

# Manufacturing Execution System Business Case



## Current Condition

An sample injection molding facility with 10 injection molding machines has the following performance metrics:

Machine Availability; 94.0% Performance; 90.5% Quality; 94%

**Overall Equipment Efficiency (OEE) 79.9%**

The Nysus Solutions MES system can provide opportunities for improvement in each of the three OEE factors.

**Availability** The Nysus Solutions MES system assists with improvements to machine availability through downtime tracking and alerts. Email notifications are provided based on preset parameters and can lead to decreased issue response time.

**Performance** Awareness of cycle time discrepancies can be increased through the use of the Nysus Solutions MES system. Customizable reports provide key cycle time data which highlights opportunities for improvements.

**Quality** The most effective way to reduce Quality related issues is to prevent them from ever occurring. Through process parameter monitoring, the Nysus Solutions MES system will provide alerts to processes that are trending out of control and stop the process once preset parameters exceed acceptable levels. Scatter plotting of defects also allows for improved root cause analysis.

## Future Condition

Through the use of the Nysus Solutions MES system, improvements to the sample injection molding facility could

Machine Availability; 96.0% Performance; 95% Quality; 96%

**Overall Equipment Efficiency (OEE) 86.6%**

## The Payback

The following provides detailed calculations regarding the annual savings associated with the process improvements listed above. Individual shift patterns and machines rates may differ.

$(\Delta \text{ OEE}) \times (\text{Hours/Year}) \times \# \text{ of Shifts} \times \# \text{ of Machines} \times \text{Machine Rate}$

$(86.8\% - 79.9\%) \times 2080 \text{ hours} \times 3 \text{ shifts} \times 10 \text{ Machines} \times \$100/\text{hour} = \$418,080$