Historical and Present Perspectives on Price Bundling

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Firms use price bundling as a cost-effective strategy to optimize their profits. This research examines sixteen years of the academic and practitioner’s price bundling marketing literature for both products and services. A brief discussion of the origins of pricing and the economic rationale of price bundling is presented. Also, an evaluation of the price bundling literature and directions for future research are suggested.

Borden (1964) argued that pricing is one of the elements of the marketing mix and that pricing strategies include decisions on both pricing policies and procedures. This research investigated the historical importance of one of the firms most profitable pricing strategies, price bundling. For this purpose, a thorough examination that includes both electronic and manual searches of published or academically reviewed research in marketing was conducted. The electronic search included three major business journals on-line databases: ABI Inform-Global, EMERALD and JSTOR. These databases include over 1,000 national and international business periodicals. Several key words were used in the electronic search: tie-in sales, block booking, and bundling. Wildcard symbols (i.e., *, ?) were used to account for multi-variations of the key words.

A manual search was conducted by reviewing the relevant cites of the articles found using the electronic search. An electronic search of the UMI database that includes dissertations published in English, and includes dissertations conducted in North America and Canada was also conducted. This research generated 96 relevant studies, including 12 book chapters, 41 dissertations and 38 peer-reviewed journals. Thirty-seven studies are marketing related and include 19 studies published in marketing journals, 16 dissertations, and two book chapters. Thirty-tree studies came from economics and 27 from general business.

Bundling, the practice of selling two or more separate products and/or services for a single price (Naylor and Frank 2001), is a common selling strategy in today’s markets. Price bundling strategies are common in the software, computer, communications, and tourism industries. Some examples of bundled goods are fast-food combos, vacation packages, sports season tickets, and software-included “built for you” computers. Firms use price bundling as a cost-effective mechanism to promote their products and to increase their profits. For example, Lee (1999) estimated the effect of bundling in the web browser market and found that Microsoft gained $8.2 billion dollars (a 3.2% gain of its stock price) for bundling Internet Explorer with its Windows software.

Evidence of bundling strategies can be traced back to the 20th century. In it’s Consumer Guide of Fall 1900, Sears Roebuck and Co. advertised, “The Greatest Value Ever Offered in a Medium Price Parlor Suite … At our price of $13.50 to $19.00 we are offering wonderful value in this beautiful 5-piece parlor suite. … The suite complete consists of a large sofa, large rocker, large easy chair and two parlor chairs” (p. 1079).

Although price bundling is not a new pricing strategy, it did not appear in the marketing outlets until Gerard Tellis’s (1986) taxonomy of pricing strategies. However, discussions of the rationale of price bundling can be traced back to Burstein (1960), Stigler (1968) and Adams and Yellen’s (1976) work in economics.

This paper is divided into five sections. In the first section, a discussion of the origins of price is presented. In the second section, an explanation of the economic rationale for price bundling is offered. The third section summarizes the academic literature on price bundling. The forth section discusses the practitioners approach to price bundling. Finally, conclusions and directions for future research are presented.

ORIGINS OF PRICING

The study of prices is hundreds of years older than both the marketing discipline and the first writings of the classical economists. Historical reviews trace early writings on pricing to the Greek and Roman Empires (Buchholz 1999). For example, in the year 301 AC, Diocletian promulgated an Edict on Maximum Prices. In this document Diocletian established maximum legal prices for commodities and services across the Roman Empire. Diocletian argues that these maximum prices have been established “justly and rightfully” (Lewis and Reinhold 1955). The discussion of the “just price” continued in the Catholic Church during the middle ages. Trying to protect the poor, churchmen argued that merchants and craftsmen should only charge a “just price,” which had to be no higher than the cost of the materials and labor incorporated in the products sold. Also, studies of the just price, the concession of monopolies to the crown, and the role of
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Also, Hollander (1957) argued that studying retail rather than commodity pricing is critical, given the importance of retailing to the US economy (retail firms constituted about 40 percent of all firms in the US in 1954). Hollander (1957) noted that the assessment of retail pricing provides a better insight of the market behavior for several reasons: (1) the heterogeneity of retail facilities permits an analysis of prices under different conditions, (2) the pattern of retail pricing differs between small towns and metropolitan areas, (3) pricing information on retail pricing is public, and (4) the variety of items handled may help to deal with the joint product problem. Interestingly, joint product problems are essentially bundling problems.

Dean (1950) proposed a framework for pricing new products at two stages of the product life cycle, the pioneering and maturity stages. Dean (1950) argued that firms chose between two pricing strategies at the pioneering stage: (1) a policy of high initial prices for demand skimming, or (2) a policy of low initial prices for market penetration. Dean (1950) contended that in order to determine the appropriate pricing policies for later stages in the cycle of the market, firms need to assess when the product is approaching maturity. Dean (1950) argued that some of the symptoms of approaching the maturity stage are: (1) a weakening in brand preference, (2) a narrower physical variation among products, (3) the entry of private-label competitors into the market, (4) signs of market saturation, and (5) a stabilization of production methods.

