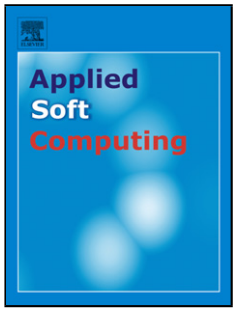
Accepted Manuscript



Title: The construction and analysis of the 3C manufacturer-led distributor optimization consignment model using global search particle swarm optimization

Author: Shen-Tsu Wang

PII: S1568-4946(17)30435-0
DOI: http://dx.doi.org/doi:10.1016/j.asoc.2017.07.024
Reference: ASOC 4352

To appear in: *Applied Soft Computing*

Received date: 13-9-2015
Revised date: 4-6-2017
Accepted date: 13-7-2017

Please cite this article as: Shen-Tsu Wang, The construction and analysis of the 3C manufacturer-led distributor optimization consignment model using global search particle swarm optimization, Applied Soft Computing Journalhttp://dx.doi.org/10.1016/j.asoc.2017.07.024

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

The Construction and Analysis of the 3C Manufacturer-led Distributor Optimization Consignment Model Using Global Search Particle Swarm Optimization

Shen-Tsu Wang

Department of Commerce Automation and Management, National Pingtung University, Taiwan, R.O.C.
51 Min Sheng E. Road, Pingtung, 900, Taiwan, R.O.C.
Tel: 886-8-7663800
Fax: 886-8-7210801
E-mail: d917812@oz.nthu.edu.tw

Highlights

- A higher unit sales value does not lead to a higher profit to the distributor.
- The accuracy rate in estimation of the order quantity by the distributor is 95.7%.
- The implementation of consignment model has adverse impact on the distributor.
- The consignment model can help increasing the profits of the manufacturer.

Abstract

In **Computer, Communications and Consumer-Electronics (3C)** industries, manufacturers must provide the exact predicted demand or number of contracts with brand manufacturers so that distributors can prepare the correct inventory. Moreover, manufacturers are obligated to provide weekly or monthly production capacity and components consumption to distributors in order to facilitate distributor deliveries for timely stocking to maintain the right amount of inventory within Hub warehouses. Thus, the establishment of a consignment cooperation model is very important. This study considered the estimated proportion of profits assigned to distributors under the leadership of the manufacturers and established and analyzed the mathematical model of the final product unit sales prices, as well as the final product unit production cost using global search **particle swarm optimization (PSO)**. According to the analysis results, the proportion of profits assigned to distributors is not necessarily higher when the product unit sales volume is higher; for distributors, more components in stock naturally raise the cost. The consignment cooperation model helps increase the profits of the manufacturer. It is expected that the establishment and analysis of the model proposed herein can provide manufacturers in the 3C industries with decision-making suggestions.

Keywords: Computer, Communications and Consumer-Electronics industries, manufacturer, distributor, consignment cooperation model, global search particle swarm optimization

1. Introduction

Suppliers are generally divided into two types, the first type is parts production suppliers, and the other type is distributors (dealers), which only engage in dealership and do not engage in production. More than half of Taiwan's electronic component trading is done through distributors for three main reasons.

Download English Version:

https://daneshyari.com/en/article/4963006

Download Persian Version:

https://daneshyari.com/article/4963006

Daneshyari.com