# Sales Promotion 

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## Introduction

Sales promotions are a marketing tool for manufacturers as well as for retailers. Manufacturers use them to increase sales to retailers (trade promotions) and consumers (consumer promotions). Our focus will be on retailer promotions, which are used by retailers to increase sales to consumers. Typical examples of retailer promotions are temporary price reductions (TPRs), features, and displays.

Sales promotions have an important role in the marketing programs of retailers. A large percentage of retailer sales is made on promotion, as illustrated by the numbers in Figure 1. Also, retailer promotions address consumers at the point of sale. Thus, while advertising in classic media is becoming less effective, communication through promotions reaches the consumer at the place and time where most purchase decisions are made. The Point of Purchase Advertising Institute (POPAI) finds in a study from 1999 that the in-store decision rate of consumers in Germany, for example, is $55 \%$, meaning that more than half of all purchase decisions are made in stores, as opposed to before the shopping trip.

At the same time, the management of retailer promotions is not trivial, for several reasons. First, retailers can use many different forms of price promotions, such as temporary price reductions, coupons, and multi-item promotions, and combine them with nonprice promotions like features, displays, and other POS material. Second, retailer promotions can have many different effects. For example, increases in sales can result from brand switching, store switching, category switching, stockpiling, or increased consumption. In order to evaluate the profitability of a promotion, it is important to disentangle these effects. Third, manufacturers and retailers pursue different goals, and retailers have to take into account the manufacturer's trade promotion policy and its impact on their own margins


Percentage of Sales (in $\epsilon$ ) made on Promotion, January - June 2004
Fig. 1. Percentage of Sales Made on Promotion in Europe (A.C.Nielsen)
when planning their retailer promotions. Such initiatives as efficient consumer response (ECR) and collaborative planning, forecasting, and replenishment (CPFR) have tried to promote more cooperation between manufacturers and retailers, one area of cooperation being sales promotions (see, e.g., chapter by Huchzermeier, Iyer in this book).

Over the last 25 years a large research effort has been spent on studying the effects of promotions. Methods for measuring the success of promotions have been developed and refined. And many substantive results have been accumulated, allowing us to make some empirical generalizations.

At the beginning of the 21st century, promotions are facing new opportunities and challenges as technology plays an increasing part in retailing. Technologies such as loyalty cards, electronic media at the point of sale, and electronic shopping assistants are likely to have an impact on how retailers use promotions, e.g. to allow better targeting of consumers.

The purpose of this chapter is twofold. First, we want to review what we know about promotions as retailers have used them in the past. Second, we want to discuss the opportunities and challenges for promotions presented by new technologies in retailing.

The chapter is divided up as follows. In the second section, we categorize and describe promotion instruments that retailers may use. In the third, we give an overview of the effects of retailer promotions on sales and present empirical results as to the strength of these effects. We describe new technologies used in retailing and discuss the resulting opportunities and challenges for promotions in the fourth section.


Fig. 2. Instruments for Retailer Promotions

## Promotion Instruments

Figure 2 shows different promotion instruments that retailers may use (Gedenk 2002, Neslin 2002).

A first distinction can be made between price and nonprice promotions. The price promotion instrument used most often is a temporary price reduction (TPR). However, other forms of price promotion are possible. Retailers can use promotion packs, i.e., packages with extra content (e.g., " $25 \%$ extra"), or multi-item promotions (e.g., "buy three for x" or "buy two get one free"). Loyalty discounts also require the purchase of several units, but the consumer can do this over several purchase occasions. Retailers can also use coupons or rebates. With coupons, consumers have to bring the coupon to the store in order to get a discount. With rebates, consumers pay the full price, but they can then send in their receipt to get a discount.
"Supportive" nonprice promotions are communication instruments used to alert the consumer to the product or to other promotion instruments. Very often they are used to draw attention to price promotions. For example, products on TPR are featured or displayed. Thus, the focus is not so much on the brand as on price. Note that they can also be used without a price promotion. For example, a feature can advertise an everyday low price policy or a new product. Interestingly, there is evidence that consumers may interpret supportive nonprice promotions as a signal for a price cut even if they are not coupled with actual price discounts, since the two are closely linked in many consumers' minds.

