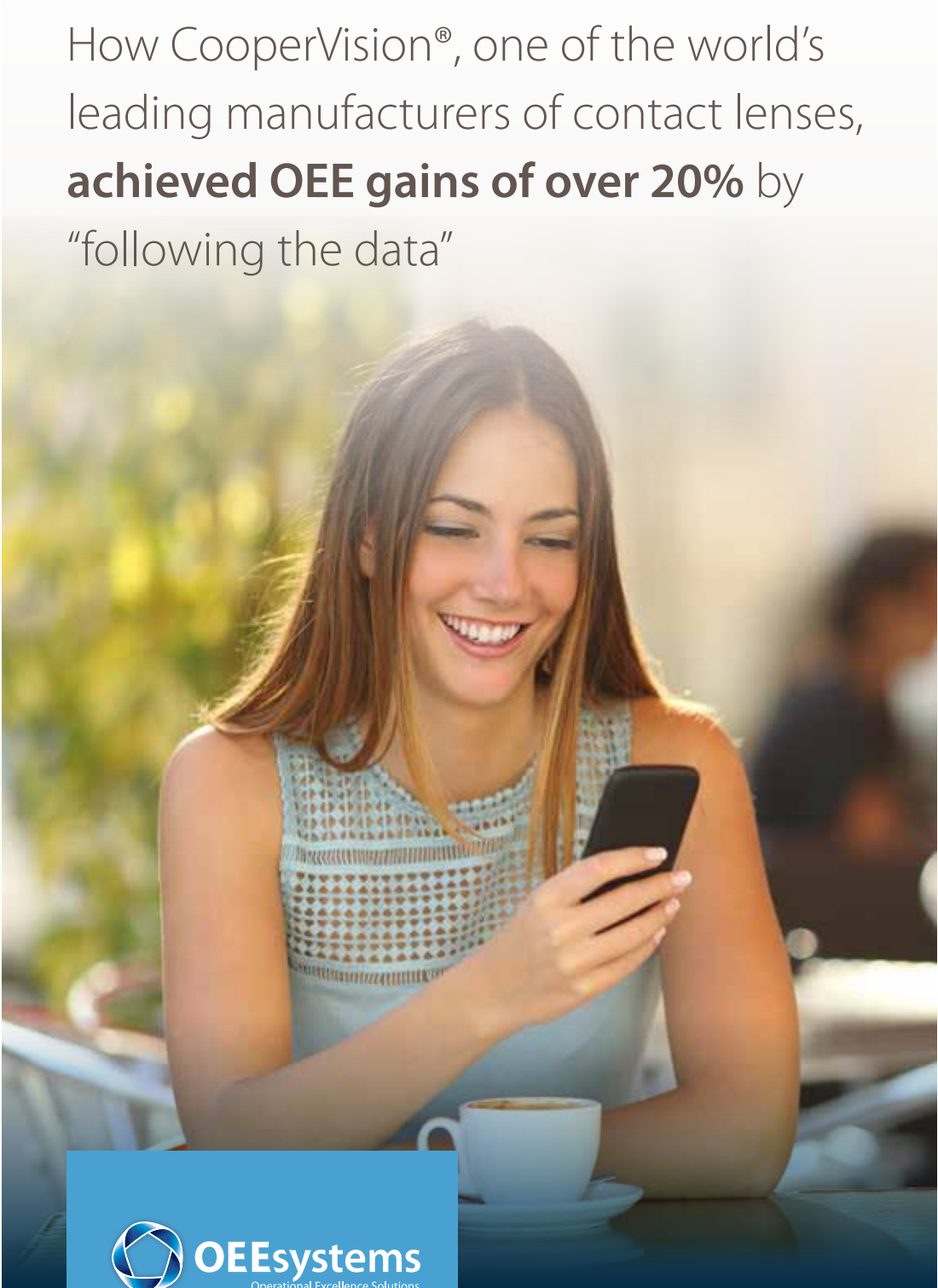


FOLLOW THE DATA

How CooperVision®, one of the world's leading manufacturers of contact lenses, **achieved OEE gains of over 20%** by "following the data"





ROB GEORGE

Asset Care Manager, CooperVision

Part of the Cooper Company, Inc. (NYSE: COO), headquartered in Pleasanton, California, CooperVision is a \$1 billion dollar global business with 7,800 staff and sales in over 100 countries. It is one of the world's largest contact lens manufacturers.

