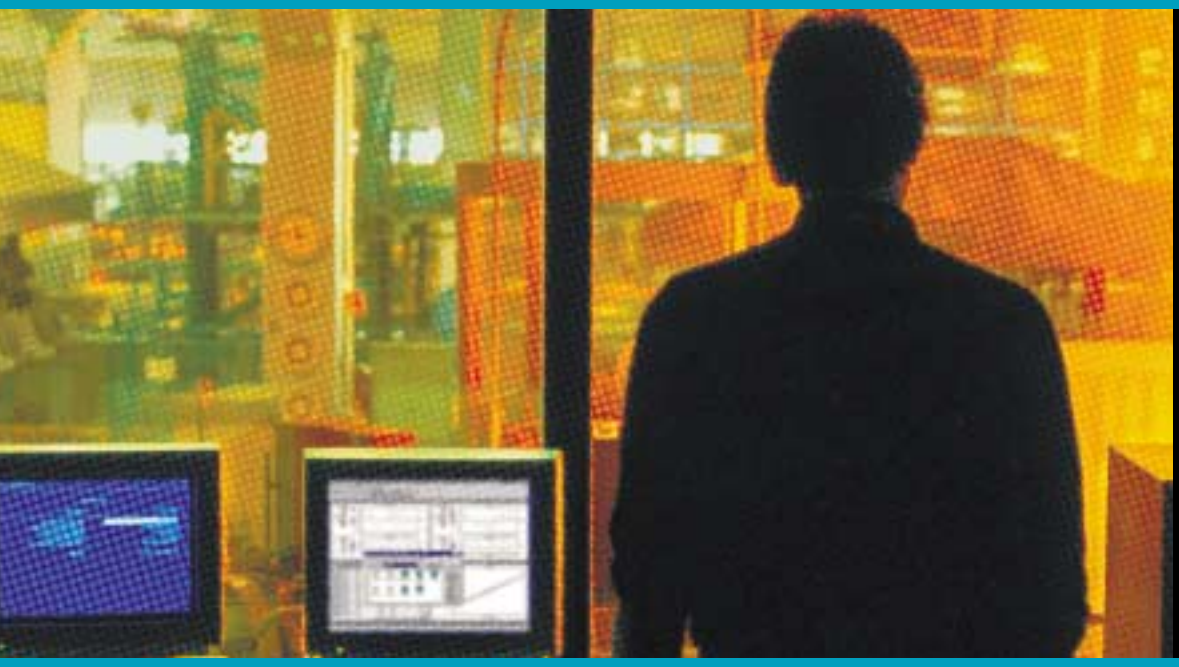
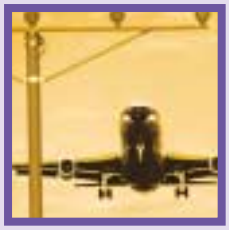


## OEE is a Challenge

*OEE - Overall Equipment Effectiveness is a critical measure of manufacturing performance that can be used to drive results in TPM or Lean Manufacturing Programs.*

invensys Wonderware®

Powering intelligent plant decisions in real time.



The trouble with many companies today is that a significant portion of their manufacturing facilities operate below their true capabilities. The reasons are various: poor asset performances, poor shop floor practices, poor planning. Whatever the reason, manufacturing companies are being compelled to improve their asset performances.

Good asset performance increases shareholder value, drives profitable growth, significantly contributes to lowering the costs and increasing profitability and therefore to increasing competitiveness.

No business can afford to operate inefficiently, and it is particularly true when, as today, because of the joint effects of globalization and low demand, better assets utilization along with an increased flexibility is necessary.

Manufacturers are continuously looking for new ways to reduce costs and waste, operate more efficiently, and get more capacity from their existing lines. They must maximize asset utilization to prevent costly capital expenditure and competitive position loss. The difficulty lies in accurately, effectively, and consistently monitoring asset utilization in the production environment. Companies need this information about performance in a timely manner to make critical decisions about capital spending, ways to tap into unused capacity, and drive improvement from equipment and consumables vendors.

The principle of OEE is to work in order to maximize the saleable output from equipments by increasing productivity in three areas: availability, performance and quality. In order to streamline your assets, and therefore to remain economically viable you need to:

- Increase Efficiency - Improving efficiency will make it possible to eliminate extra shifts and meet your production schedules without heroics.
- Reduce Downtimes - Eliminating preventable production problems will measurably reduce plant downtime. The reduced downtime will cut costs.
- Increase Capacity - If you increase efficiency and decrease downtime, you will be able to increase the effective capacity of your plant.
- Reduce the Number of Full Time Equivalents (FTE) - Increased efficiency and productivity will enable you to redeploy your human resources more cost effectively.
- Increase Quality - Reducing rejects and waste will help you increase productivity and the effective capacity.

To better understand how well a manufacturing area is performing and to identify what is limiting greater effectiveness, Overall Equipment Effectiveness (OEE) brings the manufacturing aspects of efficiency, throughput rate, and quality into one common metric and provides one single measurement of performance.

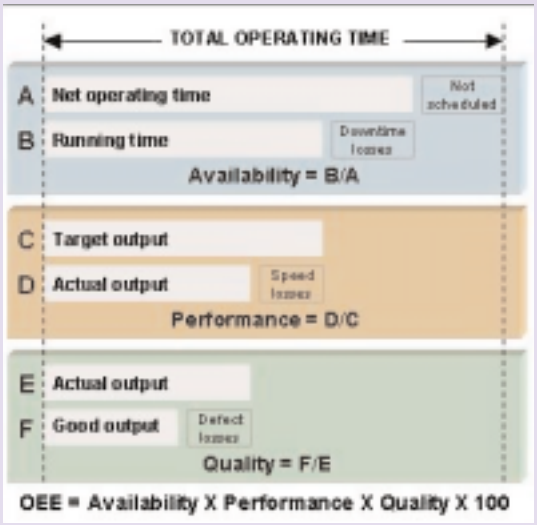
The OEE measurement takes into account three components:

- **Availability** - The percentage of actual operating time compared to potential operating time.
- **Performance** - The percentage of parts produced compared to the expected output.
- **Quality** - The percentage of parts without defects compared to the total produced parts

**OEE = Availability * Performance * Quality**

World class manufacturers achieve and maintain an 85 % OEE over time in the discrete industry and 80% in the process industry.