Finally, retailers can use "true" nonprice promotions, where the focus of the promotion is clearly on a brand or store, and not on a price cut. However, instruments such as sampling and premiums are mostly used by manufacturers, and not by retailers. Therefore, our focus in the following will be on price and supportive nonprice promotions.

## Effects of Promotions

## Overview of Effects

To assess the profitability of retailer promotions, retailers have to take into account their costs, the trade promotion allowances given to them, and the effect of promotions on sales to consumers (for more discussion on this point, see chapter by Bolton, Shankar and Montoya in this book). The biggest challenge for controllers lies in assessing the sales effects. Thus, we will discuss these in this section. Figure 3 shows the effects of a retailer promotion on the sales of the promoted product (Gedenk 2002, Neslin 2002).

In Figure 3, we distinguish between short-term effects, which occur during the promotion, and long-term effects, which involve behavior that takes place after the promotion. Sales for the promoted brand can increase during the promotion by attracting customers from other stores (store switching), inducing customers to switch brands (brand switching), inducing customers to buy from the promoted category rather than another category (category switching), inducing customers who normally do not use the product category to purchase it (new users), or inducing customers to move their purchases forward in time (purchase acceleration). Purchase acceleration can occur because consumers purchase earlier or because they purchase more than they would have done without the promotion. Consumers can either stockpile the extra quantity for future use or consume it at a faster rate. Total category consumption can also increase owing to category switching or if the promotion attracts new users.

While the short-term sales bump will be highest if all these mechanisms are at work, the particular breakdown of the bump into these mechanisms is important for the profitability of the promotion. Therefore, a controller must not stop at


Fig. 3. Effects of Retailer Promotions
measuring the size of the short-term sales bump. Rather, it is important to analyze this bump. An increase in category consumption resulting from new users, category switching, or a higher consumption rate is beneficial for both retailers and manufacturers. If the bump is caused by consumer store switching, this is beneficial only to the retailer. Note there are two types of store switching-direct and indirect. A direct store switch is seen when the consumer visits store A rather than store B. An indirect store switch is when the consumer shops at both stores, but the promotion in store A pre-empts a purchase that would otherwise have occurred at store B. Either form of store switching is beneficial to the retailer.

In contrast, the part of the promotion bump that results from brand switching within the store is good for the manufacturer, but not necessarily for the retailer. The effect on the retailer's profit depends on which product has the higher margin -the product switched to or the product switched from. Accelerated purchases that are stockpiled for future use may or may not be beneficial to the retailer. If retailer profit margin during the promotion period is larger than that during the nonpromotion period, it is to the advantage of the retailer to encourage stockpiling. This may be why retailers sometimes use promotion signage such as "stock up and save." If, however, the retailer's promotional margin is smaller than the regular margin stockpiling is unprofitable for the retailer.

In short, measuring the size of the short-term bump in sales actually says very little about whether the promotion is successful from the retailer's point of view. The bump must be broken down as far as possible into the effects shown in Figure 3, and the retailer's regular and promotional margins must be taken into account.

In addition to increases in short-term sales, promotions can have an effect on long-term sales. Consumer stockpiling increases sales during the promotion, but decreases them afterwards. Also, consumer loyalty may change. Manufacturers hope for increased brand loyalty, while retailers would like to increase store loyalty. However, promotions may also have a negative effect on loyalty. Price promotions can decrease consumers' reference prices, thus making the brand / store appear expensive on the next shopping trip. Attribution theory and behavioral learning theory explain how consumers can learn from buying on promotion, but these theories cannot predict whether consumers learn to buy a certain brand / in a certain store, or whether they learn to purchase on promotion.

