







Q

Home ► All Journals ► Engineering & Technology ► Production Planning & Control ► List of Issues ► Volume 27, Issue 7-8 ► Improving the logistics of a constant or

Production Planning & Control >
The Management of Operations
Volume 27, 2016 - <u>Issue 7-8</u>: Production Systems: Successful Applications and New Challenges Part 1

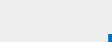
970 10
Views CrossRef citations to date Altmetric
Original Articles

Improving the logistics of a constant ordercycle *kanban* system

Cristovao Silva, Luis Miguel Ferreira, Matthias Thürer & Mark Stevenson

Pages 650-659 | Received 12 Jun 2015, Accepted 27 Oct 2015, Published online: 11 Apr 2016

66 Cite this article



Sample our
Economics, Finance,
Business & Industry Journals
>> Sign in here to start your access
to the latest two volumes for 14 days

Full Article

Figures & data

Check for updates

References

66 Citations

Metrics

Reprints & Permissions

Read this article

Share

Abstract

Kanban systems are simple, effective means of improving production that are widely applied in practice. Based on the logistic process involved, kanban systems can be divided into constant order-quantity and constant order-cycle systems. The former has received much research attention, but the latter, also known as a milk run, has been relatively neglected. Further, most prior work has been based on deterministic data, which is an assumption often violated in practice. We present the case of a manufacturer of domestic water heating equipment where a constant order-cycle kanban implementation initially failed. A structured Define-Measure-Analyse-Improve-Control approach is adopted to improve the process. It was revealed that the failure was due to high variability in the logistic processes involved. Decreasing this variability resulted in a reduction of tardy replenishment routes from 50 to 3%; a reduction in the route time coefficient of variation from 40 to 16%; and a reduction in the mean route

time from 31 to 25 min. These improvements allowed one of three existing routes to be eliminated without any negative impact on replenishment. This led to financial savings through the elimination of two operators. The logistic process appears to have a significant impact on kanban performance. Consequently, kanban implementations should not only focus on the kanban system itself but also on the other processes involved. Future research should therefore explore how resources can best be allocated between the different aspects required for a successful kanban implementation.



Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



Registered in England & Wales No. 01072954 5 Howick Place | London | SW1P 1WG