In 1958 Lanzillotti claimed that the current knowledge of the price-making process was inadequate and that more empirical research was needed to understand the firms' objectives and the firms' mechanisms for pricing decisions. After interviewing officials from twenty large US corporations, Lanzillotti (1958) found that the most typical pricing objectives were: achieving a target return on investment, stabilizing sales margins, obtaining a target market share, and preventing competition. Also, Lanzillotti (1958) differentiated among several pricing strategies, such as cascading, cost-plus, skimming, and penetration.

Hawkins (1954) stated that there was a discrepancy between economic theory and firms pricing policies. For that reason, Hawkins (1954) proposed several pricing strategies, such as: odd pricing, psychological pricing, customary pricing, market pricing, prestige pricing, price lining, resale price maintenance, quantity discounts, and geographic pricing.

Finally, Oxenfeldt (1961) proposed a practical pricing program for marketing executives, suggesting a multi-stage approach to pricing. Oxenfeldt (1961, p. 73) proposed the following steps for pricing: "... in the first stage, the pricing executive selects market targets based on an analysis of the firm's commitments, capabilities, and the market strategies of firm rivals. The other steps include the choice of a target brand image, the composition of a marketing mix, the selection of a pricing policy, the selection of a pricing strategy, and, finally, the choice of a specific price."
The theoretical rationale for price bundling is based on the seminal work of three economists who during the 1960's and 1970's studied the optimality of pricing strategies for bundles of goods and services, setting the basis for the work of academicians and practitioners in the marketing discipline. The next section describes the work of these economists.

ECONOMIC RATIONALE OF PRICE BUNDLING

Burstein (1960), Stigler (1968) and Adams and Yellen (1976) studied the firm's strategies of pricing two or more goods as a package. In their analysis, the researchers assume that firms engaging in this practice have monopolistic power for at least one of the goods included in the package. Hence, the analysis of price bundling is conducted using monopoly models. Burstein (1960, p. 68) defined a tie-in sale as one "which simply requires that the purchaser of the tying good purchase his 'requirements' of one or more tied goods from the seller of the tying good". Furthermore, Burstein (1960) explained that firms use tie-in arrangements as a means of extracting the profit inherent in an all-or-nothing selling arrangement. When consumers face the restriction of buying a good "X1" conditioned to the purchase of the tied goods, the tie-in firm extracts "some of his 'victims' consumer surplus from X1 entirely through his manipulation of the tied goods" (Burstein 1960, p. 69). Therefore, Burstein (1960) viewed the tie-in sale as both an extension of monopolistic power and an exclusion of sales strategy. Burstein (1960) found that firms that impose tie-in arrangements are able to extract higher profits, regardless of tied-in goods being independent, substitute or complementary.

Stigler, the 1982 Economics Nobel Laureate, addressed the issue of price bundling in 1962. In his 1962 analysis of the antitrust case, United States v. Loew's Inc., Stigler studied the economic rationale of block booking of movies. In block booking, "the owner of two films uses the attractiveness of one film to force the buyer to purchase the other film as well" (Stigler, 1968, p. 166). Note that Stigler's (1968) definition of "block booking" is similar to Burstein's (1960) definition of a tie-in sale.

Stigler (1968) explained that block booking is a method of selling where prices are calculated to extract larger sale sums than otherwise would be possible, and that the strategy is feasible because buyers value the goods differently. Stigler's (1968) two-goods (X and Y) and two-buyers (A and B) example illustrates this explanation.

"A would pay $8,000 for film X and $2,500 for film Y. B would pay $7,000 for film X and $3,000 for film Y. If the seller were to price the two films separately, he would receive: $5,000 for the sale of Y, at $2,500 per buyer. A higher price would exclude A and reduce receipts. $14,000 for the sale of X, at $7,000 per buyer on the same logic. The total received is $19,000. But with block booking, a single price of $10,000 can be set for the pair of films, and $20,000 would be received" (Stigler 1968, p. 166).

Stigler (1968) developed a formal theory for pricing-bundles. In his theory, consumer's asymmetric reservation prices are a necessary condition for price bundling to be preferred to a separate pricing strategy. Asymmetric reservation prices are possible when consumers have asymmetric tastes.

Adams and Yellen (1976 p. 475) introduced the concept of commodity bundling, defined as the "practice of package selling." The researchers differentiate between two types of commodity bundling strategies: a pure bundling strategy, and a mixed bundling strategy. In a pure bundling strategy the firm only sells goods in packages, whereas in a mixed bundling strategy a firm sells the same goods separately as well as in packages.

Both, Adams and Yellen (1976) and Stigler's (1968) share the explanation that the profitability of commodity bundling is derived from a firms' ability to extract consumer surplus by clustering consumers into groups with different reservation prices. Also, Adams and Yellen (1976) argued that cost savings in production, transactions, and information associated with package selling are not necessary conditions for commodity bundling to be profitable.

Adams and Yellen (1976) compared three pricing strategies: (1) first-degree price discrimination (i.e., charging different prices to each consumer for the same good), (2) pure bundling, and (3) mixed bundling. The researchers found that the condition under which each strategy generates the maximum profits depends on the firms cost structure and the distribution of consumers' reservation prices. However, the researchers argue that in most circumstances commodity bundling pricing (both pure and mixed) is preferred to first-degree price discrimination for two reasons: (1) in commodity bundling pricing the firm requires less information (i.e., only joint distribution of reservation prices rather than each individual reservation price are needed), and (2) since in commodity bundling pricing all consumers pay the same price for the bundle, laws based on price discrimination are not violated.

Adams and Yellen (1976) showed that mixed bundling is possible because some consumers value individual components of the bundle very highly. Their explanation of why some restaurants offer complete dinners as well as à la carte menu is that "à la carte menu is designed to capture consumer surplus for those gastronomes with extremely high valuations of particular dishes, while the complete dinner is designed to retain those with lower variance in their reservation prices" (Adams and Yellen 1977, p. 488).

A decade after Adam and Yellen's (1976) price bundling strategy taxonomy, Tellis (1986) introduced the concept of price bundling to the marketing literature.

ACADEMIC MARKETING LITERATURE

This section presents a sixteen-year examination of the marketing journals and dissertations published in English, since the Tellis (1986) article and until the Stremersch and
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Tellis (2002) article. This section includes two lines of research for studying price bundling: a firm's perspective and a consumer's approach.

The first stream of research followed the economics paradigm and analyzes price bundling from a firm's perspective. These researchers were primarily interested in investigating the optimality of different pricing strategies, the selection of goods in bundles, and the effect of the different bundling strategies on the firm's performance. Researchers have investigated several rationales for price bundling, such as: price discrimination (Foster 1991; Venkatesh and Mahajan 1993), profit optimization (Ansari et al. 1996; Tellis 1986; Venkatesh and Mahajan 1993), market share (Orange 1995), competitive advantage (Guiltinan 1987; Barth, 2000), and risk reduction (Harris 1997; Ramnarayan 1994; Wilson et al. 1990). Table 1 presents a chronological summary of selective contributions of marketing researchers that used a firm's perspective to price bundling.

The second line of research takes a consumer approach. These researchers investigate how consumers evaluate the components of the bundle, its prices and characteristics (e.g., Yadav 1990, Streimersch and Tellis 2002). Economic and Psychology based theories have been used to explain buyer behavior towards bundled goods: Prospect Theory (Tversky and Kahneman 1991; Kahneman and Tversky 1979), and Mental Accounting Theory (Thaler 1994). Noteworthy is the fact that Kahneman, a trained Psychologist, was the recipient of the 2002 Nobel Price in Economics for having integrated insights from psychological research into economic science. Table 2 presents a chronological summary of selective contributions of marketing researchers that used a customer's approach to price bundling.

Firm's Perspective

Classification of firm's Pricing Strategies

Tellis' (1986) article was the first article published in the marketing literature that examined the issue of price bundling, more than two decades after Burstein (1960) and Stigler's (1968) studies. In his seminal article, Tellis (1986) proposed a classification of the firm's pricing strategies. Tellis (1986) claimed that firms pricing strategies might be grouped into three categories: differential pricing, competitive pricing, and product line pricing. Firms that adopt differential pricing strategies sell the same product to different groups of consumers at different prices. Competitive pricing strategies are aimed at improving the firm's competitive position in the market, whereas product line pricing strategies are pertinent when a firm has a set of goods and has the objective of maximizing short-run profits. Also, Tellis (1986) differentiated among three-product line pricing strategies: premium pricing, complementary pricing, and price bundling. In premium pricing, the firm prices two substitute goods, a premium product and a lower product version. The strategy consists on taking a premium on its higher product version and a loss on its lower priced version. In complementary pricing, two complementary goods are priced (e.g., printers and ink). The strategy compensates the losses of selling one product (e.g., printers) with the premium obtained on its complementary good (e.g., ink).

Tellis (1986) suggested that firms should engage in a price bundling strategy when they face a heterogeneous demand for non-substitute perishable goods. Tellis (1986) asserted that in price bundling the firm prices two or more non-substitute perishable goods with an asymmetric demand structure. Because the goods are non-substitutes, it is feasible to induce consumers to buy both (or all) goods.

Tellis (1986) shared Adams and Yellen's (1976) taxonomy and classifies bundling strategies as pure components and mixed bundling. In pure components strategies consumers have two choices: buying the whole bundle, or not buying any of its components whereas in a mixed bundling strategy, consumers can buy the bundle (generally offered at a lower price than the sum of its parts) or each element of the bundle. Tellis (1986) noted that pure components bundling may be considered illegal (e.g., tying contracts). On the other hand, mixed bundling is not only legal but also both consumers and sellers are better off with the mixed bundling strategy than with the pure components strategy (Tellis 1986).

Definitions and Optimal Bundling Strategies

Guiltinan's (1987) contribution to the price bundling literature is threefold. The researcher provided the first marketing definition of bundling, differentiated between to mixed bundling strategies (mixed-leader bundling and mixed-joint bundling), and proposed a framework for determining the conditions under which each form of bundling is the most effective strategy for pricing services. Guiltinan (1987, p. 74) defined bundling as, "the practice of marketing two or more products and/or services in a single 'package' for a special price."

Guiltinan (1987) argued that the effectiveness of price bundling depends on the degree to which it stimulates consumer demand and the firms' capacity to realize cost economies. Guiltinan (1987) identified the demand conditions under which price bundling is effective and presented a framework for selecting the appropriate types of services for the mixed-leader and the mixed-joint strategies. Guiltinan (1987) suggested four criteria for designing a bundling strategy for two goods (A, B). First, to minimize the cannibalization effects, select A and B such that the quantities of A and B sold without bundling are small. Second, in order to offset the cannibalization effects, bundle goods that generate new consumers for both A and B. Third, in mixed-leader bundling, the leader should be the lower margin service (to avoid cannibalization).
TABLE 1
FIRM’S PERSPECTIVE: MARKETING RESEARCHERS CONTRIBUTIONS TO PRICE BUNDLING

<table>
<thead>
<tr>
<th>Author</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Tellis (1986)</td>
<td>Introduced the price bundling concept into the marketing literature.</td>
</tr>
<tr>
<td>Guiltinan (1987)</td>
<td>Provided the first marketing definition of bundling and proposed the conditions under which different forms of price bundling are effective.</td>
</tr>
<tr>
<td>Bojanic (1988)</td>
<td>Combines theoretical and empirical literature to develop a framework that can be used to address bundle decisions.</td>
</tr>
<tr>
<td>Hanson and Martin (1990)</td>
<td>Propose a model for calculating optimal prices.</td>
</tr>
<tr>
<td>Wilson et al. (1990)</td>
<td>Study bundling strategies of multi-component systems.</td>
</tr>
<tr>
<td>Mulhern and Leone (1991)</td>
<td>Demonstrate that a multiproduct orientation can be used to boost performance of retailers by integrating the multiplicity of effects of retail promotions.</td>
</tr>
<tr>
<td>Venkatesh and Mahajan (1993)</td>
<td>Propose a probabilistic approach that enables sellers to determine optimal prices of bundles and its components under pure component, pure bundling, and mixed bundling strategies.</td>
</tr>
<tr>
<td>Rosenthal et al. (1995)</td>
<td>Develops a model that minimizes purchasing costs of buying products from a vendor.</td>
</tr>
<tr>
<td>Ansari et al. (1996)</td>
<td>Compares profit and non-for-profit firms and determines the optimal number of items of service bundles under pure and mixed bundling strategies.</td>
</tr>
<tr>
<td>Van Buer et al. (1997)</td>
<td>Develops a model that minimizes purchasing costs of buying multiple bundles from multiple vendors.</td>
</tr>
<tr>
<td>Sarkis and Semple (1999)</td>
<td>Develops a model that minimizes purchasing costs of buying a product from multiple vendors.</td>
</tr>
<tr>
<td>Barth (2000)</td>
<td>Argues that bundles can be used to avoid direct price competition in the restaurant industry and that consumers find multi-item offers attractive due to perceptions of price savings, simpler decision-making, and value.</td>
</tr>
<tr>
<td>Bennett and Robson (2001)</td>
<td>Finds evidence of the benefits of bundling a range of low-cost and low-intensity services.</td>
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</table>

Fourth, mixed-joint bundling should be the preferred strategy when the margins and the sales volumes of the two services are approximately equal.

In 1988, two price bundling marketing dissertations were written in the US. Bojanic (1988) developed a framework to address bundling decisions, and Park (1988) proposed a programming algorithm that identifies optimal bundles for both mixed-leader and mixed-joint bundling.

Researchers have been interested in studying the purchasing problem in which a commercial buyer must obtain various items from a variety of vendors who offer both individual items and bundled products at discounted prices. To address this problem, Rosenthal et al. (1995) developed a linear programming model that finds the purchasing strategy for the buyer that minimizes the total purchasing cost. However, Sarkis and Semple (1999) found that Rosenthal et al. (1995) model could produce results where the buyer pays more to receive less. Sarkis and Semple (1999) developed a model that minimizes purchasing costs while permitting the buyer to purchase more than one bundle per vendor. Similarly, Van Buer et al. (1997) proposed a model that calculates the minimal cost for purchasing bundles of multiple products from multiple vendors.

Orange (1995) argued that the strategic objective of bundling might be either cross selling to existing customers or new customer acquisition. Orange (1995) stated that the decision to offer a bundled product is a result of an analysis of the consumer demand for the bundle and each of its components. Orange (1995) developed a logistic regression model to estimate the demand curves of individual add-on services (online services) and a bundle, and found that product bundling strategies are most effective when used to increase the profitability of products or services with inelastic demand curves.

Price Estimations

Hanson and Martin (1990) examined the issue of optimal bundle pricing and proposed the first market model for calculating optimal prices. Based on an algorithm that includes the firm’s benefits for reducing the bundle component costs and consumer’s valuations for the bundle, Hanson and Martin’s (1990) model solves for the
selection of products for inclusion in the firm's product line.

Mulhern and Leone (1991) presented a non-orthodox approach to price bundling by arguing that retail price promotions are forms of price bundling because the retailer's aim is to promote the sales of certain products by manipulating the prices of other products. Mulhern and Leone (1991) claimed that the implementation of an implicit price bundling strategy requires the integration of the multiplicity of effects of individual prices in a profit-maximizing way, and show how interdependencies in demand of the bundle items can be incorporated into retail pricing strategies. Also, Mulhern and Leone (1991) found that the price levels that optimize retail profits are different from those that maximize brand manufacturer profits.

In the same vain, Venkatesh and Mahajan (1993) proposed a probabilistic model for bundle pricing. Assuming that the number of items included in the bundle is known a priori, their model allows a seller to estimate optimal prices of a bundle of products or services and its components under pure components (i.e., items are priced separately), pure bundling, and mixed bundling strategies. Consistent with Adams and Yellen (1976), Venkatesh and Mahajan (1993) found that mixed bundling is more profitable than pure components price bundling strategies, and that mixed bundling can be effectively used to price-discriminate between frequent and occasional buyers.

Ansari et al. (1996) extended Venkatesh and Mahajan's (1993) model in three ways: (1) they proposed a model where the optimal number of items included in the bundle is determined endogenously, (2) the model is used to assess the optimization objectives of both profit and non-for-profit organizations, and (3) the model is used to investigate policies for packaging subscriptions. Ansari et al. (1996) found that not-for-profit organizations make different marketing mix decisions than profit maximizing firms. Contrary to the economics marginality assumptions, the optimal price for not-for-profit organizations depends on the organizations fixed cost because not-for-profit organizations are subject to non-deficit constraints that include total costs.

**Services Bundling**

In her dissertation, Foster (1991) introduced the concept of bundling to promotions. Foster (1991) suggested that cross-promotions (i.e., firms simultaneously promoting two or more of their products) are an implicit form of commodity bundling that allow firms a greater possibility of price discrimination and profits by inducing consumers to self select themselves into smaller segments.

Bennett and Robson (2001) investigated the market potential for bundling business association services and found that business associations emphasize bundled service combinations rather than separate services. Bennett and Robson (2001) argued that this might offer special advantages for the associations by both reducing the costs of providing advice, and by taking advantage of economies of scope in advisor expertise between related transactions.

Both Wilson et al. (1990) and Barth (2000) argued that bundling is beneficial for both the firm and the consumer. Wilson et al. (1990) studied the bundling options of firms that sell multi-component system (e.g., computer systems and telephone networks). Wilson et al. (1990) examined the risks and benefits of three dealing alternatives: (1) continue selling a bundled system, (2) unbundle and sell the components individually, and (3) sell some of the components of the system individually and withdraw from selling other components of the system. Wilson et al. (1990) showed that the market growth is a key determinant of the attractiveness of each strategy. Also, Wilson et al. (1990) rejected the economics argument that explains bundling as a type of price discrimination and presented a model based on the premise that bundling is motivated by the profitability of offering a greater benefit to consumers who value the integration of desired attributes found in a bundle.

Barth (2000) argued that bundling menu items in restaurants are beneficial for both the restaurant and the consumer. Restaurant managers' bundle menu items into multiple-item meal offers in order to increase capacity utilization and average check, decrease marginal cost, avoid direct price comparisons with competitors, and market new menu items. Also, consumers find multi-item meal offers attractive due to perceptions of price savings, simpler decision-making and value.

In summary, marketing researchers have found that both pure components and mixed price bundling strategies allow firms to maximize short-run profits and that the effectiveness of price bundling strategies depends on the firm's capacity to stimulate consumer demand and realize cost economies. A second stream of research in the literature includes studies that have taken a consumer's approach to price bundling.

**Consumer's approach**

**Perceptions of Savings and Item Anchoring**

Manjit S. Yadav (1990) was a pioneer in taking a consumers approach to study price and product bundling. This researcher took a different approach to the traditional analysis of how bundling effects the performance of the firm and examined how buyers evaluate bundles and how perceptions of savings are formed in the context of a bundle offer. After his 1990 dissertation, Yadav published three journal articles and a book chapter, examining price bundling.

In his dissertation, Yadav (1990) developed and tested two models: a model of the bundle's acquisition value, and a model of transaction value. The former model is used to evaluate the role of price and non-price information on the evaluation of bundle items. The later model is built on the assumption that buyers combine perceived savings on the
individual items and perceive additional savings on the bundle to form an overall perception of savings of a bundle offer. Yadav (1990) found that consumers examine bundle items perceived as more important, prior to items that are perceived as less important and that consumers overall evaluation of a bundle is the weighted average of the items evaluation.

Based on Tversky and Kahneman's (1991) anchoring and adjustment heuristics, Yadav (1994) proposed that buyers process information of bundles of products using a simplifying heuristics that enables them to approach the evaluation task as a series of smaller and simpler evaluations. Yadav (1994) found that, when evaluating a bundle of goods, buyers anchor their evaluation of the item perceived as more important and then make adjustments on the basis of their evaluations of the remaining bundle items.

Similarly, Puri (1998) distinguished between focal and ancillary products. Puri (1998) argued that focal products are those that are important to both the seller and the buyer, whereas ancillary products are less important to both parties. Puri (1998) hypothesized that sellers often bundle focal and ancillary items to increase the consumer's likelihood of purchasing the focal product. Puri (1998) found that consumer's evaluate an identical ancillary product as providing greater value when it is bundled with a focal product than when it is not.

Consistent with Kahneman and Tversky's (1979) Prospect Theory, Yadav (1994, p. 351) found that "when faced with an excellent anchor and moderate add-on items, subjects readily adjusted the overall bundle evaluation downward. However, the tendency to adjust upward was considerably less when the anchor was poor and the add-on items was moderate. ... Hence, when firms seek out possible items for bundling, they should recognize that it is easier to 'hurt' an anchor than to 'help' it."

**Attitudes Towards Bundle Items**

Yadav (1995) argued that in markets with a heterogeneous demand, buyer evaluations of bundles vary significantly depending on which item is featured as the price leader. Yadav (1995) noted that when two unequally preferred items are evaluated for purchase as a set, the bundle evaluation was improved when the price leader was also the preferred item of the bundle.

Moreover, Yadav (1990) hypothesized that buyers combine perceived savings on items and perceived additional savings on the bundle to form perceptions of overall savings in a bundle. In the same vain, Yadav and Monroe (1993) examined the buyer's perceptions of overall savings when they evaluated a bundle offer, and found that buyers are more likely to react adversely to an absence of savings on a bundle than to an absence of savings on individual items. The buyer's prior intentions to purchase or not to purchase certain items in a bundle could influence the evaluation of total savings on the bundle (Rajneesh and Monroe 1999).

Furthermore, Wuebker et al. (1999) found that under certain market conditions, the effectiveness of bundling strategies is considerably diminished. Wuebker et al. (1999) argued that consumers tend to buy the bundle when the price advantage of the single items over the bundle is low and when it is difficult to find these individual items on sale. This is consistent with Estelami (1999) who found that consumers saved an average of 8% in a sample of 480 complementary bundled items that included fast-food meals, photo equipment and personal computers.

**Effects of Price Variations**

Mazumdar and Jun (1993) argued that buyers compare prices of multiple products with their respective internal reference prices. Consistent with Thaler's (1994) Mental Accounting Theory that suggests that individuals prefer to segregate gains and integrate losses, Mazumdar and Jun (1993) found that consumers respond more favorably to multiple price decreases of the individual items of a bundle than a single price decrease of the bundle. Multiple price increases of the individual items of a bundle are evaluated more unfavorably than a single price increase of the bundle.

Using Thaler's (1994) Theory, Johnson et al. (1999) conducted an experiment with 360 automobile buyers in Munich, and found that customer satisfaction, willingness to recommend, and repurchase intentions were higher when the distributor bundled items for sale and integrated pricing information into a package, compared to the same pricing information presented in an unbundled format. Also, using Thaler's (1994) Theory, Kaicker (1993) studied the psychological explanation behind the issue of consumers' choice between a bundle and purchasing the bundle components separately. Consistent with Thaler's (1994) Theory, Kaicker (1993) found that consumers prefer viewing multiple gain outcomes separately and, in situations of mixed gains and mixed losses, consumers prefer bundled purchases to separate purchases. However, contrary to Thaler's (1994) Theory, Kaicker (1993) found that the majority of the buyers preferred to segregate their purchases when faced with a multiple loss scenario.

**Preferences and Effects of Bundled and Unbundled Options**

Ramnarayan (1994) investigated the consumer incentives for bundled and unbundled options and found that consumer knowledge and perceived time pressure explain the consumer's preferences for the two options. High knowledge consumers prefer unbundled options whereas low knowledge consumers prefer bundles. Perceived time pressure has a positive effect on the consumer's preference of bundled options.