Finally, a retailer is not only interested in sales of the promoted product, but also in sales of other products in the store. Promotions are very favorable for a retailer if they draw consumers into the store, who then also purchase nonpromoted products. This can only occur if store switching is direct and the storeswitching consumers are not just cherry picking. If store switching is indirect, consumers shop at both store A and store B, and this is not changed by the promotion in store A. If store switching is direct but the store switchers are cherry pickers, then they only come to the store to buy the promoted product, so that sales of other products do not increase.

## What We Know About the Strength of Promotion Effects

Many researchers have developed methods of measuring the effects of promotions on sales and applied them to generate substantive results over the last 25 years. Most of these studies are based on scanner data and study fast-moving consumer goods sold in grocery stores. Some studies use store-level scanner data, which have the advantage of being readily available for managers. However, singlesource scanner panel data, which combine household and store data, allow a more detailed analysis of promotion effects. With single-source data, researchers can go beyond sales or market share response functions and investigate consumer behavior, such as store choice, category purchase incidence, brand choice, and purchase quantity in more detail. Therefore, many empirical studies are based on this type of data. All these studies, together with laboratory and field experiments, have generated a wealth of results (for reviews see Gedenk 2002, Neslin 2002).

## Short-Term Effects

Retailer promotions typically cause a large bump in short-term sales of the promoted brands. Increases in sales by several hundred percent are not unusual. Promotional price elasticities differ across categories and depending on the promotion instruments used. For example, Narasimhan, Neslin, and Sen (1996) find that promotional elasticities are higher for categories with a relatively small number of brands, shorter interpurchase times, and higher consumer propensity to stockpile.

Supportive nonprice promotions can be used to enhance the effects of price promotions by drawing attention to them. For example, Narasimhan, Neslin, and Sen (1996) report on the basis of an Information Resources, Inc., study that a $15 \%$ "unsupported" price cut yields an average sales increase of $34 \%$ across 108 categories, whereas a $15 \%$ price cut supported by a feature generates a $161 \%$ increase, and a $15 \%$ price cut supported by a display generates a $293 \%$ increase. Supportive nonprice promotions can also serve the purpose of framing the deal. After all, a price promotion is like a picture-it looks different depending on which frame you put around it. Possible frames are external reference prices (e.g., "normally 3.99 $€$-today only $2.99 €$ ") or price cuts expressed in percent (" $25 \%$ off") rather than in absolute terms (" $1 €$ off"). Sometimes these frames can have strong effects, which result from simply putting up a sign. For example, Wansink, Kent, and Hoch (1998) show in a field experiment that imposing a quantity limit for canned soup ["limit of 4 (12) per person"] increases the average quantity bought per person. Given that consumers who would have bought a very large quantity without the promotion are not allowed to do so, a decrease in average quantity would have been expected. The authors explain their surprising results with an anchoring and adjustment effect. Consumers use the number in the quantity limit as an anchor to adjust their purchase quantity upwards. Another explanation could be that consumers interpret the quantity limit as a signal for a particularly attractive promotion. Finally, supportive nonprice promotions can be used by themselves without a
price reduction. Often consumers interpret promotional signs and displays in the stores as a signal for a promotion, resulting in an increase in sales at full margin. In summary, then, not only do price reductions matter, but POS signage, displays, and features can have a large impact on sales and profit contribution.

Many researchers have broken down the short-term sales bump into brand switching and purchase acceleration components. Until recently, empirical analyses seemed to indicate that about three quarters of the sales bump results from brand switching. However, van Heerde, Gupta, and Wittink (2003) have pointed out that these studies, which are based on a breakdown of the elasticity, have been interpreted in an inadequate way. When van Heerde, Gupta, and Wittink performed a unit sales decomposition and look at how much the promoted brand gains and how much competitors lose in sales, they found that two thirds of the sales bump resulted from purchase acceleration and only one third from brand switching. Other authors have shown that purchase acceleration can translate into additional category consumption through a faster use-up rate. For example, Ailawadi and Neslin (1998) find that $13 \%$ of the short-term sales bump for yogurt is due to increased consumption, whereas in the case of ketchup increased consumption accounts for only $5 \%$. In summary, then, we know that promotions cause substantial purchase acceleration, which, at least in some categories, can result in increased consumption.