I'm the Asset Care Manager at CooperVision UK. My core objectives are simple:



TO **INCREASE**
OUTPUT



TO **REDUCE**
COST PER UNIT



WHILE MAINTAINING WORLD
CLASS **QUALITY** LEVELS

Over the past four years I have taken the business on a journey that we now call "The Science of Manufacturing". OEEsystems International is a key partner on this journey. In 2012, we chose OEEsystems because of their expertise, experience and unique software solution **PerformOEE™**, which powers real-time performance improvement.

Hamble, Southampton is where we manufacture CooperVision's range of contact lenses.

We initially installed PerformOEE™ on just one production line.

THREE INITIAL IMPROVEMENT OBJECTIVES:

- 1 Measure and **establish the reason for significant variations** in our batch changeover times, while developing a **WIN culture** in our Production Teams.
- 2 Identify and deeply **understand the cause of bottlenecks** within our manufacturing process.
- 3 Improve the visibility of yield losses and unplanned downtime.



IDENTIFYING THE PROBLEM AND IMPLEMENTING THE SOLUTION

PROBLEM:

We couldn't supply our growing market share using current platforms. We had run out of space to install new platforms. We had to think differently. The baseline OEE metric demonstrated we didn't need new factories or lines.

SOLUTION:



Using **PerformOEE™**, in two years we achieved:



29% INCREASE
Increase in Volume



68% REDUCTION
in **Unplanned Downtime**,
falling from 13.7% to 4.4%.

