

How sustainable  
**Maintenance and  
Asset Management**  
put your company in the fast lane

New approach for the automotive industry



# Maintenance in the automotive industry – Driving billions

292 billion euros – that is the investment it would take to replace all of the production assets in the automotive industry of the 28 member states of the European Union. This figure includes all production systems and equipment operated in 2012 by automotive manufacturers and suppliers. What is more the annual maintenance budget of the automotive industry amounts to 46,4 billion euros – covering all direct maintenance costs as well as indirect maintenance costs caused by technical production downtimes – or five percent of the industry’s annual turnover.

A worldwide survey of the cost structure in main industries supports these figures and the contribution of a sustainable maintenance and asset management to a profitable and flexible productive output (see fig. 1).

The percentage of maintenance costs in relation to overall production costs varies widely from one industry to the other. As a general rule maintenance cost correlate with the equipment-intensity and complexity of production plants. In the automotive industry maintenance costs are especially important due to the high degree of automation.

Considering this development up to 40 percent of the influenceable production costs in the automotive industry are related to maintenance and asset management. This is a significant lever for the success of the company.

Obviously production efficiency is extremely important. Nevertheless standstill of production is a much too common occurrence and responsible for losses running into billions of euros for Europe’s automotive industry. But what are the future challenges for a sustainable asset management and where are the automotive companies today?

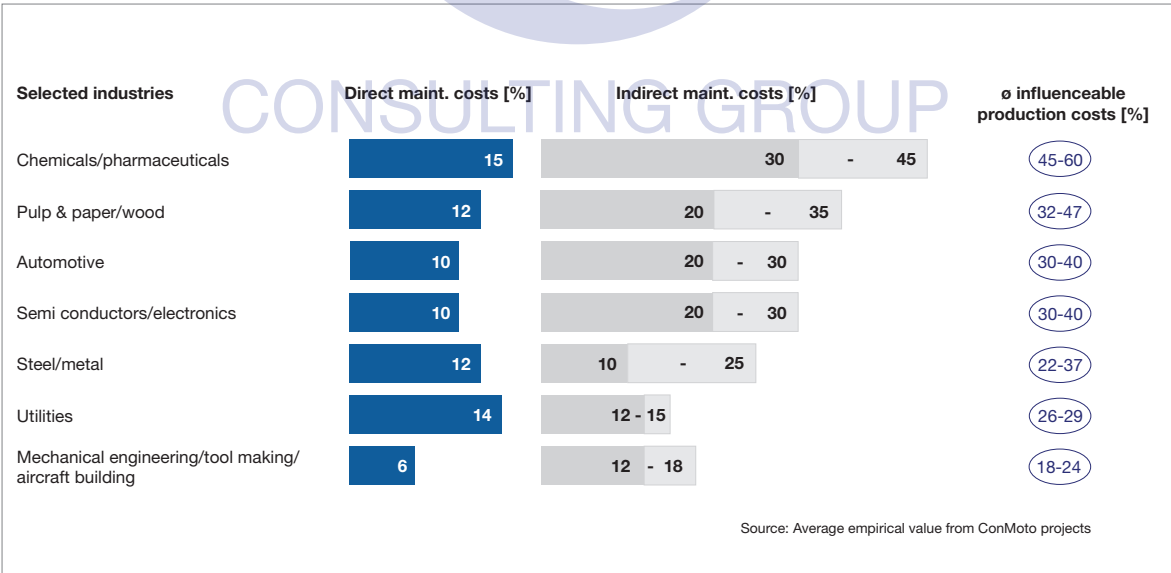


Figure 1: Average controllable production costs

1) Source: Eurostat, Destatis, own calculations

## Future challenges to production and maintenance

The automotive industry is in a state of flux. World wide production is growing and companies are investing billions. The money is invested in modernizing and expanding existing production sites as well as opening new sites in emerging economies. Companies have to deal not only with regional shifts in markets and production locations but also with specific risks and chances generated by a highly competitive business environment.

Volatility is the new normal. Technological innovation, ever shorter product life cycles, new technical guidelines, and binding technical standards are additional cost-pushing factors. As a result profit margins of the OEMs are shrinking due to pricing competition, rising production costs, and high capital intensity.

Examples of technological differences and resulting challenges to maintenance and asset management:

- Press line: high degree of automation (hydraulic systems/electronics); requires intensive maintenance.
- Coating & painting plants: extremely high degree of automation; high-level of maintenance due to cleanliness requirements.
- Body shell production: high degree of automation characterized by robotics and sensor technology; First line maintenance by technical production staff is common.
- Assembly lines: partly automated (especially in conveyor systems); Autonomous maintenance is less common, as production workers are working in tact time; small variety of spare parts.

In consequence the suppliers find themselves in a fix, as they are under massive pressure to adapt to the new conditions. They have to deal with strong competitors when supplying standard products and also have to meet lower prices demanded by OEMs, who are concentrating on an ever decreasing number of suppliers. Co-operation by automobile manufacturers and the wide-ranging introduction of modular systems and strategies bring additional pricing pressure.

**“ Production plants have to run smoothly and reliably. Day by day.**

Machines have to be used to their full capacity. That is one of the major challenges for a profitable global production system. Those in charge are very aware, that they have to get more out of their production plants. At the same time a growing range of variants calls for maximum flexibility of production processes and the machines involved.

Moreover the trend towards automation and digitalization along the value-chain embodied in the fourth industrial revolution (Industry 4.0) increases the complexity of production systems and presents new challenges to a comprehensive maintenance and asset management. Some proceedings, for example in coating, have similarities with the process industry when comparing shutdowns for cleaning, revision, maintenance or inspection.

The most important prerequisites of a sustainable and highly efficient production system are utmost reliability, Overall Equipment Effectiveness (O.E.E.), plant availability, and stable processes. These factors have to go hand in hand with maintenance, repair and technical optimization. The status analysis – which is a vital part of all ConMoto projects – highlights that a lot of automotive OEMs and suppliers have some catching-up to do.

The pages 4 to 7 are not included in this preview.

Should you be interested in the whole White Paper "How sustainable Maintenance and Asset Management put your company in the fast lane – New approaches for the automotive industry", please contact:

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