The most important promotion effect for a retailer, store switching, has not been studied as much, and the empirical evidence of it that exists is somewhat mixed. A few studies find no effect of promotions on store traffic and store sales, but these studies use store-level data from supermarkets that run promotions every week, so that they can only study differences between the promotion bundles advertised each week. Other studies do indicate that promotions increase store traffic (e.g., Lam et al. 2001) and that a substantial part of the category expansion within the store comes from store switching (e.g., van Heerde, Leeflang and Wittink 2004). The latter study finds that, on average across different types of promotions, store switching accounts for $25 \%$ of the sales bump for tissues and $34 \%$ for peanut butter. The effect is about as strong for unfeatured as for featured promotions, indicating that a lot of the store switching must be indirect. More support for indirect store switching is provided by Bucklin and Lattin (1992), who studied singlesource scanner panel data for detergent. They find no evidence for direct store switching from features, but an increase in market share of the store in the promoted category, resulting from indirect store switching.

Even less is known about the extent of category switching that is attributable to promotions. One cross-category effect that has been studied extensively is category complementarity, that is, whether promotions in category A can increase sales in category B if the products are used or purchased together by the consumer. For example, Mulhern and Leone (1991) find sales increases for related products in some grocery categories, but not in others. They also find that if crosscategory relationships exist, they are asymmetrical. For example, cakemix prices significantly affect frosting sales, but the reverse is not true. Mulhern and Padgett
(1995) matched actual purchases of consumers with survey data to study the effect of promotions on nonpromoted products. In this study, only $23.2 \%$ of consumers who indicated that they had come to the store because of a promotion bought only the promoted item. This means that cherry picking exists, but not to a very large extent. At the same time, $51.8 \%$ of the consumers who had come to the store because of the promotion bought only nonpromoted items. Mulhern and Padgett find that this is not because the promoted product is out of stock, but because many consumers change their plans once they come to the store, or are disappointed by the promoted item when they inspect it. Note that Mulhern and Padgett found this effect in a home improvement store. In grocery retailing, where products are well known, it seems less likely that many consumers will visit the store because of a promotion but then not buy the promoted product. In summary, then, there is some evidence for positive effects of promotions on nonpromoted products, but it is not very strong. This issue certainly warrants further investigation.

## Long-Term Effects

Many researchers have studied the effect of promotions on brand loyalty. They find that temporary price cuts decrease reference prices, increase price sensitivity, and decrease share of category requirements and repurchase probabilities. These findings suggest a negative relationship between promotion and brand loyalty. However, the net effect on brand sales may be positive, at least for some customers. The reason is that consumers show some inertia in their purchase patterns: they tend to repurchase what they purchased last time. A promotion makes it more likely for this inertial effect to occur, because it induces that first purchase. Promotion weakens the inertial effect relative to a nonpromotion purchase, but the inertial effect is still positive. As a result, promotions do not necessarily decrease long-term market share (Gedenk, Neslin 1999). In fact, the net impact on share can be positive. Ailawadi, Lehmann and Neslin (2001) find that, in the long run, decreasing promotion and, as a result, increasing net price had a detrimental effect on customer share of requirements and contributed to a decrease in market share. In addition, Gedenk and Neslin (1999) find that nonprice promotions such as features and sampling have a weaker short-term effect, but are more favorable for brand loyalty than are price promotions, resulting in a stronger positive net effect on brand choice probabilities after the promotion.

