

The Sustainable Total Productive Maintenance: An Evolved System Approach, from the Methodology to the Ideology of the Today's Company

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Abstract

Since the exacerbation of companies' competitiveness from the 2nd World War until today, there are many historical processes that have contributed to the evolution of the company, as well as its methodologies and culture in general. This work was carried out in the context of a comprehensive and presentative study of a system approach that was created just to improve the preventive maintenance methods in the 1970s. But this approach has evolved according to the finalities of the company changing and aiming to be adapted to its changing external environment in terms of industrial performance, indeed, according to the evolution of the company's competitiveness! This is the Total Productive Maintenance, in view that according to the literature, we have found that since the appearance of this approach in Japan in the 1970s until today, it has known a very evolutionary perspective that we have concretized in its different definitions by scientists, academics and researchers from the industrial world! We confirm the progressive penetration of the systemic thinking, in fact, the penetration of the system approach and its system analysis tool in the company's cultural structure, to regenerate it and leave the company always tending towards the management model of body with holistic behavior and organized according to the finality of optimizing the production systems maintenance, productivity, and safety while ensuring a production of irreproachable quality products. Since its creation until now, the TPM has known more than 25 definitions and several perspectives! These perspectives have changed according to the context of the TPM as an intellectual project that goes beyond the scale or the concept of methodology or strategy within the company, for acting on its ideology and anchoring the production system sustainability mindset at all levels of the company as a whole. According to Hallioui and Herrou (2020a, 2020b), "the challenge of economic performance is becoming more and more heavy on companies in a context of diversified constraints imposed by their environment. Furthermore, history proves the permanent and incessant change of the company's competitive environment, putting it in a stifling field of competitiveness, which forces the companies around the world to commit to the permanent optimization of their economic performance based on the continuous improvement of their production resources". This is to ensure their sustainability within a changing international context! But until today, the Overall Equipment Effectiveness is expressed in terms of availability rate, performance rate, and quality rate, there is no parameter emphasizing the sustainability! In addition to this, the TPM deployment does not consider the sustainability pillar of the system. Therefore, during the TPM implementation, manufacturers forget the major objective and natural need of the company which is its sustainability! That is why we thought of broadening the dimension of the TPM, by bringing the sustainability matter reducing the resistance to its implementation at the level of the company, which puts in front of today's companies around world, a Sustainable Total Productive Maintenance (STPM) that goes beyond the concept of methodology, to focus on the company ideology.

Keywords

System approach, Overall Equipment Effectiveness, sustainability pillar of the system, TPM implementation, Sustainable Total Productive Maintenance (STPM).

References

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Biographies

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