



CONSULTING GROUP

Equipment utilization is increasing. The cooperation of machines and robots with humans is determining the added value of industrial production.

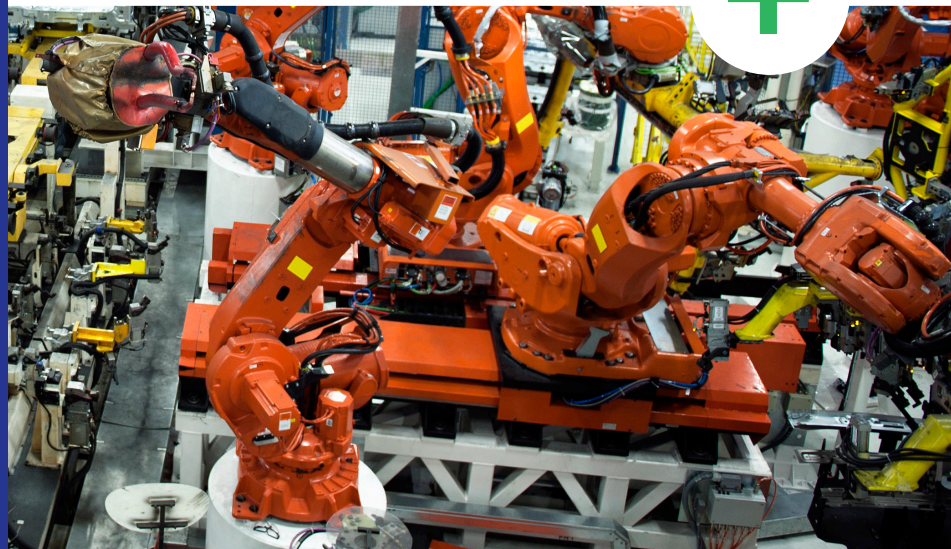
The seamless interaction between production and maintenance is gaining in importance.

ConMoto O.E.E.+ combines the most efficient levers to enhance overall effectiveness.

Inspiring solutions.  
**Implemented.**

O.E.E. +

Value stream optimized  
production and  
maintenance systems



## As automation and digital networking in factories accelerate: What are the implications for production and maintenance?

Technological progress permeates factories right to the shop floor. The demands on production systems become more and more challenging, as automation and intelligent networking bolster the role of machines and plants in creating added value. Manual labor is replaced by specialized machines and robots. In times of increasing plant and equipment utilization, merely organizing production systems according to lean principles does not lead to optimal results.

Most managers are aware that a competitive production system can only be achieved by continuous optimization of value streams and processes, resulting in the highest overall equipment effectiveness and maintenance efficiency possible.

In a nutshell, a value stream optimized production system is based on

- customer takt time as a pacemaker,
- short lead times,
- error-free production and
- high flexibility.

A value stream optimized maintenance system is based on

- high availability and reliability,
- stable production processes,
- efficient use of resources and
- continuous equipment improvement.

How can we integrate these approaches pragmatically? ConMoto has developed O.E.E. + as a specialized method for discrete manufacturing involving machines and plants with a substantial added value component. The aim is to get the best results of both worlds (figure 1).

It is a central lesson that a common alignment of production and maintenance is the key factor in enhancing the value adding performance of employees and plants simultaneously. It is crucial to integrate these two aspects, which have been in the past thought of as separate entities. This concept poses a challenge to the responsible managers and to the distinct cultures in production and maintenance.

ConMoto O.E.E. + is an improvement program designed to realize the hidden potentials in increasingly automated factories. The program provides the requisite know-how to meet the challenges posed by markets and technologies. Whether Industry 4.0 solutions are feasible solely depends on cost-benefit aspects. Economic viability is still the yardstick of a production system – even in the age of digitization and Industry 4.0.

