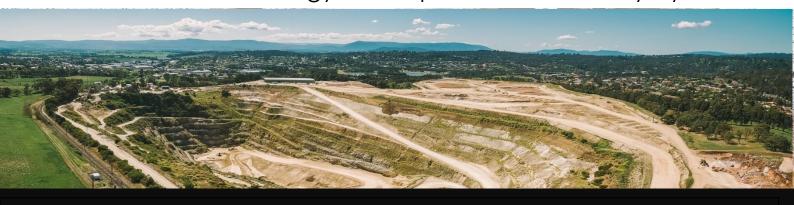# CASE STUDY: Technology Trial Improved Productivity by 5%

ROI Achieved in <1 year

CHALLENGE

An aggregate mining company wanted to increase productivity and reduce cost, and realised that to do that they needed to move away from their paper-based system and start measuring actual numbers with a Fleet Management System (FMS). The time between collecting data and analyzing it was taking upwards of 18-24 hours, too long and inaccurate for any significant improvements to be made. iVolve's FMS solution was installed as a 2-year pilot program at a mine in the USA to demonstrate how a large-scale FMS collecting production and maintenance information from across the site could improve the fleet metrics and deliver business value.

METHOD

A baseline level of performance was recorded prior to the iVolve deployment. The iVolve FMS was then installed on a CAT 992 wheel loader, two CAT 990 wheel loaders, and four CAT 777 trucks.

Operators were shown how the iVolve system gave them instant feedback in the cab so they knew they were getting maximum productivity on each load. Dispatch and management were shown how to use the iVolve system dashboards and reporting functionality to plan, oversee, and report on each shift to maximise efficiency.

'When the system went down and the operators didn't have feedback, I saw our tonnage fall from 99 tons to 95.'

-   Mine Engineer

FINDINGS

Significant cost reductions were made at site over the seven months (calculations based on standard shift calender time), as illustrated in the table below.

Function	Results
Cycle Time	5% decrease
Payload	4% increase
Productivity	5% increase
Cost per ton	3.3% decrease
Unrealised Productivity Gain	12% increase

The potential productivity figure was based on the site's ability to make further improvements to productivity and cycle times. Before the iVolve FMS was installed, the tonnage was averaging at 95. After installation, the target was set at 105 tons. At the time of calculation, the payload had increased to 99 tons, leaving room for further improvement.

The iVolve FMS was initially scoped to have a return on investment in 2 years. Actual return on investment was achieved in under a year.

ADDITIONAL BENEFITS

Investigations of rail car contamination.

iVolve's playback feature allowed site to identify the exact moment contamination of a rail car bucket occurred, reducing internal investigation time. This gave HSE personnel the time to investigate other issues quickly that they otherwise wouldn't have been able to.

"...it saved us time ... it is really quick."

-   Mine Engineer

Cycle time and efficiency improvements using idle time event analysis.

iVolve's classification of idle time events allowed the site to identify key areas of the circuit for improvement. Whereas other fleet management systems give management an overall percentage for the day, the iVolve FMS provides the level of detail that is necessary to pinpoint where the circuit can be improved.

"iVolve's classification of idle time events is key ... compared to other fleet management systems."

-   Mine Engineer

SOLUTION

iVolve Mine4D Production & Maintenance were installed as a pilot program to demonstrate how a large-scale FMS collecting production information from across the business could improve the fleet metrics and deliver business value.

The business is now planning a global deployment of iVolve Mine4D

iVolve Mine4D Production enables real-time decision making in two ways: by providing real-time feedback to operators in-cab; and by monitoring and recording in real-time all parameters of the haul truck load cycle.

iVolve Mine4D Maintenance provides real-time equipment health data feeds. This data is displayed graphically with the iControl Maintenance dashboard at fleet and individual asset levels, and full data history is available for both ad-hoc and scheduled reporting.

iVolve Display & Maintenance Dashboard

To learn more, contact us today +61 7 3253 6700 or email info@ivolve.com