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**J. Andrew Petersen and V. Kumar**

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## Can Product Returns Make You Money?

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Marketers and sellers hate product returns, but smart companies aren't passively accepting them as bitter pills to be swallowed. They're managing product-return policies to maximize future profits.

BY J. ANDREW PETERSEN AND V. KUMAR

MANY COMPANIES SEE customers' product returns as a major inconvenience and an eroder of profits. After all, product returns cost manufacturers and retailers more than \$100 billion per year, or an average loss per company of about 3.8% in profit.<sup>1</sup> The electronics industry alone spends some \$14 billion annually on product returns through reboxing, restocking and reselling. And because only about 5% of products are returned as a result of defects, it appears that product returns will remain an inevitable part of the customer-company relationship even as manufacturing continues to improve product quality.

For some companies, the solution has been to create product-return disincentives, such as limited time frames for returns (say, within 30 days after purchase), product customization that allows returns only when the product is defective, and nonrefundable purchase costs (shipping costs or restocking fees, for example). But are these practices, which reduce the costs and frequencies of product returns, ideal for the bottom line? Despite the company's handling costs and its revenues lost from refunds, the customer's ability to return products may have a positive effect on his or her future purchases and actually increase long-term profits.

Several recent studies have in fact begun illuminating the potential benefits of allowing customers to return products with impunity. This research finds that when a company has a lenient product-return policy, which allows customers to return almost any product at any time, they are more willing to make other purchases.<sup>2</sup> The knowledge that they can return a product reduces the risk customers might perceive in purchasing it in the first place. The studies also find that a

**After a certain threshold, a customer's rate of product returns actually correlates to an increase in the amount of his or her future purchases.**



## THE LEADING QUESTION

How can marketers manage product-return policies to maximize future profits?

## FINDINGS

- ▶ Marketers can target and manage customers by taking information about both their purchase and return behaviors into account.
- ▶ Lenient product-return policies yield more profits than strict product-return policies.
- ▶ Managing product returns in an optimal way increases profits even during tougher economic times.



**ABOUT THE RESEARCH**

We conducted a study using six years of purchase, product-return and marketing communications data from a large national catalog retailer that sells apparel and accessories. The retailer is known to have a lenient return policy that allows customers to return products at any time after the purchase, whether the products are defective or not. We determined the factors that led to increasing or decreasing product returns from customers, identified how each customer's product-return behavior affected his or her future purchase behavior and long-term value to the company, and then analyzed the trade-offs between the costs of product returns and the potential long-term benefits resulting from satisfactory product-return experiences. In addition, we used a sample of customers from a second catalog retail company to run a six-month field experiment in which we optimally allocated resources to customers based on our new knowledge of the drivers and consequences of customer product-return behavior.

satisfactory product return can provide another touch point for building a successful buyer-seller relationship.<sup>3</sup> Reducing customer risk and increasing customer satisfaction, across purchases and product returns alike, can increase the number of future purchases and thus raise the company's revenue from sales.

In no way do these findings suggest that companies *encourage* customers to return products. But they do show that product returns do not necessarily drag down a company's profits over time.

Our own research, on which this article is based, extends these studies by exploring the trade-offs between the costs of product returns — particularly when customers deem such experiences satisfactory — and their long-term benefits to the company.<sup>4</sup> Such knowledge can be useful not only in understanding the effect of product returns on future purchases and profits but also in “managing” — not necessarily discouraging — customer product-return behavior so as to maximize profits. (See About the Research.)

**What We Learned From Company 1**

Our research addressed the following three questions:

1. What purchase and customer characteristics lead to more (or fewer) product returns?
2. How can marketing managers strategically manage customers, using information about their purchase and product-return behavior, to maximize company profits?
3. What is the trade-off between the cost of product returns and the potential benefits that accrue through positive, long-term customer-purchase behavior?

We obtained answers by analyzing six years of purchase, product-return and marketing-communications data from “Company 1” — a large national catalog retailer that sells apparel and accessories and is known to have a lenient return policy. We used two different cohorts of customers, the first including those who made their first purchase in 1998 and the second including those who made their first purchase in 1999. Customers in both cohorts were similar in how many catalogs they received, how many purchases they made and how many products they returned per year.