20% INCREASE
Increase in OEE

18% REDUCTION
in **Cost per Unit**

5% INCREASE
Increase in Yield

14.2 DAYS PAYBACK
Payback on PerformOEE™
every 14.2 days.

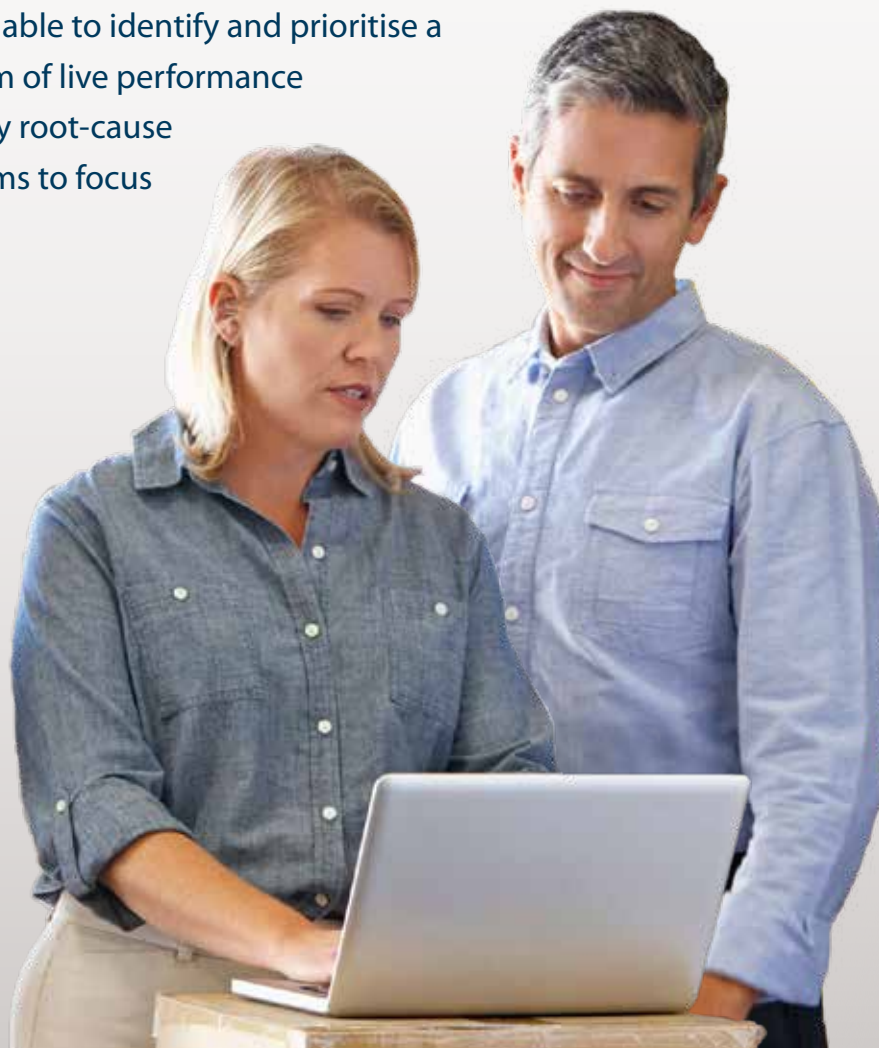
DELIVERING AUTOMATED, ACCURATE, INTELLIGENT, REAL-TIME DATA

The software's powerful root-cause analytics immediately highlighted and confirmed that we had substantial variations in the time it took to complete a batch change. While acknowledging that speed is important it is not always the optimum.

Based on the intuitive information provided – using the principle of **“Follow the Data”** – we reorganized our teams and worked with them to remove the variation, setting a standard time for batch changeovers. This gave us an immediate increase in our Overall Equipment Effectiveness (OEE) score and also improved our Single Minute Exchange of Dies (SMED) score because of better monitoring.

The next step was to address issues with equipment performance. Again **PerformOEE™** gave us unprecedented visibility and process control by highlighting problems in real-time, enabling the right response. It revealed how our machines were actually performing. The system identified key signatures for failure that were unique to an individual line, as well as generic reasons for failure across all lines. When these basic root-cause losses were addressed, the result was another lift in our OEE score.

“The software was able to identify and prioritise a continuous stream of live performance issues and identify root-cause losses for our teams to focus on and fix.”



A further benefit was that the software provided a clear understanding and granular breakdown of unplanned downtime – by line, product and shift – so we could work out our capability. As a result we significantly reduced our unplanned downtime.

We were able to review the lines and compare them, thus developing a robust process to sustain our improved OEE. We now have better organization of our teams, with critical modules and bottlenecks being monitored and highlighted. As a result we have had a significant decrease in unplanned downtime and yield loss.

Overall we have increased our OEE score by over 20% and the system pays for itself every 14.2 days – and we believe there is more to come. Following the data has been key to this achievement. **PerformOEE™** is now being installed at other CooperVision sites worldwide.

“Working with OEEsystems International has been a very positive experience for CooperVision UK. We have a great collaborative relationship and are working together to co-create the next generation of manufacturing excellence software. At the core of this is what we call **“The Science of Manufacturing”**.”



