

International Journal of Production Research >
Volume 49, 2011 - Issue 6








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Economic production order quantity and quality

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Pages 1753-1783 | Received 01 Mar 2009, Accepted 10 Dec 2009, Published online: 15 Mar 2010

 Cite this article  <https://doi.org/10.1080/00207540903555528>
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Abstract

The purpose of this study is to integrate a conventional production-inventory management approach and a process-quality design approach so as to promote quality and reduce costs. Because the integration of these two approaches into a single system is conducted under the influence of a deterioration process, estimated costs of production must be modified. Only then can these various costs be presented as a total cost for the present integrated system. This total cost includes: a setup cost for

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simultaneously to minimise the average total cost for a cycle time. An example is presented to demonstrate the proposed approach.

Keywords:

initial setting

process tolerance

production order quantity

quality

cost

deterioration process

optimisation

Acknowledgments

This research was carried out in the Design, Quality, and Productivity Laboratory (DQPL) at the Department of Industrial Engineering and Systems Management at Feng Chia University, Taichung, Taiwan, Republic of China. I would like to thank my research assistant, Mr. Yen-Pin Pai, graduate student in the I.E. Department.

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