Results of this analysis provided key insights into the role that product returns play in the customer-company relationship. As expected, the

more a customer purchased, the more products he or she returned. But we also empirically tested the effect of several purchase characteristics on product-return behavior and found that each would help to shift a customer's rate of product returns either higher or lower. (See “Purchase Characteristics and Their Effect on Product Returns.”)

We also analyzed the consequences of a customer's product-return behavior both on the company's decision subsequently to send catalogs to that customer and his or her actual purchase behavior thereafter. We found that as a customer's rate of product returns increased (to a threshold):

- The number of catalogs a customer received decreased.
- The customer's amount of future purchases increased.

This result elucidates the potential long-term benefits of product-return behavior. It implies that ignoring such behavior, or even trying to discourage it directly by not marketing to customers who return products, is a mistake. In fact, a moderate degree of product returns by a customer could not only lead to greater future purchases but also maximize profits. We explore the latter possibility by analyzing the trade-offs between the short-term costs and long-term benefits of product returns. In the process, we can also determine exactly what level of product return maximizes profits for Company 1.

We used the data from both cohorts of customers to simulate the impact that changes in customer product-return behavior would have on company profits. We first computed the discounted company profit from this sample of customers, as follows:

**Company Profit =**

$$\frac{\text{Purchase Value} \times \text{Margin} - \text{Product Return Costs} - \text{Marketing Costs}}{\text{Discount Factor Based on Purchase Timing}}$$

We then allowed the overall percentage of the products returned by all customers both to increase and decrease from the original percentage of product returns, which was around 16%. Because the results from both cohorts were similar, we include here only the findings from Cohort 1. Based on the actual level of

product returns, the 1,572 customers in Cohort 1 yielded a discounted profit of around \$92,000 over six years. But by varying under simulation the amount of product returns per customer, we found the optimal percentage of product returns that would maximize company profits to be 13%, or a decrease in product returns of 3% from the actual level. (See “Optimal Amount of Product Returns to Maximize Profits,” p. 89.)

Note that the optimal rate of product returns is not even close to 0%, which would be off the scale at the left (corresponding to -16%). In fact, decreases in product returns beyond 13% — that is, from -3% toward -15% and beyond — decrease profits as well. At 1% product returns, or 15% below the current rate, profit is around \$64,000. However, it is important to note that increases in product returns beyond a certain point significantly decrease profits. At 31%, or 15% above the current amount of product returns, the company experiences negative profits of around \$21,000 from the Cohort 1 customers.

## General Guidelines for Marketing-Resource Allocation

These findings show that managers should embrace customers’ product-return behavior and offer them a satisfactory experience. Moreover, managers should use the drivers shown in the table “Purchase Characteristics and Their Effect on Product Returns” as levers to help increase or decrease a customer’s product-return behavior toward the ideal threshold — 13% in the case of Company 1. We offer three general insights to managers with regard to managing customers and allocating marketing resources.

**1 Consequences of Product Returns.** This company sent fewer catalogs to customers who returned more products — a typical response of companies that shy away from continuing to invest in relationships with such customers. However, customers who return more products (up to a threshold) tend to purchase the most products in the future. Thus, companies that send fewer catalogs to customers who return products are not optimally allocating resources. Instead, catalog mailings should be based on both the customer’s purchase and product-return behavior so as to maximize the future streams of revenue from that customer. How can a manager determine

## PURCHASE CHARACTERISTICS AND THEIR EFFECT ON PRODUCT RETURNS

Each purchase characteristic, or “driver,” tends to shift a customer’s rate of product returns in one unique direction. Managers can exploit these properties to enhance a company’s long-term profits.

PURCHASE CHARACTERISTIC	DECREASE IN PRODUCT RETURNS	INCREASE IN PRODUCT RETURNS
Gifts for Family and Friends	X	
Holiday Season Shopping (Nov./Dec.)		X
New Product Category (Same Distribution Channel)		X
New Distribution Channel (Same Product Category)	X	
New Product Categories and New Distribution Channels		X
Items on Sale	X	

a resource-allocation strategy? By leveraging the drivers of customer product-return behavior.

