



CONSULTING GROUP

VALUE ORIENTED MAINTENANCE

THE STRATEGIC DIMENSION OF THE SPANNER

The Maintenance Study

Highlights

- 83 companies and production plants were examined in detail with reference to their maintenance and asset management performance
- The study shows considerable potential for improvement in all industry sectors analysed
- Practically proven design elements on the way to excellent value oriented maintenance are presented
- Quick and sustainable implementation results are realisable



PREFACE
THE MAINTENANCE STUDY
AUTHORS AND CONTACT PERSONS
CON MOTO

Page 3

▶ PREFACE

Page 4-22

- ▶ THE MAINTENANCE STUDY
- ▶ Executive summary
- ▶ Significance of maintenance
- ▶ Maintenance and asset management as a competitive advantage
- ▶ Study based on the results of the ConMoto MaintenanceScoreTest®
- ▶ Graduated model of Maintenance Excellence
- ▶ Status quo in maintenance and asset management - findings and need for action
- ▶ The most effective variables - results by approaching Maintenance Excellence
- ▶ Appendix

Page 23

▶ AUTHORS AND CONTACT PERSONS

Page 24

- ▶ CON MOTO
- ▶ Our consultancy approach
- ▶ Our company

PREFACE

▶ Preface

Do you know the feeling? You prepare yourself for a demanding mountain hike, a marathon or a transalpine on your mountain bike. You train, train and train without feeling that you're getting anywhere? Good intentions and back-breaking effort alone only lead to the desired level of performance by chance. If you want to reach your

best form, however, you initially need a comprehensive performance diagnosis and, building on this, an individually oriented training concept based on specialist knowledge.

Top business performances are achieved with the same approach. Deficits have to be recognised and, metaphorically speaking, training methods have to be changed. In this study ConMoto is systematically showing the strengths and weaknesses of European companies' maintenance management and is providing field tested proven design elements on the way to excellent value oriented maintenance.

But why is maintenance important at all? If you consider only business assets in production facilities and related machinery out of all investment goods in Europe, you reach a value of around 9.7 trillion euros in 2008. In Germany alone the equipment replacement value amounted to about 1.9 trillion euros. If you calculate a cross sector maintenance costs rate of 4.8 % (corresponding to the average value identified in this study), direct maintenance costs in European production locations add up to over 450 billion euros per year! These figures speak for themselves. Yet maintenance is not only of enormous significance for European enterprises. Our experiences show that maintenance and asset management, particularly sustainability issues, are also increasingly moving to the forefront in the BRIC states, in the Middle East and in many emerging countries. First of all, in order to meet the resulting high quality and cost related requirements of maintenance systems, a comprehensive overview of the issue is needed. And this is exactly where the ConMoto study "Value oriented maintenance – the strategic dimension of the spanner" comes in. 83 companies and production plants from various sectors were analysed in detail - with amazing results.

Reach your individual targets, develop your maintenance activities into sustainable value drivers to increase your competitiveness and stay motivated and active for your success tomorrow.

Yours



Nils Blechschmidt

► **THE MAINTENANCE STUDY**
**Value oriented maintenance - the strategic dimension
of the spanner**

► **Executive summary**

The production of a successful company today has to be not only efficient but also organised flexibly and with adaptability. To meet these requirements the searching gaze of many company managers is increasingly focussing on maintenance activities. Justifiably so, because value oriented maintenance and asset management are decisive for cost effectiveness and flexibility in producing goods. The higher the equipment intensity in a production plant is, the greater the impact of maintenance management. Thus at peak more than 60 % of production costs are directly and indirectly influenced by the efficiency of maintenance activities.

In the past few years the ConMoto Consulting Group has thoroughly examined the maintenance activities of 83 companies and production plants in total and has summarised the results in this study. It is clear that many companies are currently a long way from first class maintenance management. If school marks were used, the companies examined would get marks only between "poor" and "satisfactory" for their maintenance management systems. To better classify the conditions characterising maintenance systems (maintenance maturity), ConMoto has developed the graduated model of Maintenance Excellence. If you consider the relationship between the total number of points to the maximum number of points possible (corresponding to Maintenance Excellence) the industry average is only 46 %. The rear light of the study has considerable potential to catch up with a maintenance maturity of merely 32 %. Even the best company at 60 % has plenty of room for improvement. In an overall comparison, surprisingly it was precisely the most investment intensive and security sensitive process industry that is weakest with an average of 43 %. But also the best-in-class industrial area "automotive and mechanical engineering" is only in the midfield of the graduated model with an average of 51 %.

