On the evaluation of commonality strategy in product line design: The effect of valuation change and distribution channel structure

Hartanto Wong, Dharma Lesmono, Dilip Chhajed, Kilsun Kim

PII: S0305-0483(18)30081-1
DOI: 10.1016/j.omega.2018.01.009
Reference: OME 1871

To appear in: Omega

Received date: 4 January 2016
Revised date: 17 December 2017
Accepted date: 23 January 2018

Please cite this article as: Hartanto Wong, Dharma Lesmono, Dilip Chhajed, Kilsun Kim, On the evaluation of commonality strategy in product line design: The effect of valuation change and distribution channel structure, Omega (2018), doi: 10.1016/j.omega.2018.01.009

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.
On the evaluation of commonality strategy in product line design:
The effect of valuation change and distribution channel structure

Hartanto Wong\textsuperscript{a}, Dharma Lesmono\textsuperscript{b}, Dilip Chhajed\textsuperscript{c} and Kilsun Kim\textsuperscript{d}

\textsuperscript{a}Department of Economics and Business economics, Aarhus University, 8210 Aarhus, Denmark
\textsuperscript{b}Department of Mathematics, Parahyangan Catholic University, Bandung 40141, Indonesia
\textsuperscript{c}Department of Business Administration, University of Illinois at Urbana–Champaign, Champaign, Illinois 61822, USA
\textsuperscript{d}College of Business, Sogang University, Seoul 121-742, South Korea

Abstract

This paper investigates a manufacturer’s optimal decisions in relation to the adoption of the commonality strategy in a decentralized channel as opposed to a centralized channel. Our model, through valuation premium and discount, captures the possible changes in the perceived quality made by customers as a result of the use of common design in the high-quality and low-quality products. We show that commonality always help reduce the extent of quality distortion encountered by the low-valuation segment, regardless of the channel structure. We also show that the adoption of commonality strategy in a decentralized channel is able to reduce channel efficiency loss, which may lead to improvements in the channel profits even when there is no cost saving associated with the use of common components. The valuation premium and discount are influential on several important measure including optimal quality levels, channel profits, and consumer surplus. Furthermore, we point out an important issue on the coordination between the manufacturer and the retailer that must be addressed if the commonality strategy is to be implemented in a decentralized channel.

Key words: component commonality; product line; marketing-manufacturing interface; channel coordination;

1. Introduction

It is commonly recognized that product line proliferation presents a major operational challenge for many firms today despite its importance for attracting different consumer segments. A proliferation of products negatively affects operational performance due to higher forecast errors, higher manufacturing costs, and higher overhead and administrative costs (Lee and Billington, 1994). The use of component commonality or standardization has been widely regarded as a cost-effective way for firms to mitigate the negative effects of product line proliferation. The major benefits of using
دریافت فوری متن کامل مقاله

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