**2 Drivers of Product Returns.** If a customer has been returning products too frequently — over 13% at Company 1 — managers can utilize drivers of decreasing product returns to decrease the customer’s likelihood of returning products. For instance, a manager could send this customer discounts on purchasing familiar products in more convenient distribution channels. Suppose a customer is purchasing women’s clothing from the company’s brick-and-mortar retail store. The company could send this customer a coupon to shop online that would provide a discount in the women’s-clothing product category. That could open up a new distribution channel, which has empirically been shown to increase a customer’s buying behavior, and at the same time help to manage that customer’s product-return behavior.

On the other side of the coin, if a customer is returning only a small percentage of products — say, 5% — his or her potential profits to the company are not optimal. In response, a manager may offer an incentive to purchase products from categories that the customer has yet to shop. For example, if the customer has been purchasing products only in the men’s clothing department, the manager may send the customer a coupon to purchase in the outdoor or luggage department. Note, however, that market research is an important prerequisite: To

find the appropriate new category to introduce to the customer, it is best to know which sets of categories tend to be purchased by similar customers.

**3 Quantifying the Costs and Benefits of Product Returns.** Until a manager can determine the percentage of product returns that will maximize profits, that manager cannot formulate appropriate marketing-resource allocation strategies on a customer-by-customer basis. While the average number of products returned by customers across Company 1 is about 16%, not all of them return at that rate. In fact, the percentage varies quite significantly across customers, from close to 30% of customers never returning any products at all to about 10% of customers returning over 40% of products they purchase. This diversity gives managers a great opportunity to reallocate the current marketing resources allocated to each customer and devote more to those customers with the greatest potential to increase profits.

### A Field Experiment With Company 2

The final question we need to answer is whether companies are better off in the long run with a strict product-return policy or a lenient product-return policy. We ran a field experiment with a second catalog retailer, Company 2, which sells footwear, apparel and other accessories through the Internet and mail-order catalogs. The goal of this experiment was to answer the following questions:

1. Can we quantify how changing the leniency of the product-return policy affects customer behavior and company profits?
2. Does changing the method of valuing customers and allocating resources to customers, using our findings from Company 1, affect customer behavior and company profits?

Using data from two samples of customers at two different periods — in the year before the product-return policy change and in the year after — we analyzed the purchase, product-return and referral behavior of those customers. In the first time period, the company’s product-return policy was strict, allowing returns only for defective products or incorrect product shipments. In the second time period, the policy was lenient, allowing customers to return any product at any time for any reason. For each of the two periods, customers were allocated marketing resources (sent catalogs) based on two different strategies: the “company strategy” and an “optimal resource-allocation strategy.” The company strategy was based on the RFM score, commonly used by direct marketing companies, which rewards customer-purchase behavior that is recent, frequent and of high monetary value. In addition, the company reduced resource allocations to customers who returned products. The optimal resource-allocation strategy was based on predicting each customer’s lifetime value and accounting for the relationship between customer purchases,

company-initiated marketing communications and customer product-return behavior uncovered by the earlier study of Company 1.

During both time periods, catalogs were mailed every three weeks, based on the respective resource-allocation algorithms (company strategy or optimal strategy), and purchases and returns were observed. Managers of Company 2 had stated that approximately 87% of purchases after a catalog is mailed occur within eight weeks and 95% occur within 12 weeks. That suggested that if we waited three

## RESULTS OF THE FIELD EXPERIMENT WITH COMPANY 2

The best results come from a lenient product-return policy under an optimal allocation strategy; the worst combination is a strict policy and a “company” (non-optimal) strategy.

