



NORTH-HOLLAND

Calculating the Cost of Variances in the Supply Chain

Determining Supplier and Buyer Effect on Inventory Performance

Mary Margaret Weber

The purpose of this work is to provide a framework that can be used to diagnose the causes of inventory-related variances in the buyer–seller relationship, and to analyze the costs to the channel associated with these variances. A multi-echelon approach is used to highlight variances caused by both supplier and buyer in increasing detail. The framework’s usefulness lies in its ability to separate variances caused by inadequate planning from those caused by poor performance. © 2000 Elsevier Science Inc. All rights reserved.

INTRODUCTION

The logistics practices of the past 15 years have made it clearly evident that in highly competitive domestic and international markets, the development of strong channel relationships is essential for the development and maintenance of competitive advantage. This trend toward strong channel relationships is thoroughly discussed in the logistics literature, for example [1–5]. Much of this push for stronger and long-term channel relationships focuses on the provision of superior customer service through better inventory management policies. Thus, new methods of evaluating channel performance that explicitly detail the impact of each channel member’s performance on the entire channel are needed [6, 7]. In particular, it has

Address correspondence to Mary Margaret Weber, Emporia State University, School of Business, 1200 Commercial Street, Box 58, Emporia, KS 66801. Tel: 316-341-5315. E-mail: webermar@esumail.emporia.edu

Poor inventory planning affects other firms in a distribution channel.

become increasingly important to eliminate variance from the channel relationship. In other words, increased competitive demands necessitate performance at high levels with decreasing acceptance of error.

The purpose of this work is to provide a framework that can be used to diagnose the causes of inventory-related variances in the buyer-seller relationship, and to analyze the costs to the channel associated with these variances. A multi-echelon approach is used to highlight variances caused by both supplier and buyer in increasing detail. The framework's usefulness lies in its ability to separate variances caused by inadequate planning from those caused by poor performance.

Multi-echelon approaches were developed independently by Shank and Churchill [8] and Hulbert and Toy [9]. The Shank and Churchill model, later extended by Shank and Govindarajan [10], suggests that an analysis of variance in sales and marketing activities can benefit by adding increasing levels of complexity to enhance insight into the causes of variances. Each subsequent level of the analysis reduces the likelihood that large offsetting variances might be misinterpreted as a small, possibly insignificant, variance. A weakness of this work is that comparisons are made only between planned and actual performance, without an attempt to incorporate changes in the plan during the period being analyzed. Thus, this work allows no distinctions to be made between variances caused by inadequate performance and those caused by poor planning.

Hulbert and Toy's work, later extended by Bentz and Lusch [11] and Lusch and Bentz [12], incorporates the idea of a revised plan into a multi-echelon approach. The use of a revised plan to evaluate forecasting accuracy is based on the broadly accepted concept of flexible budgeting, and it provides a means of recognizing the opportunity costs that arise from errors in forecasting [13–15]. Planning errors become apparent through comparison between the original and revised plans. While comparisons between actual and planned results can still be made to evaluate management performance, use of a revised plan eliminates the ability to hide any slack that was intentionally or unintentionally built into the original plan. The result is that a planning variance can be used to distinguish between the actual and forecasted operating environments. A performance variance distinguishes between actual performance and the performance expected, given the actual, as opposed to forecasted, environment.

Weber [16] applied the multi-echelon approach to the evaluation of inventory-related variances in the supplier-buyer relationship. The model that was developed used actual, planned, and requested quantities of inventory to isolate causes of inventory surpluses or shortages. The model successfully distinguished between variances caused by inadequate supplier performance and those caused by errors in buyer planning. However, a major weakness of this framework is its use of placeholder values representing a combination of stockout quantity and time; it does not clearly elucidate costs associated with inventory-related variances.

The framework proposed in this paper incorporates actual inventory valuations. Its use of both planning and performance variances helps to determine channel member responsibility for system variance. It also demonstrates how another channel member may compensate for planning or performance errors by one channel member and the cost of that compensation. The increasing levels of detail provide management cues for action in reducing overall system variance.

MARY MARGARET WEBER is Assistant Professor of Marketing at Emporia State University. She received her Ph.D. in Logistics from The Ohio State University and her MBA from Virginia Polytechnic Institute and State University. Her current research interests include the impact that information technology is having on the competitive structure of retailing and on the logistics practices throughout the marketing channel.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات