Tuppas Software Corporation

Monitoring and improving OEE (overall equipment effectiveness) with browser-based software applications

Tuppas Software Corp.
PO Box 171
Waterville, Ohio 43566 USA

t: 1-877-897-7902
f: 1-877-322-8963

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OEE, or overall equipment effectiveness, drives improvements in manufacturing effectiveness and efficiency. By monitoring and addressing it, lost production time can be turned into found profits. Many companies who recognize the importance of OEE have yet to realize bottom line improvements by addressing it.

With the advent of browser-based manufacturing software applications, it is now easier than ever before. Equipment downtime can be easily monitored, recorded and reported to allow management to effectively address the areas which need improvement. An accurate picture of OEE can also help companies make appropriate equipment purchasing decisions.

Downtime losses typically come from equipment availability, performance rate and quality rate.
Typical losses include:

Availability
• Planned downtime
• Set up time
• Unplanned recorded downtime or breakdowns
Performance Rate
• Reduced speed
• Minor unrecorded stoppages
Quality Rate
• Rejects
• Rework
• Yield and start up losses

There is a formula for calculating the OEE of a piece of equipment. But you do have to know the machine's availiability, performance rate and quality rate to use it.

Example: 50% Availability (0.5) X 70% Performance Rate (0.7) X 20% Quality Reject Rate (results in 80%(0.8) acceptable) = 30%OEE

More attention paid to improving equipment productivity will help American manufacturers become leaner and improve bottom line profits to allow for competition with overseas manufacturing. A good place to start monitoring productivity is at a bottleneck. Using OEM production rates, accounting for change-overs, planned downtime and uncheduled downtime, manufacturers can benchmark the productivity of their machines. The idea is to then leverage this information to make improvements in the processes or the equipment.

How to leverage information to improve production

There are some software vendors who specialize in software for manufacturing which helps manufacturers utilize productivity data to improve their processes and ultimately their bottom line. Configurable browser-based applications are the ultimate solution for collecting and reporting production data, due to a number of advantages:

Scalability. Can be used at any size plant and multiple plants with anywhere access.
Real time availability. gathers, summarizes and presents plant floor data in real time
Integration. Can be integrated with almost any data source
Export data to other systems. These downtime software systems can export data for use in

Other enterprise-wide systems such as supply chain management or Enterprise Resource Planning (ERP).
Flexibility. Customizable reporting structure allows for viewing the data a manufacturer wants to see.
Easy to use interfaces. Employees log downtime occurances with an easy to use interface or they can use automation to gather data.
Quick implemenation. Since these applications are browser-based, there is no installation process at individual computer work stations. This allows for easy upgrades, and modifications as well as decreases IT and computer equipment costs. The software can be located on internal or external servers.
Rapid configurability. Entry screens and reports are built on an object oriented structure which allows changes to be implemented in a fraction of the time required by conventional systems
Data Push. This is the ability to warn plant management in real time that production problems are occurring on the floor. The software can send auto email or text messages to the appropriate management personnel. This enables staff to become proactive instead of reactive.

These browser-based applications allow for so much more flexibility, lower cost of owership and such a shorter time to implementation that it's hard to believe that they are usually much less expensive than their old legacy system counterparts.