



Management Science

Publication details, including instructions for authors and subscription information:
<http://pubsonline.informs.org>

Communications to the Editor—A Correction for “Optimal Policy for a Multiproduct Dynamic, Nonstationary Inventory Problem”

To cite this article:

(1970) Communications to the Editor—A Correction for “Optimal Policy for a Multiproduct Dynamic, Nonstationary Inventory Problem”. *Management Science* 16(7):518–518. <https://doi.org/10.1287/mnsc.16.7.518>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact permissions@informs.org.

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

© 1970 INFORMS

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes. For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

COMMUNICATIONS TO THE EDITOR

A Correction for "Optimal Policy for a Multiproduct Dynamic, Nonstationary Inventory Problem"*

I am indebted to Lowell Bruce Anderson of Northwestern University for pointing out to me that Theorems 6.1 and 6.2 in my paper "Optimal Policy for a Multiproduct Dynamic, Nonstationary Inventory Problem," (*Management Science*, Vol. 12, No. 3 (November 1965), pp. 206-222) are false as stated. The difficulty is that the hypothesis (6.1) is too weak. In each case the theorems are true if as he has suggested to me, (6.1) is replaced by the stronger hypothesis (6.3). This last assumption does not permit the decision maker to exert any control over the demand process. This is not quite as restrictive as it seems. For as we show below, it is sometimes possible to restate a problem in which the decision maker can exert some control over the demand process as an equivalent problem where this is not the case.

For example, suppose $D_i = d_i(D'_i, y_i)$ for some Borel function d_i from $\mathcal{D}'_i \times Y_i$ into $\mathcal{D}_i$ where $\mathcal{D}'_i$ is a Borel set of values of D'_i for all i and where $D'_1, D'_2, \dots$ are independent random vectors with distributions $\Phi'_1, \Phi'_2, \dots$, say. Notice that D_i is affected by the choice of y_i but that D'_i and y_i are independent (since y_i is a function only of $D'_1, \dots, D'_{i-1}$). This suggests letting $D'_1, D'_2, \dots$ be the revised demand process and redefining the problem in terms of this process with

$$g'_i(y_i, D'_i) = g_i(y_i, D_i), \quad s'_i(y_i, D'_i) = s_i(y_i, D_i), \\ W'_i(y, t) = c_i y + g'_i(y, t) - \alpha_i c_{i+1} s'_i(y, t),$$

and

$$G'_i(y) = \int_{\mathcal{D}'_i} W'_i(y, t) d\Phi'_i(t).$$

The resulting primed problem satisfies (6.3). Thus the herein revised versions of Theorems 6.1 and 6.2 can be applied.

ARTHUR F. VEINOTT, JR.
Stanford University

A Note on the Russell paper [2]†

Under this general heading one can distinguish certain "shapes" of problems in management planning. There exist two broad classes of "shape": formal and informal, or you may call them analytical and intuitive, or modern and traditional, or even computer-based and brain-based. There is also a computer-cum-brain group, and I would challenge anyone to produce a "pure" computer-based method which does not at some stage require a human interpretation or contribution even after its program has been written. Let me also concede, though, that the ingenuity and versatility of modern procedures in management science are such that the brain's

* Received May 1968.

† Received October 1968.