Contribution to the performance evaluation of maintenance function

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Abstract

The major TPM improvement activities includes maximizing equipment effectiveness, eliminate the big equipment-related losses, autonomous maintenance carried out by operators, training to improve operation and maintenance skills and the promotion of maintainability from the design throughout the entire life span of the equipment. Thereby, some companies are achieving remarkable success focusing on maintenance efficiency. The equipment downtimes are drastically reduced. The equipment productivity is strongly increased. Maintenance costs are reduced. The process yields and product quality are improved. This work comes under the general problem of managing the performance of the maintenance function. It provides a summary of studies and approaches to this issue. Moreover, it proposes an original approach based on a decision support tool to define an evaluation of the performance of this function system activities. Multicriteria method is used to provide decision making. The Criteria, that integrate technical, financial, strategic and environment issues, are defined to select the best strategy by made-home or by outsourcing of maintenance. This will be illustrated by an application on a Moroccan manufacturing company. The proposed tool allows studying maintenance activities' competitiveness and decision making.

Keywords
Maintenance, performance, Multicriteria method, decision making, outsourcing

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Biography

Lalla Samira Touhami is a PhD Student at Laval University in industrial and mechanical Department. She earned engineering Diploma in mechanic engineering, specialized in Control, quality and maintenance of systems, at ENSEM high school of mechanical and Electrical engineering, in 1996. She completed his M.sc in mechanic applied to construction at the same institution in Morocco in 2000. She also was professor at ESITH, high school of textile engineering from 2000 to 2010. She has over than 10 years of experience in reliability, maintenance and safety systems for engineer student education. She designed and taught courses on quality engineering, reliability and maintenance for undergraduates, graduates, and professionals' engineers in Morocco. She supervised master and engineer students in their industrial project. She developed and framed collaboration between Laval University and ESITH institution. Her research interests include Maintenance management and decision-making aid tools.

Daoud Ait-Kadi is currently a full professor at mechanical engineering department and director of graduate studies in industrial engineering at Laval University in Canada. He received his Bachelor's degree in mechanical engineering in 1973, a Master of Science in industrial engineering in 1980 and a Ph. D. in industrial engineering, operation's research and computer science in 1985. His research interests include production and operations

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