

CASE STUDY

Kal Tire improves mining service and safety with AI-driven tire management

The mining industry is fraught with complexity, and AI-based data science is being increasingly implemented to streamline management of interconnected facilities, equipment, and operational processes. Kal Tire's Mining Tire Group has embraced this adoption of data-driven transformation in its efforts to inspire positive change through mining tire technology, safety innovation, community involvement, and sustainability initiatives.

In particular, more than 150 mine sites across five continents rely on Kal Tire to help track, plan, and manage all tire-related processes. To address this highly specialized need, the company has developed its own Tire Operations Management System (TOMS), an industry-leading productivity tool built on Infor EAM by Hexagon. With TOMS, site operators and technicians also gain visibility to performance trends to identify more ways to improve uptime and safety for mining equipment.



Industry

Mining

Infor product

Infor® EAM by Hexagon
Infor OS, Infor Coleman® AI
Infor Mongoose, Infor Birst®

Locations

150 mining sites

Team

2,700 employees

Website

kaltiremining.com

“ Our goal is to help customers manage their tires and wheels on mine sites and to make sure that the trucks run with the least downtime and as safely as possible.”

CHRISTIAN ERDÉLYI

TOMS System & Implementation Manager Global, Kal Tire's Mining Tire Group

Integrating AI solutions for unique industry standards

Kal Tire began its AI journey earlier this year by integrating TOMS with Pitcrew.ai to bring autonomous detection of hot tires, tire separations and other damage without the vehicle needing to stop. Tires used in the mining industry are mammoth-sized, standing over twice as tall as humans and thirty times heavier in some cases. This ultra-large machinery drives up costs since highly trained technicians using specialized tools and processes are required to change these tires effectively and safely.

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Reducing downtime and safety risks

Infor’s cloud technology layers in more automation and intelligence capabilities to Pitcrew’s solution to further help miners avoid unnecessary downtime, risk, and cost. Infor’s cloud technology platform, which includes Coleman AI, addresses two fundamental areas of tire management: tire fitment and visual inspection.

“Infor as a partner is allowing us to move from paper to mobile to sensors. It allows us to move from being reactive to proactive to predictive. That’s a journey. It’ll have bumps, but it’s a cleared path and we’re heading down it,” says Erdélyi.

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Business challenges

- Escalating costs due to the need for highly trained technicians and specialized tools
- Ongoing unnecessary downtime, risk, and cost
- Reactive approach to tire fitment and visual inspection operations
- Handling data generated by over 150 mine sites across five continents

The AI-driven tire fitment process predicts tire replacement time to better forecast demand at each customer site, optimizing fleet availability and tire utilization. AI-driven visual inspection with Pitcrew sensor integration proactively detects tire issues and generates work orders to improve site productivity and safety. Kal Tire anticipates the following results after final implementation and testing is complete:

- 20% reduced downtime with more accurate tire forecasting so that each site has the right quantity and mix of tires at any point in time
- Greater effectiveness in detecting and diagnosing tire issues with autonomous visual inspections and system-generated work orders on mobile devices

AI also addresses the recruitment and retention challenge in the mining industry. It can be difficult to find people to manage and replace tires on mine sites. With Kal Tire starting to deploy autonomous vehicles inspection systems, they anticipate being able to fulfill more contracts where recruitment proves particularly challenging. In fact, Pitcrew will enable Kal Tire to automate and reduce the more than 900,000 manual visual inspections it conducts annually.

Reaching new mining customers with automation

Kal Tire Mining Group has found that moving to autonomous platforms enabled by AI will do work significantly more effectively than existing processes. Mining customers are reacting positively to these next generation services. Kal Tire has acquired three new contracts to provide automated inspection services to existing customers since the Pitcrew partnership was announced.

The EAM solution will provide the “glue” or cloud technology needed to apply and scale AI to key workflows for site operators and technicians. Junior and less-experienced personnel will especially appreciate the added confidence that comes from AI-driven issue recognition and system recommendations.

Going beyond data to strategic decision-making

“We all have data, but it's the interoperability of that data and being able to use it to make better decisions that is critical. AI is just one piece of the puzzle. What makes this solution stand out is the connectivity from sensors to system processing to the delivery of insights on mobile to our field workers and customers in a consistent, user-friendly way,” says Erdélyi.

Business results

- 20% reduced downtime expected with more accurate tire forecasting per site
- Efficient stocking to ensure the right quantity and mix of tires are available at any point
- Highly effective detection and diagnosing of tire issues with autonomous visual inspections and system generated workorders on mobile devices
- Streamlined process to move and transfer data in a usable format across sites

Kal Tire recognizes the value of connectivity between systems, a detail that is often overlooked and underestimated.

“The building blocks of successful use of AI is the engineering behind it and the ability to move data consistently in a usable form,” says Erdélyi.

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