We must keep in mind that the OEE (local to a machine, for a line or a complete shop floor) is only an indicator of good or bad health of the production equipment. This indicator alone will not help in improving productivity. It must be combined with a detailed and accurate logging of the reasons for non productivity (type of downtime - machine breakdown or lack of material or operator break), and this is one the main difficulties of the exercise.




## Pitfalls of performance improvement projects

The top management must be involved for a number of reasons: Performance improvement projects are not only software implementation and deployment projects. The software is a tool which provides information on reasons of non performance. Since production, quality and maintenance people will have to be involved in improvement meetings, it is critical that the top management of the company agrees on this project.

Sharing the OEE and non productivity reasons: the OEE monitoring solution must not be a tool for one department to blame others. Production improvement will happen only if everyone is aware of the issues and looks for common solutions.

Nothing is won forever: If the improvement team stops checking the reasons of non productivity, the plant will go back to a more chaotic state and the OEE will decrease again. The OEE monitoring and performance improvement program must become part of the culture of the company in order for your company to belong to the healthy club of World Class manufacturers who can reach and sustain high levels of production effectiveness.

## What an OEE monitoring solution should provide

A good performance monitoring software should provide the following features:

- Provide Accurate information on downtime (where and when),
- Involve the operator, but only when necessary,
- Provide the performance and non performance information to everyone in the company without requiring specific software,
- Provide the right information to the right persons in real-time in order to improve decision support,
- Be a tool owned by the customer (the configuration of the tool must be easy to modify) in order to support the improvement team in its non-performance hunting.
- Be non intrusive to the equipment control system. This is especially critical in FDA validated environments like pharmaceuticals where it is out of the question to re-validate the process because you plug a new performance improvement tool over it. The performance monitoring system should not generate new downtimes by itself, it should only track them.
- Be capable of linking the measurement with financial figures to see the value each improvement process brings.

The Wonderware OEE solution is ideal for manufacturing companies who are concerned with their ability to produce high quality products in the minimum time, using existing assets, and at minimum cost.





## How Wonderware can help you

Wonderware provides a complete solution based on consultancy services assisted by a strong successful methodology and Wonderware proven technology.

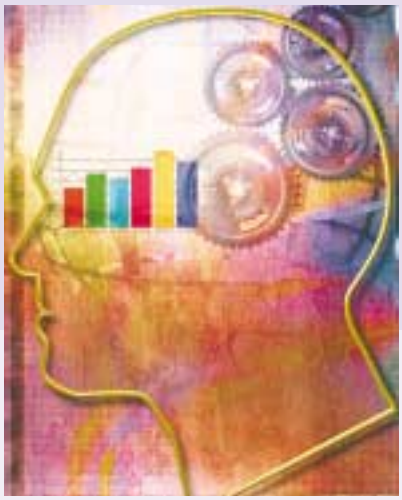
Wonderware offers a modular, integrated, browser-based product for monitoring and analyzing the production process in both real-time and historically. By systematically recording key data from the existing production floor systems, it provides insightful information about the production performance, including downtime analysis and process efficiency.

The product comes with out of the box functionalities like dozen of pre-defined reports and a project implementation that does not require any programming.

Our product requires no modification of your PLC code in order to collect accurate downtime information automatically. Its integrated Web site makes information on reasons performance and non-performance available in real-time to everyone on a standard PC without any special tool except a standard internet browser.

This product is easy to configure and very flexible. A simple pilot can be implemented in several days, showing the potential payback of this solution. The configuration can be easily modified by process or engineering personnel in order to cope with new equipment or new breakdowns to track.

Wonderware assists the customer in the deployment of a performance improvement solution. We deploy the solution progressively based on a risk-free methodology which demonstrates the expected payback at each step.



## Our Services

Wonderware has an unrivalled knowledge of the available technology and we want to leverage on it while establishing a partnership with the customer to work on the best solution. We offer a wide range of consulting services to support you to select and maintain our products as well as yours.

Based on our experience over the past ten years, we have defined a methodology which follows several steps. Here are the two cornerstones of it.

Proof of concept: This is an on site workshop with a focus on testing and proofing the OEE concept in your own environment. The goal for the workshop is for you to be reassured of the advantages you would gain by an OEE measurement. The installed system and the created reports will enable you to see first results in which of the three basic key performance indicators (Quality, Availability, Performance) contains the biggest hidden value. This is proven by showing examples of the reports produced during the workshop in your production.

Proof of value: This is a pilot project where the focus is on proofing the OEE concept in your own environment. The goal for the pilot is for you to be reassured of the advantages you would gain from an OEE measurement. The installed system and the created reports will enable you to see first results in which of the three basic key performance indicators (Quality, Availability, Performance) contains the biggest hidden value. Together we will define clear Key Performance Indicators (KPI´s) which will be linked to financial figures. The achieved value can befollowed up based on the reports produced during the pilot installation. That includes several steps, aimed at converting physical information into useful data, executing the project agreed with the customer, analyzing and portraiting the results, instituting the best foundation for any further task.

# Contact Wonderware

Please contact us to identify what we can do together in your business to make you more profitable.

Talk to us.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