Case Study
Nampak Glass

Client Background

Nampak Glass is a leading glass packaging manufacturer producing glass bottles for the food and beverage industries. Bottles ranging from 200 ml to 1.5 litres are produced in a variety of standard colours including flint, emerald green, UV green, dead leaf green and amber.

The state of the art manufacturing facility in Roodekop, Gauteng operates three furnaces and nine parallel product lines to produce a total of 260,000 tons per annum. The operation utilises sophisticated rotary uninterrupted power supply units to ensure power security.

Nampak Glass further offers an array of value-add services such as customised design, embossing and debossing. They offer in-house pressure sensitive labelling, and can deliver labelled glass containers to their customers.

Key Challenges

- The IS machine is the heart of the glass bottle making process. Poor IS machine reliability and availability hampers the plant's capability of producing high volumes of good quality glass bottles.
- Inadequate IS machine maintenance results in excessive machine breakages and production interruptions.
- There are currently no planned maintenance interventions except for opportunity time during production stops or process changes. This makes it very difficult to execute proper planned maintenance.
- IAFIS data (downtime reports) consists of open field user entries leading to questionable data accuracy and integrity and extensive amounts of data processing.
- Purpose of the intervention was to determine if scheduled planned maintenance interventions are required and if so, what interval will result in optimal benefits.

"This project forms an integral part of the bigger asset management process by highlighting specific focus areas for immediate improvement."
Earnest Kapp - Client

Pragma Intervention

- Analysed and cleaned available plant production downtime information (IAFIS) and asset failure history.
- Used Pareto analysis to determine the main downtime contributing failures and failure frequency for the nine IS machines (80/20 principle followed).
- Facilitated root cause analysis to identify the root causes and other contributing factors.
- Maintenance interventions required to prevent failures have been identified based on current plant condition, experience and recommended industry standards.
- Developed a high level planned maintenance intervention schedule with basic time and resource requirements.
- Compiled an A3 project report.

Value add

- Production data and equipment failure history analysis enabled the Focused Improvement team to identify the machine's most significant downtime contributors and their frequency.
- With supporting production downtime data and equipment failure history, facilitation sessions were conducted with the maintenance team to determine the need and requirements for planned, scheduled maintenance intervention.
- Industry recommendations and best practices were consulted to verify accuracy of maintenance requirements.
- The investigation resulted in a proposed nine-weekly scheduled maintenance intervention interval. The estimated benefit in reduced unplanned production stops is R15 mil per annum (151 hours of additional production).
- As a result a high level proposal for a maintenance intervention schedule including time and resources required was delivered.

Tools and technology

- Pareto Analysis
- Microsoft Excel (Data processing)
- Brainstorming/facilitation sessions
- Available plant and asset technical information
- Industry machine maintenance recommendations and best practices
- Focused Improvement
- DMAIC process
- Why-Why analysis to identify the root causes and possible contributing factors
- Structured problem solving
- Analytical data analysis
- MindMap building software for Why-Why analysis.