar categories. When the market is up, procurement focuses on capacity expansion and mitigating risks of the supply chain disrupting production. When markets turn down, procurement pivots to costs and cash flow.
- **The local supply market in remote locations is typically sparse and immature.** Some suppliers may have sprouted up to support the mine, or they started off as local mom and pop businesses. They may be unique and sole source within their locality, so there is little competitive tension. Because this supplier community can be very diverse and spending is inconsistent, the group as a whole does not lend itself to a category strategy.
- **For many mine sites, local procurement is ad hoc, on a spot buy basis, and not under contract.** Each day is different because the mine is expanding. Because mines are, by their nature, projects, rather than process-driven manufacturing sites, procurement is always in evolution. This is especially true in development, construction, and early phases of production. Some mines end up with many suppliers who are not under contract. Single-year spends may be small and, due to the evolving nature of mining procurement, it can be difficult to discern patterns or trends in usage that are essential to developing a category strategy.

Orphan suppliers span a very large range of requirements, including: non-OEM parts, tools, and MRO materials; camp support services including catering and janitorial services, building maintenance and construction, and earthworks contractors; repair and maintenance of LVs, rotables, and non-primary systems; indirect commodities (such as construction supplies, paint, and cleaning supplies); specialty services such as legal, medical, and lab services; and casual labor. While orphans are frequently local, some orphan suppliers are international, offering specialty parts or services, but at a small scale.

By contrast, it is instructive to look at the kind of spending that procurement professionals do focus on. They focus on high volume and critical suppliers. Not by coincidence, these supply markets are often global or super-regional, and provide access to tools, processes, and platforms that enable efficient pricing discovery, structured negotiations, and streamlined contracting. Examples of these supply markets are: OEM equipment; OEM dealer parts and services; high volume commodities (especially when commodity prices are market driven), high dollar services contracts (e.g., engineering services), and “catalog” items, by which we refer to items sold through regional or international resellers or distributors at established prices with defined discount tiers.



Does automation work for orphan suppliers?

Can automation be used to give procurement on orphan suppliers characteristics analogous to those we find with high-dollar, strategic spends? In other words, can automation provide the following:

- Discovery of pricing gaps
- Structured negotiations
- Streamlined contracting
- ...at sufficiently low cost to make the “juice worth the squeeze”

We believe the answer is “yes.” Very recently, solutions for tail-spend spend analysis, systematic contracting, and automated negotiations have come onto the market. Only this year (2024) are supply professionals seriously entertaining the use of generative AI in procurement.

There are (at least) three areas where automation and generative AI can be applied to procurement with orphan suppliers:

- **Initial spend profiling and opportunity assessment**
- **Contracting**
- **Negotiation**

While the rigor of these solutions will not be as high as that of a typical category strategy, they are also more than “better than nothing”: they add value in their own right.

While the investment in technology requires scale to generate a payback, ongoing costs can be low. The dollar spend on orphan suppliers at many mining locations is significant. Often, this spend grows and becomes concentrated among fewer suppliers who evolve and grow to meet the needs of the mine. It is common for mining concessions to require mine operators to develop the local economy, including the volume of spending going through local suppliers. As a result, of these factors, orphan spending grows even as it remains under the procurement radar.

What’s the value of automation for suppliers? Many of these suppliers depend on the mine, and the mine may be their only customer. Well-managed suppliers are keen to formalize the relationship with their largest customer. Since their capabilities in sales, fulfillment, and customer relationship management are immature, they are incentivized to accept requirements set by their largest customer. **A platform-enabled interaction provides structure to the relationship.**

What’s the value of automation for the mine? The mine will improve cost control and transparency. If the spend is tied to specific items, rates can be negotiated on an item level. For other suppliers, especially services, negotiations can be tied to other terms, such rate structures, discounts, volume rebates, and/or price indexes.

Automation-enabled contracting—as with any contracting—also enhances security of supply by strengthening relationships with suppliers, and by implementing terms designed to reduce risk.

In summary, the benefits to the mine are cost control, transparency, stronger supplier relationships, and lower risk.

I am collaborating with Axtom, a pioneer in the area of generative AI procurement automation. Axtom has developed a platform that automates spend profiling, contracting, and negotiations for tail spend and orphan suppliers. If you are interested in learning more, please reach out to me.

Sources:

- (1) <https://insideunmannedsystems.com/autonomy-scales-up-in-mining/>