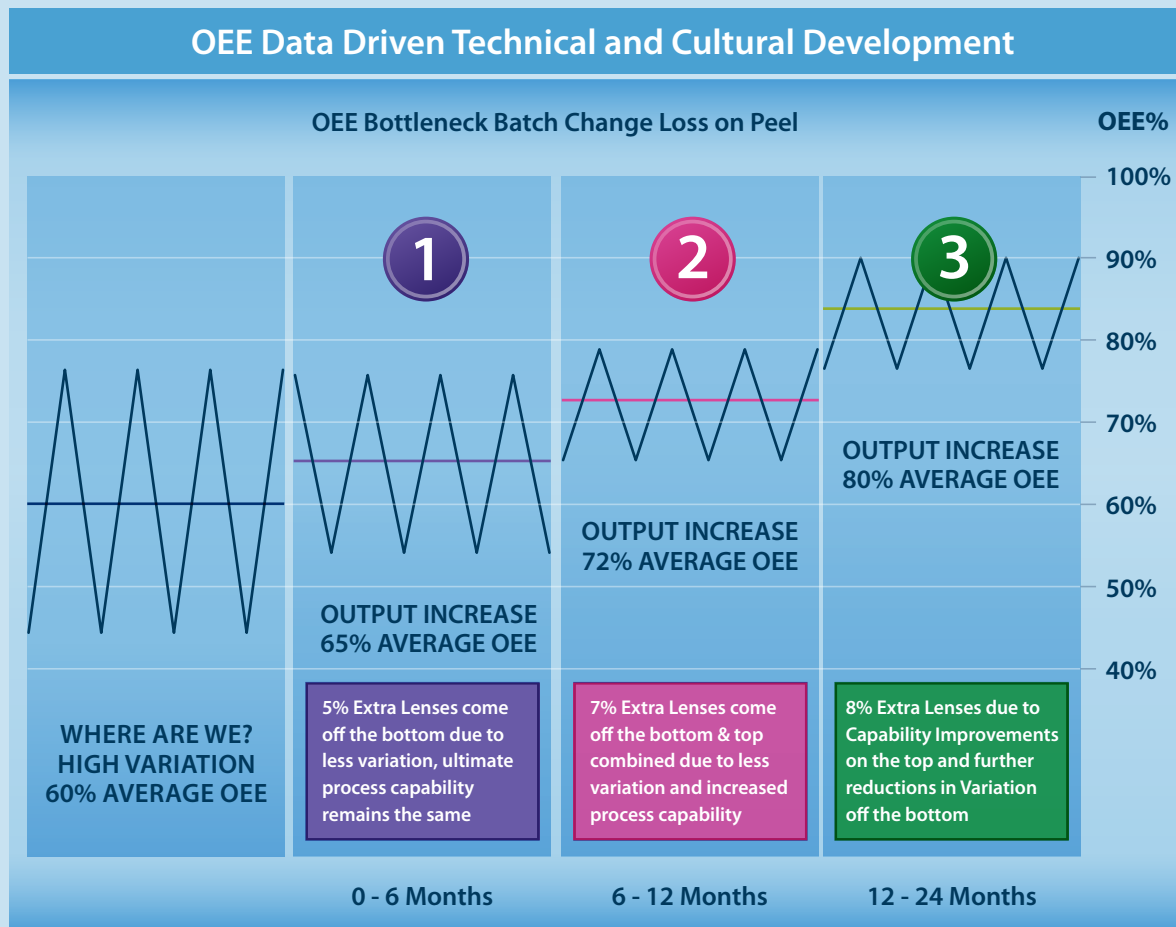
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CooperVision®



WHY IMPLEMENT PerformOEE?



PRINCIPLE: FOLLOW THE DATA

“Follow the data” means being guided by PerformOEE data analytics as to your next appropriate actions. Pet projects have no place on the path to Operational Excellence.

Before we brought **OEEsystems International** on-board we calculated OEE manually on spreadsheets. It was a good start and gave us an understanding of how OEE works as a key manufacturing performance management tool.

However this approach was unsustainable, as there was **significant effort, time and cost involved in collecting the data manually** and, while the spreadsheets were useful, they were not intuitive and powerful enough to provide us with in-depth real-time insights into our manufacturing process issues.

“By the time we had collected and were ready to analyze the data, it was too late. The data was time-lagged and the loss was historic.”

By the time we had collected and were ready to analyze the data, it was too late. **The data was time-lagged and the loss was historic.** We knew we needed to source both OEE software and the expertise that could be a game-changer for us. An extensive global search brought us to **OEEsystems International** and **PerformOEE™**.

This was our starting point on Line 13 chosen for the pilot – high variation in batch changeover times, with a 60% average OEE.