Unfortunately, the effect of promotions on store loyalty has not been studied as much. An important measurement issue with regard to store loyalty is whether inherently nonloyal shoppers are self-selected to shop at promotion-oriented stores, or whether promotions in fact erode the loyalty of shoppers over time. Bell and Lattin (1998) provide some evidence of a self-selection effect. They show that consumers who purchase large total market baskets per visit tend to favor stores that feature everyday low pricing (EDLP), whereas shoppers who purchase small market baskets prefer stores that run good promotions. Sirohi, McLaughlin and Wittink (1998) find that perceptions of a store's promotions correlate positively
with perceived value and store loyalty. Finally, Taylor, Neslin (2005) provide evidence for a positive effect of a special type of promotion on store loyalty. They studied a loyalty promotion in which consumers could obtain a free turkey product based upon purchases during an 8 -week promotion period. They found that this reward program increased sales during the 8 weeks of the promotion ("points pressure effect"). In addition, consumers participating in the promotion purchased more in the store after the promotion. This "rewarded behavior effect" occurs because the goodwill and positive affect created by the reward resulted in the customer having a more favorable view of the retailer and hence purchasing more. In summary, there is some evidence that promotions can have a positive effect on store loyalty, but the issue warrants further investigation.

## Future Developments

## New Technologies

Retailing is currently facing opportunities from a variety of new technologies. In Germany, Metro is currently testing many of these technologies in its "Future Store," grocery store belonging to the "Extra" chain in Rheinberg. In this paper we will not discuss all of these technologies, but just briefly present those that we expect to have the largest impact on promotions:

- Loyalty cards
- Personal shopping assistants (PSA)
- Electronic shelf labels and advertising displays
- RFID


## Loyalty Cards

Loyalty cards have been used by retailers for quite a few years. Nonetheless, they are still included here, since they can be combined with some of the other technologies and they constitute a major basis for targeting promotions. Metro in Germany is a participant in the "Payback," loyalty program administered by the company Loyalty Partners. Consumers can collect Payback points in many Metro stores, such as Real (grocery), Kaufhof (department store), and OBI (DIY), but also in chains of other retailers, such as Apollo Optik (optician) and Goertz (shoes). Once consumers have collected a certain number of points they can exchange them for a cash payment or a premium. In September 2004, Payback had issued as many as 28.3 million cards to consumers in Germany (the chapter by Reinartz in this book provides more information on the design of loyalty programs).

For Metro, Payback provides valuable data for promotion analysis and planning. As in a single-source panel, the retailer has data on consumer purchase be-
havior at the household level, as well as in-store data on the promotion environment at the time when purchases are made. One disadvantage relative to singlesource data is that loyalty card data only concern purchases within the participating chains of stores. Thus, purchases made in a competitor's store cannot be registered. Note also that Payback only provides detailed data for consumers who have acquired their card through a certain chain of stores. Owing to privacy regulations, the rest of the raw Payback data is only available to Loyalty Partners. It can nonetheless be used for targeting consumers, since direct mail promotions, for example, can be sent through Loyalty Partners.

## Personal Shopping Assistants

Personal shopping assistants (PSAs) can be attached to customers' shopping carts when they enter a store. At the Metro Future Store, the PSA reads the Payback card of a shopper, so that it can access the purchase history of the customer's household. The PSA display shows an electronic shopping list. It initially proposes a shopping list based on the favorites from previous purchases. The consumer can than modify that list. If the consumer scans the products $s / h e$ puts into the shopping car, the PSA calculates total price and indicates savings from products bought at a reduced price (see also chapter by Litfin and Wolfram in this book). In addition, the PSA displays information on promotions in the store. PSAs therefore offer the potential to induce category complementarity and encourage new use, indirect store switching, and purchase acceleration effects.

## Electronic Shelf Labels and Advertising Displays

Electronic shelf labels and advertising displays are controlled centrally by WLAN. In the Metro Future Store, electronic shelf labels are directly connected to the price administration system and the checkout system. Thus, prices on the shelves are always identical to prices at the checkout. On LCD displays the labels show the prices of products on the shelf. In addition, special offers may be highlighted by a flashing signal.

