

Executive Summary

Manufacturing Performance Benchmark Study For Fast Moving Consumer Goods

Manufacturing organizations undertake a variety of performance improvement initiatives such as Lean Manufacturing, Six-Sigma, TPM and TQM. Organizations leverage KPIs, including Overall Equipment Effectiveness (OEE) to manage and measure such initiatives.

During 2015, Epicor in conjunction with Sage Clarity studied over 100 global manufacturing operations worldwide to benchmark performance and correlate over 20 manufacturing KPIs. Researchers used the Epicor/Informance Enterprise Manufacturing Intelligence Suite and Clarity advisory services to collect data, derive insight and discover correlations to operational success of tactical and strategic actions.

Key Findings

2x

Best-in-Class and Average organizations exhibit an OEE of over **2x** over Laggards

30x

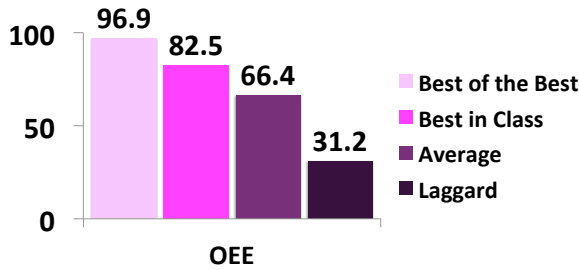
Knowledge sets apart Best-in-Class performers over Laggards: Only 0.5% of downtime reasons are unknown for Best-in-Class vs. 15.7% unknown downtime reasons exhibited by Laggards. A factor of over **30x**.

20,000

An average production line stops **20,000** times per year. The poorest performing operations exhibit 6X more minor stops per year than the best operations.

Overall Equipment Effectiveness (OEE) for all Tiers

Leveraging the Tier Ranking Methodology (see next section), the analysis reveals the OEE measure for each tier and the sizeable gap between Best-in-Class performers vs. Laggards.



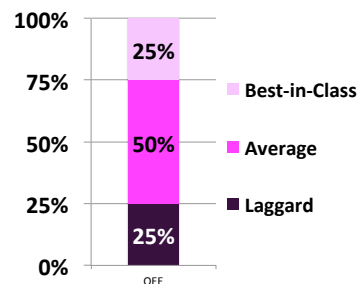
On average, Best-in-Class organizations, exhibit an OEE 2.6x better than Laggards, due to an OEE of 82.5 vs. 31.2:
 $(82.5 / 31.2 = 2.6)$

From this stack ranking, we then correlate related KPIs to each tier to determine attributes and behaviors of these tiers: which KPIs impact OEE, either positively or adversely.

Tier Ranking Methodology

The analysis begins by establishing OEE as the Best-in-Class determinant: Higher OEE indicates better performance. All organizations are sorted from high to low by OEE, and related KPIs are then correlated to determine KPIs that impact performance.

Tier	Definition
Best-in-Class OEE	Ranks in the Top 25%
Average OEE	Ranks in the Middle 50%
Laggard OEE	Ranks in the Bottom 25%



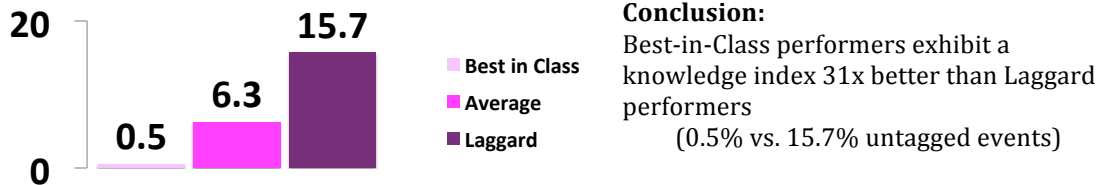
What do Best-in-Class organizations do to achieve high performance?

The study reveals several operational KPIs that are crucial to performance:

KPI	Definition
Knowledge Index	Percent of untagged downtime
SKU Anomalies	SKUs that exhibit a production rate of +/- 10% of ideal production rate for the SKU.
Minor Stop Index	Number of minor stops per hour (minor stop = stop of a duration of 10 minutes or less)
Availability	Uptime over Scheduled Time

Two KPIs Critical to Performance: Knowledge Index and Minor Stop Index

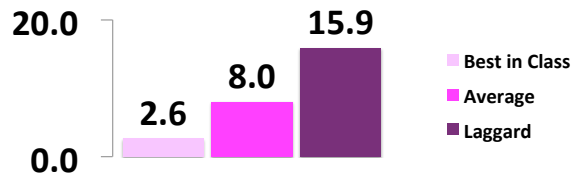
Knowledge Index



Minor Stop Index

Conclusion:

Manufacturing operations with the best minor stop index, have 6x fewer minor stops per hour than the worst performers.



What Should I Do?

If OEE > 70%: Best-in-Class Performers and Average Performers:

- Focus on reduction in short-stops, which can correlate to better availability. Availability is the KPI most adversely affecting OEE.

If OEE is between 50 – 70%: Average Performers:

- Focus on programs which reduce/eliminate equipment failure, which correlates to unplanned major downtime, another KPI affecting OEE.

If OEE is between 30 and 50%: Laggard Performers:

- Focus on tagging downtime events regardless of duration to provide improvement insights
- Focus on reducing equipment failure that can lead to significant amounts of major downtime, impacting availability and thus, OEE.

For More Information

This Executive Summary contains a small subset of the insights and actions that organizations can take – both strategic and tactical to improve performance. To Schedule a briefing on the full study, contact Sage Clarity. During this exclusive briefing you will learn insights and strategies gathered during the study. You will also have the opportunity to ask questions about the to adapt these best in class strategies to your business.

Contact Sage Clarity at info@sageclarity.com or call 800-809-3042.