- 1 By empowering local teams - transferring accountability for batch changeovers and embedding a WIN culture - we got faster responses to breakdowns and less variation, resulting in 5% more lenses coming off the line. **OEE went up to 65%.**
- 2 Next we developed the Production and Manufacturing Support Engineer teams, optimized the line set-up, put in local continuous improvement (CI) and started using reliability-centered maintenance (RCM). The results? A further 7% increase in output – from reduced variation and increased process capability – **bringing OEE to 72%.**
- 3 As a final step in the pilot, we turned our attention to continuous improvements generated from using the pareto of losses to prioritize actions. We achieved a further 8% increase in output – again through a combination of reduction in variation and improvement in process capability – **bringing average OEE to 80%.**

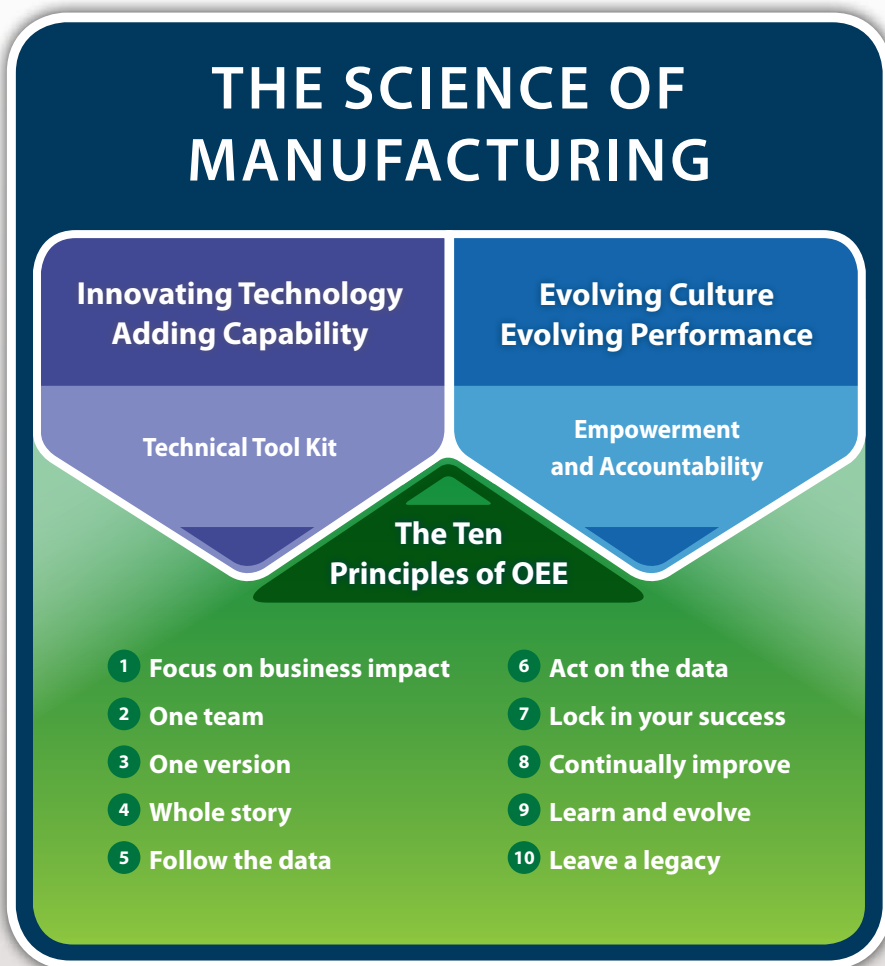
“In all, we achieved a 29% increase in output and a corresponding 20% increase in OEE. This success led us to implement PerformOEE™ across all our lines here in Southampton.”



THE SCIENCE OF MANUFACTURING: PRINCIPLES

OEE is used as a business metric by the world's leading manufacturing companies to measure the effectiveness of their processes and / or equipment, to identify improvement opportunities and deliver increased capacity and reduced costs.

OEEsystems International's **PerformOEE™** achieves step-change business performance improvement through data-driven technical and cultural development, embodied in **"The Science of Manufacturing"**.



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