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# HOW AUTO SUPPLIERS IMPROVE OEE EQUIPMENT AVAILABILITY BY COMBINING MACHINE DATA WITH OPERATOR INSIGHTS



If you're an auto supplier, then Overall Equipment Effectiveness (OEE) is likely on your mind these days. After all, OEE is the gold standard for measuring your effectiveness as a manufacturer.

One of the three legs on the OEE stool is Equipment Availability (the other two legs are Equipment Performance and Product Quality). Equipment Availability is the metric that measures how often your machines are running when they're supposed to be running. It is expressed as a percentage and indicates the percentage of scheduled time that your operation is available to operate. Your goal with OEE is to reach a score of 100%, which means your process is always running during planned production time.

You calculate your Equipment Availability by dividing your actual production time (in minutes) by your potential production time (in minutes) and then multiplying the result by 100 to achieve a percentage.

**FOR EXAMPLE:**

**Potential Production Time:** 8 hours = 480 minutes

**Actual Production Time:** 7 hours = 420 minutes

**Time Loss:** 1 hour = 60 minutes

$$420 / 480 = 0.875$$

$$0.875 \times 100 = 87.5\%$$

**Equipment Availability Score:** 87.5%



# COMMON CAUSES OF MACHINE UNAVAILABILITY

Once you start tracking your Equipment Availability, you discover that it rarely (if ever), reaches a score of 100%. Things happen. Here are the most common reasons that auto suppliers don't achieve 100% Equipment Availability.

## **SETUP AND ADJUSTMENT**

Each shift begins with time devoted to getting the equipment ready and calibrated for production.

## **MACHINE BREAKDOWNS**

The equipment breaks down unexpectedly (or expectedly) from time to time.

## **MATERIAL SHORTAGES**

The equipment requires materials or parts to be productive, and when these are missing or slow in getting to the machine, it sits idle.

## **CHANGEOVER TIME**

The machine sits idle as operators convert a line or machine from running one product to running another.

## **BLOCKAGES**

A sensor gets blocked, a piece of material misfeeds, or the equipment jams.

## **IDLE TIM**

Coffee breaks, lunch breaks, and other things leave the machine idle.

## **START UP**

Getting the equipment up and running again after repair, lunch break, or holiday eats into Availability.

# HOW TO IMPROVE YOUR EQUIPMENT AVAILABILITY

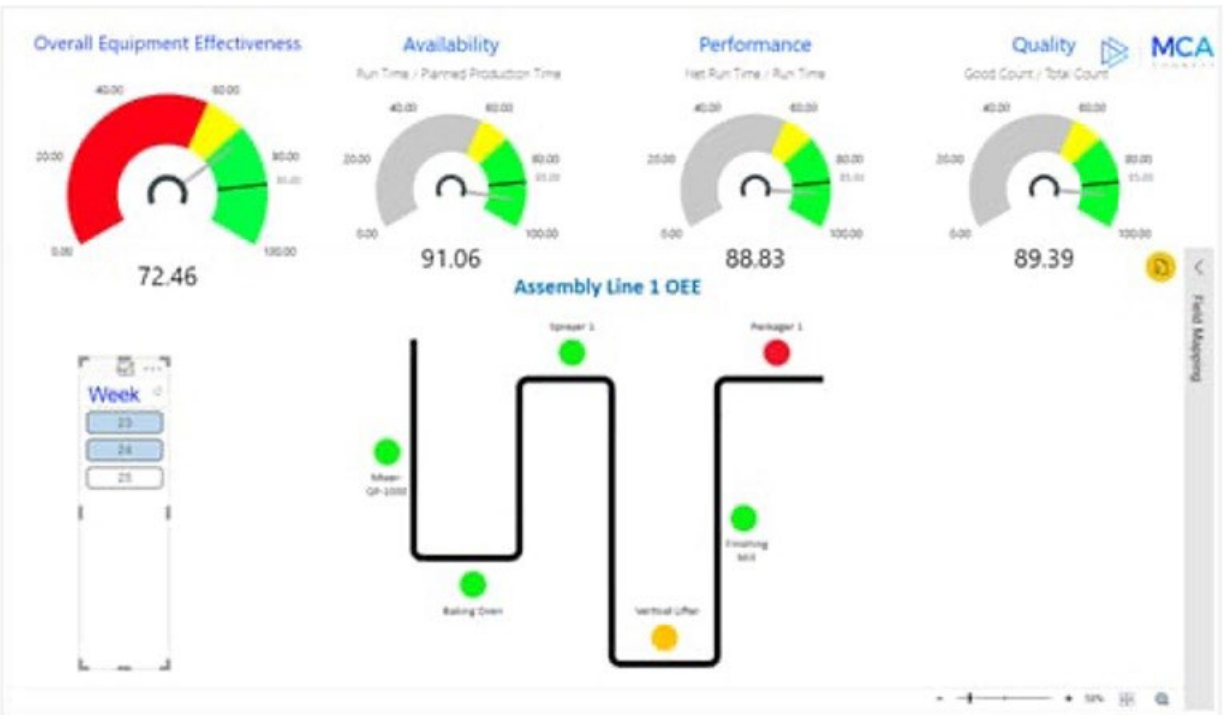
There are several things you can do to improve your Equipment Availability. You can conduct preventative and predictive maintenance, for example, so that you reduce or eliminate machine breakdowns and unscheduled downtime. The other steps you can take involve collecting and acting upon data.