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TABLE 2

CUSTOMER'S APPROACH: MARKETING RESEARCHERS CONTRIBUTIONS TO PRICE BUNDLING

<table>
<thead>
<tr>
<th>Author</th>
<th>Contribution</th>
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<tbody>
<tr>
<td>Yadav (1990)</td>
<td>First in taking a customer's approach. Examined how buyers evaluate a bundle of items and how perceptions of savings are formed in the context of a bundle offer.</td>
</tr>
<tr>
<td>Kaicker (1993)</td>
<td>Finds that consumers prefer bundled individual items purchases.</td>
</tr>
<tr>
<td>Mazumdar and Jun (1993)</td>
<td>Find that multiple price decreases of a bundle are evaluated more favorably that a single price decrease and that the contrary is true for price increases.</td>
</tr>
<tr>
<td>Yadav and Monroe (1993)</td>
<td>Find that buyers react more adversely to an absence of savings on a bundle than on an absence of savings on individual items.</td>
</tr>
<tr>
<td>Ramnarayan (1994)</td>
<td>Finds that high knowledge consumers prefer unbundled options whereas low knowledge consumers prefer bundled options. Bundles are evaluated as more convenient.</td>
</tr>
<tr>
<td>Yadav (1994)</td>
<td>Finds that individuals examine bundle items in a decreasing order of perceived importance and make adjustments to form their overall evaluation of the bundle.</td>
</tr>
<tr>
<td>Yadav (1995)</td>
<td>Finds that consumer's evaluations of bundles depend on items alleged as price leader.</td>
</tr>
<tr>
<td>Harris (1997)</td>
<td>Develops a conceptual model of the consumer's underlying reasons for differences between the perceived value of a bundle and its separate items. Proposes that bundling can change consumer's perceptions of costs and utility of individual items.</td>
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<td>Morwitz et al. (1998)</td>
<td>Found that partitioned pricing decreases consumer's recalled total price and increases demand.</td>
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<td>Puri (1998)</td>
<td>Found that sellers bundle focal with ancillary items to increase sales of focal items.</td>
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<tr>
<td>Johnson et al. (1999)</td>
<td>Finds that customer's satisfaction, re-purchase intentions, and positive word-of-mouth increases when price information is bundled and discounts information is unbundled.</td>
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<tr>
<td>Rajneesh and Monroe (1999)</td>
<td>Finds that prior intentions to purchase items of a bundle influence the consumer's evaluation of the total savings of the bundle.</td>
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<tr>
<td>Webker et al. (1999)</td>
<td>Finds that consumers tend to buy a bundle when consumers perceive that it is difficult to find individual items on sale.</td>
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<tr>
<td>Hadjicharalambous (2001)</td>
<td>Proposes a conceptual model for brand bundling and finds that consumer's evaluations of bundles depend on the degree of congruity of bundle items.</td>
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<tr>
<td>Naylor and Frank (2001)</td>
<td>Conducted a longitudinal study in vocational resorts and found that all-inclusive price packages increase the perception of value of time-first consumers.</td>
</tr>
<tr>
<td>Soman and Gourville (2001)</td>
<td>They predict that price bundling leads to a decupling of transaction costs and benefits, thereby reducing consumer's attention to sunk costs.</td>
</tr>
<tr>
<td>Stremersch and Tellis (2002)</td>
<td>They differentiate price bundling form product bundling and propose several bundling strategies that depend on organizational and customer variables.</td>
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</table>
In the same vain, Harris (1997) studied how bundling affects consumers' perceptions of value and probability of choice. Harris (1997) developed a conceptual model to examine the underlying reasons for differences between the perceived value of a bundle and its separate components. Harris (1997) argued that the preference for a bundle is related to the buyer's motivation to process information, its product knowledge, risk perception, price information, familiarity of the buying situation, and the stage in the shopping process. Harris (1997) contended that the consumer's positive feelings toward a new product are greater when it is bundled with a well-regarded product.

Similarly, Naylor and Frank (2001) studied the effects of all-inclusive price bundling on first-time and repeat guests of an all-inclusive resort/spa and found that first-time guests not receiving an all-inclusive package diminish their perceptions of value. This effect was not found on repeat guests.

Soman and Gourville (2001) investigated the effects of price bundling on the post-purchase consumption of multi-performance services. Soman and Gourville (2001) argued that a consumers' likelihood of attending a prepaid multi-performance service depends on whether the price of a multi-performance service was bundled or unbundled. The likelihood of a consumer of attending a performance is higher when the price of the multi-performance service was unbundled rather than bundled. The rationale for this phenomenon is found in Soman and Gourville's (2001) transaction decoupling theory. The transaction decoupling theory suggests that price bundling leads to a "psychological disassociation, decoupling, of transactions costs and benefits, such that costs become less relevant to the consumption decision" (Soman and Gourville 2001, p. 32).

Price and Product Bundling

Stremersch and Tellis (2002) differentiated between price and product bundling. Stremersch and Tellis (2002, p. 56-57) defined price bundling as "the sale of two or more separate products in a package at a discount, without any integration of the products," whereas product bundling is defined as "the integration and sale of two or more separate products or services at any price." Stremersch and Tellis (2002) argued that price bundling is a pricing and promotional tool, whereas product bundling is a strategy designed to create additional value for the consumer.

Stremersch and Tellis (2002) proposed a two-dimension taxonomy of bundling that includes the focus of bundling (price or product) and the form of the bundle (pure or mixed). Also, Stremersch and Tellis (2002) examined the legal literature on bundling, and argue that federal laws contain two principles for examining the legality of bundling, the per se rule and the rule of reason. Under the per se rule, bundling is illegal when it involves "(1) pure bundling (2) of separate products (3) by a firm with market power and (4) when a substantial amount of commerce is at stake" (Stremersch and Tellis 2002, p. 58). However, under the less stringent rule of reason, bundling is illegal when it involves "(1) pure bundling (2) of separate products (3) by a firm with market power, (4) involving a substantial amount of commerce, (5) which poses a threat that the bundling firm will acquire additional market power over at least one of the products that is bundled with the tying product, and (6) no plausible consumer benefits offset the potential damage to competition" (Stremersch and Tellis 2002, p. 58-59).

In summary, marketing researchers have found that consumer's perceptions of the savings of the bundle, the evaluation of the item perceived as the most important, and attitudes towards the bundle items, affect consumer's purchase intentions. Also, high knowledgeable and expert consumers are more likely to prefer unbundled options, compared to less knowledgeable and novice consumers.

PRACTITIONERS APPROACH

Literally hundreds of articles that discuss the issue of price bundling are found in both practitioner outlets and in the popular press. The articles examined in this section are grouped under three main categories: discussions of the legality of bundling, advantages of bundling to the firm, and advantages of bundling to the consumer.

Legality of Bundling

Bundling faces legal problems and restrictions. Both Microsoft (2001) and IBM (1963, 1969) have fought the most highly publicized bundling legal battles. Several articles have discussed the legal battles between Microsoft Corp. and the US Department of Justice, regarding the bundle of Microsoft's Internet Explorer web browser with Windows operating systems.