The analysis of maintenance systems shows considerable potential for improvement within the context of value oriented maintenance. The question remains of what to do to exploit this potential as quickly and sustainably as possible. By combining the current need for action and the respective cost-benefits relation of the implementation areas, five variables could be identified in the study that lead to particularly high gains in efficiency in all the sectors examined. Alongside the maintenance strategy these are "in- and outsourcing of services", "time management/capacity planning and scheduling", "process organisation" and "Key Performance Indicators and costing". ConMoto has developed a methodical approach proven in various industries for each of these design elements. It demonstrates an efficient way how companies can holistically drive forward the optimisation of their maintenance systems. The target is Maintenance Excellence.

The results speak for themselves. It was possible to achieve considerable improvement in all Key Performance Indicators (KPIs). One of the central cost effectiveness KPIs, the maintenance cost rate, was reduced by 23 % for all projects. The effectiveness, measured on the basis of the KPIs "spare parts months of inventory" (-45 %), "Overall Equipment Effectiveness" (+7 %) and "proportion of preventive maintenance" (+155 %), was significantly improved. Regarding order processing management it was possible to optimise the Key Performance Indicators "planning degree" (+40 %) and "urgency rate" (-63 %), thus achieving considerable gains in efficiency.

The figures prove that maintenance processes can be a central value driver for improving efficiency, minimising costs and for reducing capital requirements, thus increasing the Return on Capital. By systematically optimising these factors companies can use a decisive lever to position themselves even more successfully in the global competition.



The pages 5 to 23 are not included in this preview.
Should you be interested in the whole study "Value oriented maintenance - the strategic dimension of the spanner", please contact:

ConMoto Consulting Group GmbH
Boschetsrieder Str. 69
81379 Munich
Germany

Phone: +49 89 780 66-138
Fax: +49 89 780 66-101
Email: business@conmoto.de

► **Our consultancy approach**

We create advantage!
This is the guiding approach of our consultancy.

Implementation decides whether a project is successful. Therefore, speed, pragmatism and implementation strength distinguish ConMoto's work. The decisive basis is formed by an expert and target oriented analysis as well as a solid and realistic concept. To achieve this we combine innovative concepts with the knowledge of what is feasible.

► **Our company**

The ConMoto Consulting Group has been supporting companies for more than 20 years to secure and improve their competitiveness and sustainability. Around 80 consultants, distributed across our offices in Munich, Stuttgart, Vienna, St. Gallen, Bratislava and Shanghai, work competently and with commitment to realise the best possible benefits for our clients.

Our consultants' high qualifications, supplemented by many years of professional experience, guarantee the pronounced implementation skill that is necessary to realise the solution concepts we develop together with our clients. Efficient structures and processes, strong innovation skills, effective management systems and the sustainable mobilisation of staff are the project targets in the context of a pioneering strategy.

Management



Dr.-Ing. Ralf Feierabend



Prof. Dr.-Ing. Andreas R. Voegele



Dr. rer. pol. Leonhard Weck

ConMoto Consulting Group
GmbH, Munich
Boschetsrieder Str. 69
81379 Munich
Germany
Tel.: +49 (0)89 780 66-0
Fax: +49 (0)89 780 66-100/-101

ConMotoConsultingGroupGmbH,
Stuttgart
Gerokstr. 11
70184 Stuttgart
Germany
Tel.: +49 (0)711 767 79-0
Fax: +49 (0)711 767 79-205

ConMoto Consulting Group
Ges.m.b.H, Vienna
Schottenring 16
1010 Vienna
Austria
Tel.: +43 (0)1 585 0 274-0
Fax: +43 (0)1 585 0 274-11

ConMotoConsultingGroupGmbH,
St. Gallen
Notkerstr. 10
9000 St. Gallen
Switzerland
Tel.: +41 (0)71 244 08 71
Fax: +41 (0)71 243 18 81

ConMotoConsultingGroupGmbH,
Shanghai
Unit 1606, Time Square
93 Huai Hai Zhong Rd.
200021 Shanghai
People's Republic of China
Tel.: +86 (0)21 6141 5275
Fax: +86 (0)21 6141 5276

ConMoto Consulting Group,
Agamus Consult, Bratislava
Na vřšku 8
811 01 Bratislava
Slovakia
Tel.: +421 (0)2 5441 3304
Fax: +421 (0)2 5441 0635

Email: info@conmoto.de
Web: www.conmoto.de
www.conmoto-consulting.com