## **MONITOR EVERY MACHINE**

Your first step is to install real-time, condition-based monitoring devices on every piece of equipment used in production. Sometimes these IIoT devices are supplied by the machine's OEM. Other times, you'll need to find a third-party solution. The key is to have one on every machine that matters.

## **CONSOLIDATE YOUR MONITORING**

The other key to success with managing your equipment data is to consolidate it into one application so you can quickly see how well your plant is performing. A tool like [OEE CONNECT](#) from MCA Connect, for example, monitors and analyzes your equipment performance so that you better predict facility production and optimize Equipment Availability.



*When you see your consolidated IIoT device data displayed on a custom OEE dashboard, you visually understand exactly where you stand in real time with your Equipment Availability.*

**CONDUCT ROOT CAUSE ANALYSIS**

Stop applying quick fixes and spot solutions to Equipment Unavailability issues. Instead, conduct root cause analysis of machine breakdowns, then work to eliminate the root causes. Don't just look at the symptoms. Look for—and remedy—the causes.

**TALK TO YOUR OPERATORS**

Often, the data that you need to improve your Equipment Availability isn't found in the machine or on your OEE dashboard, but in the heads of your equipment operators. No one is as uniquely familiar with your machines as your operators. Your workers know why machines break down, how and why jams occur, why your setup and adjustment times are as long as they are, and plenty more.

So, if you want to improve Equipment Availability, start with your operators. Create a formal, systematic way to gather, organize, and display their vital feedback. A platform like [OEE CONNECT](#) connects your shop floor to your back-office. When your operators receive alerts sent to the Operator App, they'll get a request to confirm and troubleshoot identified problems. This helps you to easily and visually understand critical manufacturing KPIs.



A tool like OEE Connect solicits regular input from your shop floor operators and integrates that data with information from your ERP system. This observational data from your operators supplements the data found in your machine historian and helps you to discover where you need to make adjustments that improve your Equipment Availability score.

**CONDUCT PREDICTIVE MAINTENANCE**

Naturally, one of the ways to reduce unscheduled downtime caused by equipment breakdowns is to conduct scheduled maintenance. But an even more effective approach is to conduct predictive maintenance. Unlike scheduled maintenance, predictive maintenance reduces the likelihood of equipment failure by monitoring the performance and condition of your equipment during normal operation.

**PRIORITIZE YOUR ASSETS FOR IMPROVEMENT BASED UPON DEPENDENCY**

The final step in boosting your Equipment Availability is to focus your energy, time, and budget on the equipment that matters. Do this by mapping out your production process, illustrating how each piece of equipment affects the other equipment further downstream. Once you map out your equipment dependencies, you will quickly see how improving the availability of one piece of equipment will immediately improve the availability of many others in your process.

# CONCLUSION

If you're an auto supplier and you need to boost OEE by improving Equipment Availability, consider combining your machine data with insights from your equipment operators. Consolidated IIoT data and open conversations with the workers who operate your equipment ensures that you understand the root causes of your Equipment Availability issues.

If you need help in this area, check out [OEE CONNECT](#). It's a unique offering from MCA Connect that accelerates your journey to Manufacturing 4.0 by capturing manufacturing data and operator insights at scale.



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AN INTRODUCTORY MEETING.**

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