



CASE STUDY



Jwaneng Improves Productivity by 13%, Increases Profits

LOCATION:

Jwaneng Mine
Botswana

OBJECTIVE:

To increase truck utilization and reduce operating costs by maximizing use of the Modular DISPATCH system

OUTCOME:

- » 9.2% increase in tonnes per truck ready hour
- » 7.4% decrease in truck cycle time

Challenge:

To increase truck utilization and reduce operating costs by maximizing the use of the Modular IntelliMine DISPATCH system

Solution:

Having just upgraded their DISPATCH mine management system in early 2006, the mine's objective was to ensure that it was maximizing the use of the system

The Debswana Jwaneng mine, located in southern Botswana, is the richest diamond mine in the world. Jwaneng initiated a business improvement project in the beginning of July 2006, with the objective to increase truck utilization and reduce operating costs by maximizing the use of the IntelliMine DISPATCH system. A veteran user of the DISPATCH mine management system, Jwaneng realized improvements in several Key Performance Indicators (KPIs) over the ten-month project, notably:

- » Increase of 9.2% in tonnes per truck ready hour
- » Decrease of 7.4% in truck cycle time

Jwaneng's commitment and focus on this project were critical factors leading to a successful project. This case study discusses other project success factors and the project methodology, including the execution of the IntelliMine system review by Modular Mining Systems, Africa. These achievements demonstrate that new and experienced users of mine management systems can increase the return from their DISPATCH system investment on an ongoing basis.

Approach & Methodology

The project team, including Jwaneng and Modular personnel, began by assessing the state of the IntelliMine system and mine operations. The team analyzed everything from loading practices, to types and duration of production delays, to availability of GPS and field hardware. The analysis also focused on the user interaction of dispatchers, operators and other stakeholders with the DISPATCH system.

Modular engineers utilized proven and effective services to perform this analysis, starting with the IntelliMine System Review and concluding with Performance Analysis. The IntelliMine System Review involves mining engineers validating data integrity, performing database maintenance, reviewing system configuration, measuring field hardware availability and dispatchers' performance.

The IntelliMine Performance Analysis focuses on detailed mining operational practices as well as operator performance. The review highlighted that “tea break” delays totaled more than 400 hours for the months of July and August in 2006—with an opportunity to reduce these hours. Another identified opportunity addressed the low percentage of trucks auto-arriving at shovels using GPS. Inconsistent practices during the start and end of shifts also surfaced during the analysis.

With the baseline data in hand and opportunities identified, the project team began addressing key needs, including:

- » Training needs for dispatchers and operators
- » Increasing availability of field hardware
- » Updating settings in the DISPATCH system, such as haul routes, default delay times and codes

Training focus areas included:

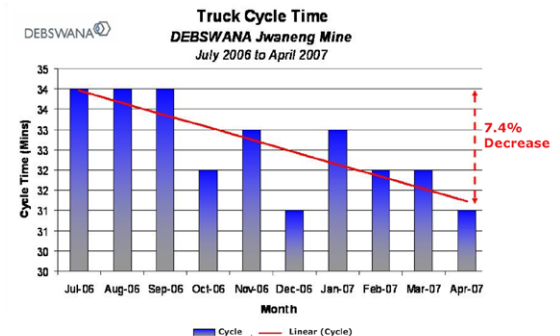
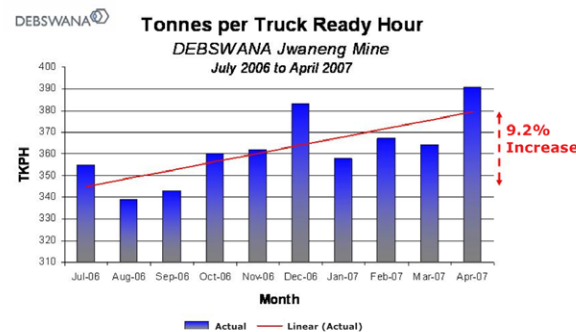
- » Certifying dispatchers
- » Creating reports and KPIs (in the PowerView reporting system) for dispatchers
- » IntelliMine system and operational practices

Other notable improvements included an increase in truck utilization with a reduction in the hours attributed to “tea break” delays and “queue time per load”. Some improvements were attributable to changes in the fleet size during the ten month project.

Conclusion

With freshly trained staff, an updated configuration of the DISPATCH system and full commitment from Jwaneng and Modular, the mine was well on its way towards achieving the original objective. The adjacent graphs show the marked improvement in tonnes per truck ready hour and truck cycle time.

Special thanks to Caston Mutevhe, Project Manager for the Jwaneng / Modular upgrade, and also to Modular Africa staff for their dedication to a successful project.



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