

# Improving Productivity of a Bottleneck Operation

How TQMI identified and overcame a key bottleneck to dramatically improve production productivity for India's leading home appliances company.

## The Client

One of the largest home appliances companies with a significant market share in the Indian market. The company's product portfolio includes a wide range of washing machines, refrigerators, microwave ovens, and air conditioners. The company operates through three of its state-of-the-art manufacturing facilities in India.

The company is known for its commitment to provide its consumers with forward-looking solutions.

## The Current Scenario

To keep up with the market demand for its refrigerators, the company had to put in extra production hours. It was apparent that door production was happening at a slower than the required rate.

## TQMI Approach

A deep analysis of output data showed that door foaming was the bottleneck in the production process. The TQMI took a closer look at all the elements of the door foaming process and identified the following factors contributing to low productivity

- The production process was not optimally utilising the available moulds – only 6~ 7 moulds were being used in one cycle against the available 9
- Due to constant shifts in the marketing requirements (multiple times in a day), moulds had to be frequently changed – leading to high changeover cycle times
- The foaming process itself was consuming high cycle time

## The Solution

The TQMI team suggested several strategic point solutions to mitigate specific challenges.

- **An integrated approach**

TQMI suggested a better planning system and closer coordination, to enable seamless and timely communication between production planning, assembly, and foaming sections. This led to an improvement in the loading patterns of the doors and a reduction in the effort of mould changeover.

- **Reduce waste**

The TQMI team did a complete review of the process maps for both setting and foaming operations. This helped identify several Non-Value-Adding (NVA) activities that could then be removed with the help of lean tools to optimise efforts.

- **Work smart**

The TQMI team suggested that certain Value-Adding (VA) activities be combined, and others are done in parallel to save time. The team prepared new process maps and implemented those through several smaller projects.

### **Impact**

The project using the principles of Lean Six Sigma helped in

- Reduction in set-up time from 101 minutes to less than 24 minutes
- Reduction in foaming cycle time from 35 seconds to 23 seconds
- Improvement in productivity of the bottleneck operation by 55%
- Annualised financial savings of Rs. 3 million