Gemba Solutions
Plant Efficiency

**Improving workplace processes
through technology**

The OEE Metric

For those 'lean manufacturers' who are focused on maximising their output whilst maintaining product quality then Overall Equipment Effectiveness (OEE) offers an ideal key performance indicator. Through OEE, plant and process efficiency can be benchmarked, areas for improvement identified and corrective action implemented, measured and sustained.

Measure to Improve

In any manufacturing environment having access to clear and concise information on how the plant and processes are performing can make a real difference. Making that information visible to the whole team in real-time allows the relevant people to react to situations as and when they occur. Seeing the minor (but crucial) detail but not losing sight of the bigger picture enables you to rapidly make the right decision at the right time.

In addition to identifying your potential capacity and throughput, an OEE solution will also help you to clearly identify your key manufacturing issues:

♦ the availability, downtime and utilisation of your plant and processes

♦ how your plant and processes are performing against standard

♦ if and where product quality is being compromised

♦ your constraints and bottlenecks

♦ your plant and process MTBF (meantime between failure)

♦ your support service performance (response times, MTBF, etc.)

In order to accurately report on plant efficiency, Gemba's PLANT EFFICIENCY module gathers information from a number of key sources.

That gathered information is merged, manipulated and used to populate a comprehensive set of displays, reports and analyses which it feeds back to the team through their PCs, tablets, Andons and other intelligent devices.

Whether your process is simple or complex, our PLANT EFFICIENCY module enables you to configure an OEE solution which accurately reflects your process. Its flexibility ensures that the right information is deployed in the right place at the right time. From the live display of key performance indicators on the shop-floor through to the generation and distribution of complex reports and analyses to the production team's desktop, our PLANT EFFICIENCY module will perform.

The OEE metric has long been used in lean manufacturing as a tool for improvement and, where implemented, has acted as a valuable catalyst for continuous improvement, 6 Sigma, value stream mapping, Kaizen and other lean activities.

The software: what does it do?

The PLANT EFFICIENCY module monitors and reports on a plant's operating efficiency using the OEE (Overall Equipment Effectiveness) metric, which focuses on the three key elements of production affecting plant efficiency; *availability*, *performance* and *quality*.

♦ The *availability* element reports on how well a plant is being utilised, breaking down its time into planned downtime, unplanned downtime and unallocated time, pointing the user to production problems, bottlenecks and other areas from which lost time can be clawed back

♦ The *performance* element reports on how well a plant is performing against a defined standard (e.g. parts per minute). With this information the user can quickly pick up on slow and fast running and clearly see what, if any, effect speed changes are having on output quality and equipment reliability

♦ The **quality** element reports on the ratio of good parts to bad, analysing and reporting on rejects by 'reason'. In addition to determining where your quality issues lie, this data is often used to confirm compliance to customer demands, including required tolerances and average weights and measures

How does it do it?

The PLANT EFFICIENCY module relies on high quality information which it gathers from a wide variety of sources across the plant...

♦ It automatically gathers status and throughput information from the shop-floor plant and equipment (i.e. Machine status, good and bad part counts, stoppage reasons, etc.)

♦ It manually gathers other information relating to the manufacturing process from the shop-floor team (e.g. job detail, stoppage reasons, etc.)

♦ It communicates with the ERP and other site systems and sub-systems, pulling in production schedules, product standards and other information required to determine manufacturing efficiency

Once gathered the data is merged, analysed and presented back to the user as:

♦ Out-of-the-box displays and reports which provide comprehensive manufacturing intelligence of plant and equipment status and current and historical performance.

♦ User-definable overview displays which provide the same level of information but in a form customised to meet the precise needs of the user and of those viewing it.

♦ A dynamic chart builder provides a raft of reports, each of which can be populated with user-selected data, enabling a comprehensive analysis of the manufacturing process to be performed.

What will it do for me?

Suited to all types of process, whether automatic, semi-automatic or manual, our product will act as a catalyst to your improvement programme, helping you to reduce your downtime and stabilise your performance without compromising your product quality.

Machine ID	Availability	Performance	Quality	OEE
Machine 01	64.1	78.3	98.7	49.6
Machine 02	0.3	0.0	0.0	0.0
Machine 03	66.0	78.0	98.8	50.8
Machine 04	62.8	76.5	98.7	47.5
Machine 05	63.8	76.6	99.0	48.4
Machine 06	63.5	77.8	98.7	48.8
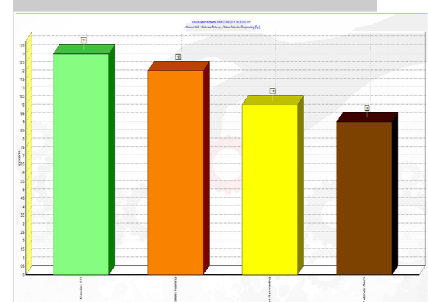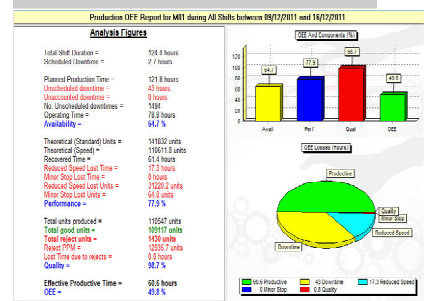
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