Bundling legal battles have extended from the computer and software arena to the communications industry and other industries as well. For example, a lawsuit, filed April 5, 2002 in U.S. District Court for the Southern District of New York, accused AT&T Wireless, Verizon Wireless, Voicestream Wireless Corp. and Sprint Corp. of restraining competition among carriers and elevating market prices by bundling handsets with wireless service plans and forcing consumers to purchase a handset from a certain carrier or a carrier's authorized sales representative (Marek 2002). Also, in February 20, 2002, the Wall Street Journal reported that the European Court of Justice has decided to ban the bundling of accounting of legal services, a practice that already exists in the US. The article mentions that after the Enron Corp. scandal, the US Congress has questioned whether Andersen might have had an incentive to ignore questionable Enron accounting for fear of losing lucrative consulting work. Currently, bundling accounting and consulting services is legal in US and in the European Union.
Advantages of Bundling to the Firm

Wuebker (2002) argued that by creating bundles, companies have one of the most powerful weapons for positioning themselves as premium providers or products or services. For some utility companies, bundling their services with other service providers has been a matter of survival. For example, after deregulation both gas and electric utility companies are looking for new approaches for keeping their existing customers and to search for new ones (Katz 1997). Some gas and electric utility companies are offering a bundle that includes electricity and gas to its consumers. Other companies are bundling utilities with long-distance telephone providers, local telephone companies, Internet providers, and cable television firms. This trend may explain the recent mergers and acquisitions involving gas and electric utilities. For example, EnergyOne LLC, an alliance of UtiliCorp United Inc. and PECO Energy Co., signed agreement contracts with AT&T residential communications and AT&T Solutions, to provide a bundle of goods that includes energy, gas, residential communication and back-office services to its customers (Katz 1997). Also, bundling may explain AT&T 20-year agreement with Time Warner that gives AT&T exclusive access to Time Warner cable systems (Katz 1997).

Advantages of Bundling to the Consumer

Bothorthic (2000) argued that consumers receive bundled service offers from practically all communication providers and contended that consumers are paying for bundled services about 25% less of what they would pay for the sum of the individual items. However, the main problem that service providers face is that of matching consumer requirements with a bundle of services.

Similarly, Epplen et al. (1991) argued that consumers buy bundles of satisfactions rather than products. Hence, the problem that firms face is discovering the bundles that are both attractive to the consumer and provide cost or demand benefits to the supplier. For this purpose, Epplen et al. (1991) suggested that the firms' best approach is to treat and market bundles as new products. Epplen et al. (1991) proposed several bundling guidelines such as: targeting the bundle for an aggregate market while offering highly individual items to unusual customer segments; creating all-inclusive bundles when demand is strong, and multiple smaller bundles when demand is weak; using bundling to increase consumer switching costs; using pure bundling when components perform better than separately; and, using bundling for new product categories, as this helps consumers understand the full range of product and service benefits.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

In sixteen-years of research, marketers have significantly expanded the body of knowledge of price bundling. From the studies conducted between 1986 and 2002, we now know the following:

1. Bundling is beneficial for both the firm and the consumer.
2. Price bundling is a feasible and profitable strategy in monopolistic and competitive market environments.
3. Price bundling strategies are widely used in the computer, software, communications, and tourism industries.
4. Several models are available for calculating the number of items and prices that maximize firm's profits.
5. For both legal and economic reasons, mixed bundling strategies are preferred to pure bundling strategies.
6. Consumer demand elasticity for the individual components of a bundle (and cross-elasticities of the individual items) influence the success of a price bundling strategy.
7. Consumers anchor their evaluations of the items perceived as more important, and then make adjustments on basis of their evaluations of the remaining items of the bundle.
8. The bundling format (i.e., how price information is presented) affects buyer's price, values, attitudes, and savings perceptions.
9. Consumers are likely to respond more favorably to multiple price decreases of individual items of a bundle than a single price decrease of the bundle.
10. Consumer knowledge and expertise with the product/service affects the perception of the bundled and unbundled options. High knowledgeable and expert consumers are more likely to prefer unbundled options compared to less knowledgeable and novice consumers.

Although what we know about price bundling is significant, the following research questions still need to be addressed:

1. Are product and price bundling possible explanatory variables of firm's mergers and acquisitions?
2. How can product and service providers design bundles of goods that are attractive for both the buyer and the firm?
3. What is the consumer reaction to bundles of products and services that include multiple brands of multiple companies?
4. How do consumers react to bundles of products and services that include both desirable and non-desirable items?
5. How do consumers process price and non-price information in the evaluation of bundles of products and services?
6. What are the most efficient ways to use price bundling as a promotional tool?
7. How effective are price bundling strategies for the introduction of new products and services?
8. What is the role of price bundling on price competition?
9. How should firms design price bundling strategies for the business-to-business markets?
10. What are the main advantages and disadvantages of marketing a bundle of products/services as a "single-product" rather than marketing its individual components?

Due to the beneficial effect of price bundling for the firm and the consumer, firms may use price bundling strategies as a source of competitive advantage. Hence, research in price bundling has both managerial and theoretical implications.

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