Electronic advertising displays are attached to the ceiling in several locations in Metro's Future Store. They can display advertising messages or show videos. Messages can be changed within seconds. This type of signage might be very effective at inducing profitable brand switching and indirect store switching as well as new use and purchase acceleration effects (see, e.g., chapter by Kalyanam, Lal, and Wolfram in this book for more detail on technologies being used in Metro's Future Store).

## Radio Frequency Identification

Finally, an important new technology in retailing is radio frequency identification (RFID). This auto-identification technology uses radio waves to identify individual physical objects. In the US, WalMart is the first to have asked its
suppliers to attach RFID tags to pallets and cases of products. In Germany, Metro is a pioneer in the usage of RFID. In its Future Store, it is even running tests with tags attached to individual products. So far, this is an expensive exercise, since each tag costs about 30 cents. Also, RFID is still beset with technical problems, such as the receivers' inability to read through liquid and metal. Finally, consumers have strong concerns about privacy. This has induced the Future store to test deactivating devices, which make sure that RFID tags can no longer be read once the consumer leaves the store. In spite of these current difficulties, many experts expect RFID to develop further and replace identification through UPC / EAN in the future.

So far, tests of RFID have focused on optimizing the supply chain, and reducing costs in logistics. But RFID also offers potential for servicing the customer better, particularly when tags are attached to individual products, and for better analyses of the impact of retailers' in-store merchandising activity.

## Opportunities for Sales Promotions

The technologies described above can be expected to affect retailer promotions in several ways, the most important ones of which are related to:

- Better control
- Targeting consumers outside the store
- Targeting consumers in the store
- Cross-selling

We will discuss these aspects in turn.

## Better Control

A first effect of the new technologies is increased flexibility with respect to price changes. In particular, electronic shelf labels and electronic displays allow the retailer to adjust prices very quickly. Thus, it becomes possible to run promotions for very short time spans. For example, a retailer could offer a price promotion during the day, when most housewives go shopping, and return to the regular price at night, when many singles shop after their working day is finished. This means that promotions will have an increased potential for price discrimination.

Also, promotions in a traditional retail environment often run into problems with out-of-stocks. Since it is hard to forecast sales bumps caused by a promotion, retailers may not have enough of the promoted product in the shelf or display, and thus not be able to satisfy consumers' demand. RFID technology may help discover out-of-stocks very quickly, so that extra products can be moved to the point-of-sale (see chapter by Verhoef and Sloot in this book for more information on evolving approaches to out-of-stocks reduction).

## Targeting Consumers Outside the Store

Price promotions are an important tool in price discrimination. Typically, the price discrimination works through self-selection of the consumers. The promotion is offered to all customers, who then decide whether to use it or not. However, promotions can be an even stronger mechanism for price discrimination if retailers do not offer them to all customers, but target certain consumers. This type of targeting can be an effective way of encouraging profitable store switching, purchase acceleration, category switching, and brand switching.

Targeted promotions can be easily used on the Internet, where customerspecific information is available. Loyalty programs such as Payback can also provide an important database for targeting promotions. Customers can be selected on the basis of demographics and past purchase behavior and addressed individually through direct mail. Tesco, a leading UK retailer, reportedly creates upward of 100,000 separate promotional flyers on a quarterly basis to effectively target its customers with the coupons these customers want. This is also true of CVS, the leading drugstore chain in the US. Metro uses Payback data mostly for targeted direct mail coupons. For example, Real frequently sends coupons to households with large shopping baskets.

Targeting can also occur at the category level. For example, loyalty card data can be used to find out which product categories a household does not yet buy in a given retail chain, but might buy there if offered a promotion. Real, for example, has been successful with sending coupons for toys to consumers who have several children but have not yet purchased toys at Real.

