



## Unlocking the value of mining data

Mining is essentially a data-driven business.” Tonnage moved, hours logged, fuel burned, and equipment availability all figure directly into the bottom line. Today’s smart equipment gathers much of this critical data - the key is being able to capture its economic value.

***In this edition of Expert’s Corner, Shawn Tetreault, SMS Equipment’s SMART Mining Solutions Manager, shares his insights on how mines can transform their data into insights that drive profitability.***

*Shawn is well-versed in this topic as he works with mining customers to advance data-driven equipment health monitoring programs. Along with Komatsu’s Simon Van Wegen, he presented a technical session on connected data at CIM’s Digital Mine Symposium last November.*

### **Q1: How well are mines utilizing their data?**

**A:** There is so much data available these days that I often refer to the so-called DRIP syndrome - data rich, information poor - which I think applies very much to mining. Whether people realize it or not, every asset - not just equipment but even light towers - generates data. So the question is, how can we better use this data and are mining companies doing anything with that data?

### **Q2: What are some of the benefits of using that data?**

**A:** Equipment optimization is an important piece and a good starting point. You can monitor equipment for potential failures at a basic level and plan your maintenance to pose the least disruption to your operation. Though connected data, we can feed all that data directly into your maintenance programs so you can see where failures are about to occur through trend analysis and advanced analytics. Additionally, you can tie the information into your supply chain to better manage parts inventories, schedule maintenance activities, and maximize the life of component replacements. All of this translates into a lower cost of ownership for the customer.

But that’s only a tiny subset of what you can do. Be reminded that equipment monitoring doesn’t just monitor the machine itself - it also monitors the

driver, the tonnage moved, fuel consumption, etc. **We see four areas of benefit for the data - safety, sustainability, reliability, and productivity.**



Utilizing an open-data platform connecting your critical business systems allows interoperability and empowers you to innovate and implement new applications.

### **Q3: Could you give an example of an added benefit?**

**A:** Safety is a good one to highlight. Collision avoidance systems, which can be installed on the mining equipment we sell, reduce incidents independently, but they also detect near misses. By analyzing the data, mines can track how many near misses you see and act on that data to make the mine safer. The information allows mines to move to a proactive state in managing their fleets, taking action before an incident happens, instead of only acting once there has been a safety incident.

A lot of work needs to go into pulling all that data together and making sense of it, but it can provide a ton of value at the end of the day. **So what we're trying to do is help our customers get more educated and use the information at their disposal to optimize the mine better.**

**Q4: What steps do companies have to take to make sense of all this data?**

**A:** We describe what's called an open data ecosystem, which begins from connecting the various information sources - equipment, dispatch system, surveys, etc. - and pulling that into a repository which we call a data lake. Then comes the interoperability work to get the different apps using the data, talking to each other, and making this data openly available to any team focused on driving data-driven performance improvement. Once that's done, you can apply various analytics to the data to gain insight relative to KPIs or investigate particular problems or issues.

But the critical piece here is to track and review that information regularly. Data isn't of value unless you have defined goals for what you want to do with that data and have checks and balances to ensure that you accomplish them. So you fact check by answering key questions that will improve overall operations. Consider this.

- Do you see extended periods between failures without warning through equipment monitoring?
- Has productivity increased?
- Have you avoided any unscheduled equipment breakdowns?
- Has the data helped lower TCO?

**The value of the data is determined by the actions you take to improve these numbers.**

**Q5: What are some of the most common mistakes you see in organizations?**

**A:** Throughout my experience, I have seen instances where different groups potentially have conflicting goals. So one team might have equipment availability as a goal and be rewarded if that's over a set target, but might not be penalized if a major component fails and the equipment gets sidelined. I don't think people do this consciously, but they might take undue risks without really thinking about it, which might hurt the operations team with a tonnage target. The point is that company's departmental goals and



Through remote health monitoring, data analysis, operator training, and advanced technologies like automation and proximity detection, our experts can help you optimize the performance of tasks to substantially improve machine productivity and safety and reduce your total cost per tonne.

organizational goals need to be aligned and made available through an openly shared data ecosystem, so everybody's working cohesively towards making the mine more productive.

**Q6: How can SMS Equipment help customers do this?**

**A:** SMS Equipment, along with Komatsu, plays a significant role in helping customers across Canada and Alaska determine what constitutes good performance and whether they're achieving that. So we can provide them with that global view to help them be successful. We're not going to tell people how to run their mines, but we can share comparative data to help them set better targets and analyze their results.

**Q7: Any last words?**

**A: I think that mining is all about people and collaboration at the end of the day.** The data that is now available is making things a lot more transparent, leading to better communication. If mines democratize that data and use it to empower their people, the potential for improvement is enormous.

**Takeaways from Shawn:**

- With clear expectations, mines can take advantage of the data they have.

- Today's equipment can collect multi-faceted data on equipment health, tonnage moved, operator behaviour, fuel burned, and other key criteria.
- Companies have to move from reading control panels to interconnecting that data with other apps to gain insights to leverage their data.
- Connecting apps is a significant effort, but the payoff is enormous.
- Companies need to avoid silos and align their teams with common goals.
- In the end, smarter mining is all about collaboration.
- SMS Equipment and Komatsu provide support to help companies capture and utilize their data and share valuable benchmarking information to help companies set and pursue meaningful targets.

Mining is all about diverse teams working together towards common objectives. Informed team members make better choices and collaborate more effectively with their peers and stakeholders, and informed

leaders make better forward-looking decisions. When mines develop and operationalize their data resources, they can unlock significant opportunities for tighter collaboration, greater productivity and efficiency, and more effective planning for the future.



Mine site optimization starts at various levels, including tasks, processes, and systems. SMS Equipment can help you visualize the interaction between all areas of your mine or even multiple operations.

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**| Next Steps: Are you interested in discovering how we can help you leverage cloud and edge data, sensing technologies, and communication systems to identify patterns and actionable insights that proactively prevent, rapidly respond, and continuously improve your entire operations?**

