



Case Study

Nickel Smelter

Case Study of a Nickel Smelter

Profit bolstered during challenging times

Increasing output and cutting costs yields \$45 million payback

By Karl Kelton

It started out as a straightforward challenge: A nickel smelter in northern Ontario had to cut costs to cope with worldwide pressures on nickel prices. Its goal was to reduce the weighted average cost to produce a pound of nickel and copper by 20 cents to \$1.30.

The smelter's general manager asked Karl Kelton for help. Kelton had three options: cut costs, increase production from its existing asset base, or do both. Kelton opted for the two-pronged approach. But while his Montreal based team was working on plans to cut costs in various areas of the plant, the assignment suddenly became more complicated – the smelter was hit by a workers' strike.

Finding the Silver Lining

Kelton saw a terrific opportunity to improve productivity in the plant. After all, management was now running the plant at 65 – 70 percent capacity, with roughly one-quarter of the manpower. Kelton and his team moved into document and reconfigure the work while management ran the show. “Companies don't normally think of a strike as an opportunity,” says Kelton.

Reconfiguring Operations Saves \$10MM

Kelton's team moved into the smelter, living there 5 days a week, 24 hours a day and sleeping on mattresses. They studied and documented the work in various parts of the smelter to determine how it could run with fewer staff on a sustainable basis. They analyzed the backlog, and the critical activities required to maintain each major piece of equipment. They figured out what the plant needed after the strike – the appropriate skill sets, job descriptions, the metrics to judge performance – and recommended the work itself be re-configured.

The team employed the same approach in other areas of the smelter, with impressive results: An overall cost saving of \$10 million per year. “Four to five years later, they are running that place like a Swiss watch,” says Kelton who received monthly operating highlights from the facility's new general manager.

Increasing Output Improves Profit Margin by \$30MM

Cutting costs was not the only way to achieve the \$1.30 plan. Kelton's group also worked on a plan to process more material with the same asset and fixed cost base to cut the per -unit cost of nickel. The team demonstrated the roaster furnace output could increase on a consistent basis from 30-32 tonnes per hour of material to 35-37 tonnes. The challenge was to do it consistently.

A rigorous problem solving analysis was undertaken – job identification, data collection, analyses, options, solution development, trials and management of problems on a day-to-day basis. The company made the changes and the its profit margin increased by 15%, about \$30 million per year.

Hands-on Approach Key to Success

It helped to be on site. “We’re constantly on the floor, working with front line management and supervision, learning the business hands-on,” says Kelton.

Moving beyond the symptoms to deal with the root cause of a problem brings the solution into focus. To do this, Kelton employs the Socratic method: “Our job is to probe beyond the obvious questions and answers.” Then mobilizing people within the organization to make change brings it all together. “We help people to see the art of the possible and the magnitude of change that can be implemented”.



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