A key question, obviously, is which consumers to target. One possible answer would be to address coupon-prone consumers, i.e., those consumers who redeem a relatively large number of coupons. However, coupon proneness in itself does not make a consumer attractive for targeted promotions. It is possible that couponprone consumers only use coupons for products that they would have purchased anyway in the store concerned. Thus, it is important to identify consumers who would be induced by coupons to make incremental purchases.

The academic discussion has focused a lot on whether promotions should be offered to loyal consumers or to switchers. At first glance, it seems like a good idea to target switchers. Loyal consumers would buy a given brand in a given store anyway, without creating incremental sales. In contrast, switchers can be prevented from buying a competitor's brand or shopping in a competitor's store. At second glance, however, this strategy can have severe drawbacks. First, as Shaffera and Zhang (1995) point out, targeting switchers may not be profitable in a competitive setting because it results in a prisoners' dilemma. If all competitors target the switchers, the overall price level declines while market shares remain the same, and profits become smaller for all firms. Second, Feinberg, Krishna and Zhang (2002) point out that targeting switchers may cause two negative behavioral effects, which they call betrayal and jealousy effects. A betrayal effect means that consumers' preference for their favored firm will decline if the firm offers a special price to switchers, i.e., to another firm's loyal customers. A jealousy effect
means that consumers' preference for their favored firm will decrease if another firm offers a special price to its own loyal customers. In a laboratory experiment, the authors found empirical support for these effects. They show that when firms ignore these behavioral effects they put too much emphasis on targeting switchers. When these effects are taken into account, it may become more profitable to target loyal customers. Overall, then, the question of whether to target switchers or loyal customers is not a trivial one, and it warrants further investigation.

Finally, retailers may consider using customer lifetime value for targeting certain customers with promotions. As in the case of coupon proneness, it is important to note that retailers should not necessarily target the consumers with the highest customer lifetime value. Rather, they should try to identify those consumers for whom promotions will lead to an increase in customer lifetime value.

In summary, targeting consumers outside the store offers potential for more effective price discrimination. However, more research is needed on which consumers to target. Whether retailers' use of targeted promotions will increase in the future will depend on whether attractive target groups can be identified and on whether targeting will lead to a prisoners' dilemma and annoy consumers who are not part of the target group.

## Targeting Consumers in the Store

Thus far, targeted promotions have mostly been used on the Internet and via direct mailing, but new technologies also offer the opportunity to target consumers at the point of sale in bricks-and-mortar stores. Customized information on promotion can be presented to the consumer by beaming it on the floor or by displaying it on the PSA or on electronic advertising displays. For example, the information on the PSA may change according to where a consumer is located in the store. The promotion information displayed can be adapted to the individual consumer on the basis of the information read from the loyalty card inserted into the PSA. If products have RFID tags, electronic advertising display can show information about a certain product once the consumer takes it off the shelf.

## Cross-Selling

The same technologies offer retailers new opportunities for cross-selling and for exploiting category complementarity. For example, analysis of market basket data together with loyalty card data may suggest that breakfast products and fruits are typically bought together and a particular shopper might currently buy breakfast products in the store but not much fruit. The retailer could therefore create a promotion that offers a price discount on fruit if the customer buys breakfast products. A major question in this type of cross-selling is which should be the promoted brand - the breakfast product or the fruit. Dhar and Raju (1998) show that this depends on the market shares of the two brands and whether they are complements or substitutes. For example, they find that when brands are complements, the promoted brand should be the high-share brand.

In addition, cross-selling may be induced by promotions directly at the point of sale. If individual products have RFID tags, in-store promotions may be based on the products a consumer has already put into his/her shopping cart.

The above discussion has shown that new technologies in retailing offer many opportunities for sales promotions. Promotions are becoming more flexible, can be targeted better at specific consumers, and can be used for cross-selling. Many of the new opportunities occur at the point of sale in bricks-and-mortar stores, where sales promotions can be featured in more prominent and targeted ways. Thus, a general trend expected is that larger parts of the promotion budgets of retailers and manufacturers will be spent on in-store promotions.

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