Mine to Mill Optimization Services

Part of MISOM’s Advanced Solution Services:
- Mine to Mill
- ABC/EAM - Capital Equipment Based Costing
- Performance Management Analytics

Transforming Data into Action through Applied Business Intelligence and Process Change
Sustaining & Augmenting Optimization

Using Integrated Information Networks, Training, and Process Change to Establish a Sustainable Mine To Mill System

The importance and positive impact of mine to mill (M2M) optimization has been well established in mining. Unfortunately, most M2M programs are quickly rendered unsustainable, since spreadsheets, extensive manual data cleaning, and disparate reporting tools are used to manually collect and organize data. In these M2M programs, the limited data only permits a few relationships to be modeled and rarely focus on the key personnel training and cultural changes that are needed to optimize. Even if an optimum M2M model is created, mines must follow-through on executing the plan with quality assurance and control, again, a great challenge without adequate training, process change, or integrated information.

One of MISOM’s most popular Service Products, once companies acquire a data warehouse and performance management systems, is the M2M program.

M2M Services: IT & Expertise

Integrated Information | Performance Management | Modeling

Integrated Information: MISOM has a semi-automated data warehousing tool, featuring a materialized semantic integration layer, that can quickly source and integrate any data source, and then push information to M2M analytical tools to derive optimizations. Tags can be created and then pushed to 3rd party process historians or expert systems within a DCS. For example, tracking drilling and blasting parameters of material as it passes through a grinding circuit. Alternatively, tag and relational data can be easily integrated and pushed into databases for data mining or 3rd party software such as mine planning tools (block models). For example, passing grinding performance back into the block model for every shovel bucket.

Performance Management: Operations must follow-through on optimum design parameters and operational best practice through process mapping, training, scorecards, and creating a culture of measured accountability. MISOM implements and supports performance management systems in a wide variety of mines.

Modeling: MISOM employs some of the mining industry’s leading applied data mining experts to help you create understandable & clear data mining models and predictive analytics.
BEST PRACTICE

Leverage MISOM’s experience. We have helped mines optimize fragmentation for leach and SAG, developed a leach pad block model from GPS truck dumps, created predictive data-mining models to reverse engineer an ideal blast design and predicted M2M outcomes within a block-model, created optimum blending systems, etc...

DATA INTEGRATION

Use MISOM’s unparalleled data warehousing approach to develop a sustainable information infrastructure for performance management & modeling. We can link to any permitted database or process historian to pull in all the data sets used to design, measure, control, and model fragmentation, blending, and mill or leach operations.

CULTURE AND PROCESS CHANGE

We work with real data, miners, supervisors, and engineers, in culturally challenging environments. A focus on education and process change ensures sustainable M2M.

HOW WE DO SUSTAINABLE M2M

1) Find out what is going on...
   - Process mapping
   - MISOM: supports the process mapping for work and data flows.

2) Find out what is known
   - Solidify and/or augment data infrastructure
   - MISOM ODS: integrates information to join any parameter

3) Get the basics right...
   - Quality Control / Quality Assurance (QA/QC) on execution of design & standard operating procedures
   - MISOM Scorecard: tracks and motivates performance

4) Get the details right such as establishing models for...
   - Ideal fragmentation distribution for leach or SAG
   - Mineralogical or fragmentation blend
   - Processing operations
   ... then use the models to reverse-engineer fragmentation, blends, and operations.
   - MISOM: extensive knowledge and application of data mining for prediction and modeling, training and design and implementation of performance management tools.

5) Continuously model, adjust, and maintain quality controls and data mining models.
   - MISOM Support: providing unparalleled data warehouse and continuous improvement support for mines.
Mining Information Systems and Operations Management (MISOM) Inc. is a systems integration and improvement firm that designs, implements, and supports real-time and historical data warehousing and business intelligence systems. In our deployments, we focus on process change, ensuring a mine’s many technology investments derive maximum benefit.

A significant portion of MISOM’s work is creating and supporting continuous improvement programs and implementing more advanced solutions such as Mine to Mill (M2M), Performance Management systems, Enterprise Asset Management (EAM), and Activity Based Costing. All of these programs require large quantities of data, supplied in a continuous and consistent manner.

MISOM has a valued team of highly educated, experienced engineers and programmers with extensive expertise in IT and mining technology. This experience, coupled with a great deal of innovation, creates an unbeatable combination that has allowed us to design best-in-class applied IT solutions and services specifically focused on mining operations and corporations.

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