

## Abstract



Holcim Lanka Limited, one of the largest cement manufacturers in Sri Lanka embarked on a grinding capacity expansion in one of its manufacturing plants, Ruhunu Cement Works located in Galle.

Although the new roller press is planned to commence commercial operation in the beginning of 2014, the proper logistics plan is not setup to ensure smooth dispatch of the increased volumes.

The purpose of this research is to identify the bottlenecks in the current outbound logistics process of Ruhunu Cement Works and develop a smooth dispatch process plan to facilitate timely implementation, to cater RCW commercial operation.

RCW has a total silo capacity of 9,200 MT. currently the plant operates with an annual production of 400,000 MT. Thus it is critical to check its capability of handling a 1,000,000 MT production with the same silo capacity. It concluded that RCW can manage the stock levels with current portfolio but not with a new product.

RCW currently operates with one packer and another high speed packer will be installed under the expansion project. However customers of RCW are currently experiencing a high load cycle time at the plant, hence it is important to check the process capability and simulate future scenarios to identify bottlenecks in the system. Main root cause was the skewed truck arrival pattern which causes high waiting times during peak hours. This concern was simulated under many potential scenarios and small scale quick fixes are introduced to the Logistics team to execute.

In addition it is recommended to conduct a primary data gathering to identify customer behaviour models which causes this arrival pattern. Also a mechanised warehouse was proposed to maximise customer satisfactions.

An analysis was conducted to minimise the total cost to serve through distribution optimization, in order to gain the maximum advantage of HLL volume expansion. Recommendations were made based on the findings to devise an end to end planning tool for Logistics to optimise its distribution while maximising its resources.

**Key words:** Silo Capacity, Load Cycle Time, Truck Arrival Pattern, Cost to Serve, Distribution Optimization