IMPLEMENTATION ENGINEERS
Dynamic Solutions in Action

Specifying Information to Support a New Mine
Open Pit Gold Mining

Situation

Our client was in the start-up phase for what would become one of the largest gold mines in the world. Top management was concerned that as the mine ramped up, the data and information needed to run the site as well as measure its performance would not be readily available to provide the Business Intelligence to support top management's targets. Therefore, top management's immediate objectives were to:

- Bring visibility to the staff of the need to start specifying what data would be needed and what would be measured.
- Align the organization around common data needs to run and measure the operation.
- Train the organization in basic Lean analytical tools.

Approach

A workshop approach was used with Implementation Engineers providing the workshop materials and facilitation expertise. All of top corporate management attended the workshop as well as mine site management. This included about 30 key people to the business who participated for two full days. There were four Implementation Engineers' experts who facilitated the workshop.

The workshop's major steps were as follow:

- Develop work charter

  With the whole group working together, we developed the charter for the two-day session, so that the objectives of the workshop were clear to everybody.

- Breakout into functional groups

  The 30 participants were divided into four groups based on their management roles and areas of expertise. Each group was led by an

Implementation Engineers' facilitator. There was a group for each of the following focus areas of the mine: Mine Operations, Plant Operations, Maintenance and Administrative Functions.

- Map "Information SIPOC-G" for each focus area

  Each of the four groups was led through the process to map informational requirements via SIPOC-G (S = Suppliers of information, I = Information supplied, P = the Process using the information, O = the information Output, C = the Customers of the information, and G = current Gaps relative to the flow of that information).

- Validate mapped SIPOC-G

  Each group then presented their SIPOC-G maps to the other groups to validate that they had correctly identified the suppliers of the data and information they needed in their processes as well as the customers of their data and information.

- Produce Failure Modes and Effects Analysis (FMEA)

  Each of the four groups were then taken though a Six Sigma style FMEA analysis which had the following key steps:

  - Document Fishbone and Affinity Diagramming

    This brainstorming methodology was used to identify the possible failure modes associated with Information Flow. The members of each of the four groups were asked to brainstorm those factors that would impede efficient information flow. Each identified item was then put into a category on a "Fishbone Diagram", so that similar items (those ideas that have an affinity to each other) would be grouped together, producing an Affinity Diagram.

  - Analyze failure modes

    The possible failure modes identified above were then analyzed to determine the effect of the failure, the probably it would occur, the severity when it did occur, and the detectability of the failure. This enabled each group to rank by priority, those possible Information Flow failures that needed to be addressed, possible course of

action, and which department was responsible for implementing the actions.

- Determine Information Hierarchy

  This session looked at the processes (P) identified during the SIPOC-G analysis, then took the informational requirements down to the next level of detail to document the frequency of informational need by the customers. The frequency could be everything from "real time" to daily, to weekly, to monthly, or to annually.

Results

The workshop was the first step in bringing together the management associated with the new mine site and getting them to recognize the need for having and providing good timely data and information. It provided the realization that the flow of the right information does not just happen, but has to be planned and that there will be a number of obstacles to providing and maintaining good information flow. The workshop transferred the skills to the staff that would enable them to specify all their information needs, to understand where the pitfalls to information flow might be and to prioritize the work around avoiding the pitfalls.