	COMPANY STRATEGY	OPTIMAL ALLOCATION STRATEGY
<b>Lenient Product-Return Policy</b>	<b>Avg. Purchase (\$):</b> \$1,234.20	<b>Avg. Purchase (\$):</b> \$1,376.13
	<b>Avg. Product Return (\$):</b> \$67.90	<b>Avg. Product Return (\$):</b> \$41.50
	<b>Avg. Profit (\$):</b> \$302.36	<b>Avg. Profit (\$):</b> \$371.34
	<b>Avg. # of Referrals:</b> 1.6	<b>Avg. # of Referrals:</b> 2.4
<b>Strict Product-Return Policy</b>	<b>Avg. Purchase (\$):</b> \$893.60	<b>Avg. Purchase (\$):</b> \$907.20
	<b>Avg. Product Return (\$):</b> \$20.50	<b>Avg. Product Return (\$):</b> \$17.60
	<b>Avg. Profit (\$):</b> \$247.58	<b>Avg. Profit (\$):</b> \$254.56
	<b>Avg. # of Referrals:</b> 0.8	<b>Avg. # of Referrals:</b> 1.2

Note: Numbers represent averages of purchases, product returns, profit and referrals per customer per year based on data six months before and six months after the product-return policy change.



months after the last potential catalog was mailed to each customer, we would see about 95% of the resulting purchase and product-return behavior.

The results of the field experiment reveal two key findings. (See “Results of the Field Experiment With Company 2.”) First, there is a significant difference between the behavior of customers when the product-return policy is strict and when it is lenient. Under both strategies (company and optimal) there are increases in average yearly purchases, in average yearly customer profit and in the average number of referrals each customer makes per year. There is also an increase in the average dollar value of products returned each year, which is expected, given that the return policy is lenient. However, this increase in product returns is more than offset by customer purchase and referral behavior, which leads to greater profits and a faster-growing customer base.

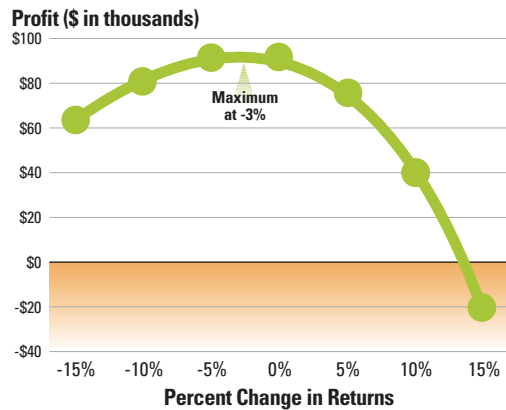
Second, we see the results of a catalog-mailing strategy that takes into account the expected future profits from each customer and the relationship between purchases and product-return behavior — i.e., an optimal allocation strategy. There is an increase in average yearly purchases, a decrease in the average yearly dollar amount of product returns, an increase in average yearly profit and an increase in the average number of referrals per year. By extrapolating to the entire base of approximately 200,000 customers, we estimate that the introduction of the lenient return policy gives an incremental gain in profit of more than \$10 million and that the optimal resource-allocation strategy gives an additional increase in profit of \$12.5 million for a total of \$22.5 million.

## Summary

It is crucial not to ignore product returns or treat them as just a bitter pill the company is forced to swallow in the company-customer relationship. Instead, a *satisfactory* product-return experience can lead to increases in customers’ future purchases and referrals and in the profit they yield for the company. It is possible for companies to ascertain the role that product returns play in a customer’s decision to purchase and to quantify that customer’s long-term value to the company. By understanding the drivers and consequences of product returns, managers can determine the relationship between

## OPTIMAL AMOUNT OF PRODUCT RETURNS TO MAXIMIZE PROFITS

The best rate of customers’ product returns is not zero returns. Company 1, for example, would achieve maximum profits at a return rate of 13%, or 3% less than its current rate.



the costs and benefits of product returns to their company, which allows them to allocate resources more effectively so as to maximize company profits.

**J. Andrew Petersen** is an assistant professor of marketing at the Kenan-Flagler Business School, University of North Carolina at Chapel Hill. **V. Kumar** is the Richard and Susan Lenny Distinguished Chair in Marketing, executive director of the Center for Excellence in Brand and Customer Management and director of the Ph.D. program in marketing at the J. Mack Robinson School of Business, Georgia State University, Atlanta. Comment on this article or contact the authors at [smrfeedback@mit.edu](mailto:smrfeedback@mit.edu).

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