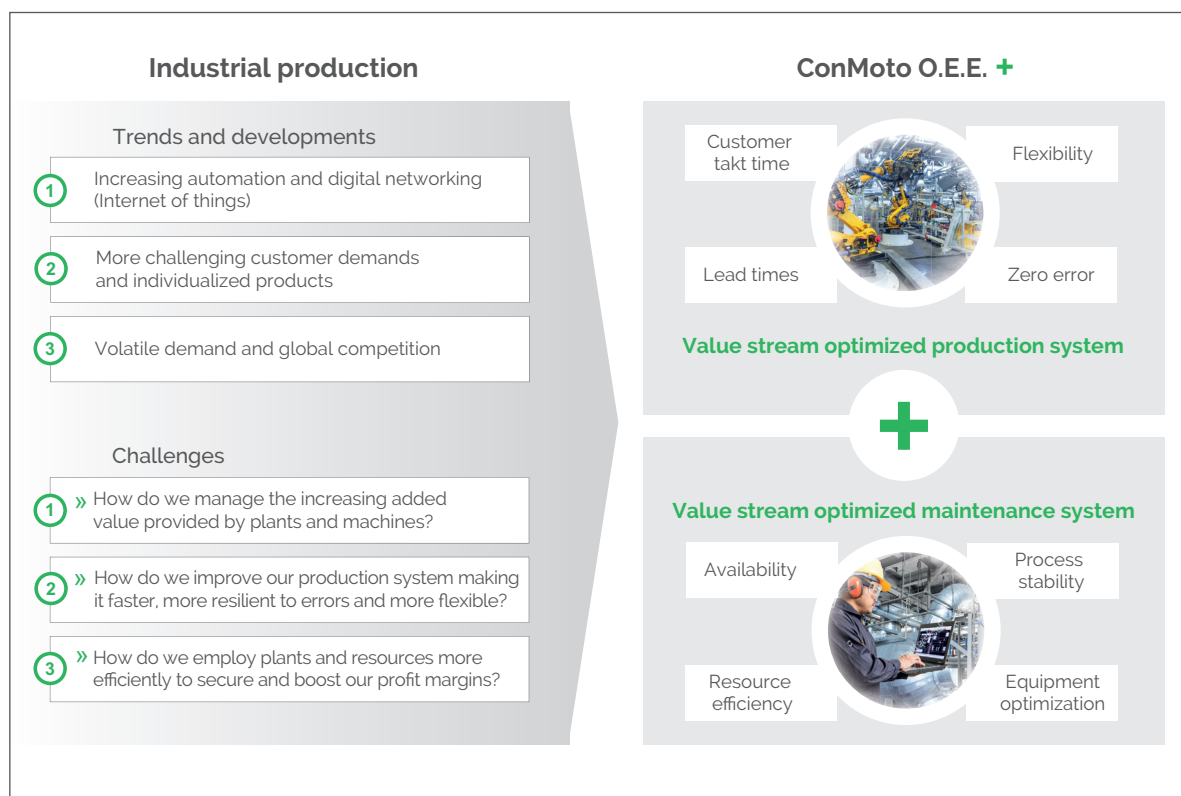


Figure 1: ConMoto O.E.E. + combines the most potent levers in production and maintenance

## First Steps: O.E.E. + ScoreTest®

Our analyses in manufacturing show, that in making improvement efforts clients underestimate the value added share provided by plants and machines. The O.E.E. + ScoreTest® is a tool developed by ConMoto to achieve transparency. The ScoreTest® combines the analysis of production systems with a detailed evaluation of the maintenance organization and the overall equipment effectiveness.

The test procedure is based on the proven ConMoto maturity model for production and maintenance. Within a week, an interdisciplinary team analyzes strengths and weaknesses of production and maintenance systems. The ScoreTest® method evaluates processes, structures and KPIs. Test results provide company specific control variables for improvements that are quantifiable by data and reference values.

ConMoto's approach does not simply focus on hard potentials, our projects also focus on activating client employees. Our intense workshops illustrate the supplementary aims of production and maintenance for the workers

involved. Shared objectives and an integration of levers make resounding successes possible, paving the way to fast, efficient and flexible manufacturing processes.

An overview over the ScoreTest® week:

- Value stream analysis and design,
- Evaluating core processes of production and maintenance,
- Work assignments and tasks, KPI-analysis and benchmarking,
- Interactive O.E.E. + scoring and best-in-class benchmarks,
- Defining and prioritizing value creation areas,
- Quantifying potentials,
- Developing an implementation roadmap.

An interactive approach is employed from the get-go, beginning with the analytical phase, to lay the foundation for a result oriented implementation. Those in charge of production and maintenance and the workers on the shop floor are involved in every aspect of the ScoreTest® to foster a commitment to swiftly implementing improvements.

## Our implementation projects achieve quantifiable results



Figure 2: Improvement of selected KPIs for different production types



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Established in 1990, we are the management consultancy with clout when it comes to implementation.

In musical terms, "con moto" means "moved" or "with movement". We named ourselves ConMoto, because we are convinced that consulting is only successful, if it moves people to take action and results in verifiable improvements.

Our consultants have a wealth of managerial experience and adopt an entrepreneurial approach to create sustainable value enhancement for our customers. Using innovative methods and acting in a spirit of partnership, we systematically develop and implement solutions, efficiently change structures and processes and successfully motivate people.

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Inspiring solutions. **Implemented.**