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International Journal of Production Research ›

Volume 51, 2013 - Issue 5

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Pages 1347-1365 | Received 15 Mar 2011, Accepted 29 Jan 2012, Published online: 10 Apr 2012

Cite this article https://doi.org/10.1080/00207543.2012.662725

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Abstract

In this paper we model a consignment (CS) and vendor-managed inventory (VMI) policy for a single vendor and multiple buyers supply chain with known demand. We study three vendor–buyers partnerships: (i) the vendor and the buyers act independently, (ii) the vendor enters in a vendor-managed inventory consignment (VMI&CS) partnership with the buyers and (iii) the vendor and the buyer belong to a vertically integrated firm where a single decision maker decides about the ordering policies. We use relationships (i) and (ii) to study the benefits of the VMI&CS agreement. We provide analytical and numerical results. We find that such an agreement is more beneficial when the vendor

has a flexible capacity. It is also more attractive to buyers when they have significant order costs and the vendor's setup cost is not large. Finally we find that under VMI&CS the vendor will tend to make more frequent shipments with smaller lots.

Keywords:

inventory management | consignment | vendor managed inventory | supply chain

Acknowledgements

The authors would like to acknowledge the valuable feedback from the anonymous reviewers. The second author would also like to acknowledge the support the Natural Sciences and Engineering Research Council of Canada (NSERC Discovery Grant) and the Department of Systems Engineering Department at King Fahd University of Petroleum & Minerals for hosting him during his research leave.

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