THE WAY FORWARD TO EXCELLENCE IN MAINTENANCE

It is common across all industries, that most organisations are attempting to get highest profitability. To successfully manage this, adequate management procedures have to be implemented also in the field of maintenance. Independent from the level of sophistication, any organisation is operating in, there is a need for a stepwise evolution of maintenance, in case the target is excellence in maintenance.

**Keywords:** excellence in maintenance, maintenance management, maintenance audit.

1. Introduction

It is not possible to give a ‘standard recipe’ for developing a maintenance organisation towards excellence, because too complex, but also too individual the starting positions are in different organisations. But it is possible to explain some common aspects across different types of industries.

The topic presents a model, which can be suitable most of all for such organisations, which are just in the beginning phase of developing their maintenance and which do not find the right sequence of improvements.

2. Target definition

Maintenance targets can be considered according to the Max/Min – principle. Maximizing the maintenance output, which is corresponding to technical equipment efficiency by minimizing all efficiency loss factors. The second portion of maintenance targets is minimizing the input to maintenance, which can be expressed for example in manpower, tools, systems, processes, cost, knowledge etc. The main thing is, that all input factor interact with each other. Relatively small changes in all input factors lead to great results in equipment efficiency.

3. Which concept is the most suitable to start from?

There are many maintenance management concepts and improvement strategies like TPM (total productive maintenance), RCM (reliability centered maintenance), RBI (risk based inspection), CBM (condition based monitoring), LCC (life cycle costing), CMMS (computerized maintenance management software), maintenance management training, spare part optimisation and much more – but which one is the most suitable to start with?

The reality shows, that some organisations tend to use more than one concept simultaneously and if this does not work, new projects get launched in the middle of the projects already defined– so changing horses in the middle of the race. In several cases this leads to dissatisfaction with the results of the projects started. The situation gets even more complex, if one organisation changes the targets of maintenance improvements from increasing equipment reliability to cost reduction and back and forth. It is obvious, that such intends will not be successful.

As an additional fact, it has to be considered, that not all existing concepts are applicable in the same way to all areas, where maintenance occurs. TPM in the automotive industry is state of the art, whereby this is hard to apply to universities. Online condition based monitoring will be necessary in petrochemical plants and other process industries, but does not make much sense in single manufacturing industries like clothes production. For this reason, the existing concepts need to be differentiated and carefully investigated, if and how they can contribute to meet the maintenance targets defined.

4. Maintenance Audit

The so called maintenance audit is a suitable instrument to describe the actual situation of maintenance within a plant and to define the improvement project. Such an audit in general gets conducted with an external, independent auditor. MCE has a high developed method for auditing maintenance departments – the so called ‘compact audit’. Such an audit does not take more than 2 days and delivers a good picture about the existing situation, whereby it automatically shows the improvement areas. The investigation covers 12 maintenance management chapters and includes quantitative and qualitative investigations. The results are summarized and presented to the customer and suggestions for improvement steps are given. Customer than can decide to go on with the suggestions alone or together with the partner.

5. Importance of Maintenance Foundation

The audit checks, what basic and enhanced maintenance features are given on site. If the basics – the so called maintenance foundation consisting of basic processes like strategy definition, work order management, spare parts management, qualification management and simple controlling- is not completely existing, it has to be finished, before other steps are defined.

The next step is to check for proper use of maintenance software, or implement it, if not existing. The foundation together with suitable use of maintenance software enables an organisation to look for best practices in maintenance management towards excellence. This is the core of the model suggested. If the basic processes are implemented and enough transparency is given through the use of software to monitor success of further changes, the field will be open for any other approach mentioned in the first section of this abstract.

6. Conclusion

Summarizing all aspects from above means, that maintenance organisations, which do not have the foundation of maintenance implemented, will have problems to reach excellence in maintenance management, because all the basics have to be done first – then the sophisticated concepts will work.
MCE Industrietechnik, a subsidiary company of MCE AG in Linz, Austria – considers itself as life-cycle partner for the erection and servicing of industrial plants and focuses its activities on the oil and gas sector, chemicals and petrochemicals, fine chemicals and pharmaceuticals, metallurgy, paper and pulp, power generation and distribution, and hydropower. MCE Industrietechnik erects turnkey plants and plant units for industry and infrastructures and is completely independent from manufacturers in its choice of components and thus very flexible in meeting its customers’ demands. The services offered – from design and commissioning – also include the full range of maintenance services.

Dr. Norbert SPÖRK
MCE Industrietechnik Holding GmbH & Co
Bruenner Straße 73, A-1210 Vienna, Austria
Tel: +43 664 1859 344 Fax +43 1 29103 253
E-mail: norbert.spoerk@mcelinz.com