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The role of bundling in firms' marketing strategies: a synthesis

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The role of bundling in firms' marketing strategy: a synthesis

ABSTRACT
Bundling and unbundling, i.e. selling by combining a number of products into a package or by separating them, are central elements in corporate strategies. Most existing research papers, in various fields, offer a fragmented analysis of these phenomena. This paper puts these contributions into perspective so as to gain a broader understanding of the advantages of bundling and unbundling in marketing strategy.

Keywords: Bundling, unbundling, bundle, decomposition, consumer heterogeneity, prospect theory, market structuring.

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INTRODUCTION

The sale of several products[1] in the same package or set, known as bundling[2], is a familiar practice: from "all inclusive" holidays to cinema subscriptions and fixed price menus in restaurants, bundles – we use the term "bundle" in this paper rather than package or combined sales to define a basket of goods – are ubiquitous. At the same time, products traditionally sold as a package (a music album, for example) are now tending to be sold separately, on an individual basis. Bundling and unbundling – the linking and separation of products – are central elements of corporate strategies.

These strategies have been the focus of many studies in economics, marketing and experimental psychology. During the 1970s and 1980s, economists were interested in them in the context of antitrust issues: it was a matter of understanding in what respects bundling strategies were profitable and, since they may reduce consumer choice while offering certain advantages, of knowing under what circumstances they might be permitted by the competition authorities. Marketing addressed the phenomenon in the late 1980s, with a more operational focus. What pricing policy should be adopted when products are bundled? How many products should be included in the basket? The methods used in economics and marketing were essentially the same: modeling and econometrics. More recently, another methodology has been developed: experimentation. Closer to psychology, such research seeks to test the hypotheses used to construct the previous models, as well as their conclusions. It is then a matter of bringing to light a number of biases in consumers' assessment of bundling offers. Today, in marketing, the majority of contributions are experimental in nature and designed to measure the effects of different bundling strategies. This research is quite scattered, with economists, marketers, psychologists and legal experts engaging in little by way of mutual dialogue.

[1] The term "product" is used here in its generic sense. It variously covers covers goods, services or a combination of the two.

[2] The choice of the term "bundling" is justified by the fact that it is a generic term that covers both "grouped sales" and "tying". Moreover, the notion of grouped sales gives a much too operational emphasis to the subject (sales), whereas the issues addressed in the context of bundling just as much concern strategy.

In 2002, Stremersch and Tellis (2002) presented an overview of the research field. Since then many further studies have been published, and in any case their paper did not address the limitations of bundling and the possible advantages of unbundling. It is therefore important to update and add to their study. Like Stremersch and Tellis (2002), our contribution is positioned in terms of the companies' marketing strategies. This approach is justified by the fact that bundling has long been studied from an operational standpoint – how are products bundled? at what price? how are they retailed? – while its strategic dimension has often been ignored. A more comprehensive approach to bundling, incorporating both its strategic and operational aspects, will necessarily be richer in terms of understanding this phenomenon. Furthermore, rather than present what has been done in the various disciplines taken singly (economics, marketing, etc.), it seems more fruitful and instructive to address the three main questions that arise in relation to bundling.

(a) How does such a strategy confer a competitive advantage?
(b) To what extent does it allow a firm to define to its advantage the boundaries of the markets in which it operates?
(c) What are the limitations of such a strategy and under what circumstances is unbundling a preferable option?

These questions will serve as guidelines for putting the role of bundling in firms' marketing strategies into perspective. To this end, the paper will be structured in five sections. (1) Before looking at the answers to these questions given by the various disciplines, we will discuss the various definitions and conceptualizations of bundling that have been put forward. The term is often misused, and it is therefore necessary to precisely define its contours, by means, among other things, of typologies. On that basis, we then address the three questions listed above. (2) As a first step, it is a matter of understanding how bundling can increase a company's competitive advantage, mainly by differentiating its offering. (3) We then show how various studies have sought to reveal the impact of a bundling strategy on the redefinition of markets. (4) The fourth section looks at work that has shown the possible limitations of bundling in marketing strategies. (5) In the concluding section, we consider the various ways in which the contributions of bundling in the development of marketing strategies have been studied.

1. A multitude of definitions and conceptualizations of bundling

The term "bundling" is misleading insofar as it gives a false impression of simplicity and uniqueness. In reality the situation is much more complex: not only are there different forms of bundling, there are also different definitions of the term. The aim of this section is to clarify what is in fact covered by the term.

1.1. A problem of definition

Bundling was briefly defined in the introduction as the sale of several products in a single package. But this definition raises a semantic problem. For if the term were strictly applied, any object could be a "bundle": a pair of glasses, for example, would be a package consisting of a frame and lenses. It is clear, therefore, that there is a real problem in defining bundling and especially its boundaries.

The first work on the bundling dates from the mid-1970s with the seminal paper of Adams and Yellen (1976). These authors define it as the act of "selling goods in packages". While this definition has the merit of being simple, there is a degree of haziness around the notions of "goods" and "packages". In the 1980s, Guiltinan (1987) introduced a further notion, namely price. In his view, bundling is "the act of marketing two or more products and/or services in a single package for a special price." [p. 74]. The underlying idea is that of the reductions given when a customer buys several products at the same time. Yet this is not always the case, since bundling does not necessarily entail a price reduction. Yadav and Monroe (1993, p. 350) emphasize the notion of "tying" when discussing bundling: "the selling of two or more products and/or services at a single price." Again, the issue of price arises: according to this definition, there is solely a price for the bundle and not for the products separately.

The question of the definition of bundling was not the main concern of these authors. For them, it was simply a matter of establishing a brief framework in the introduction before going on to a mathematical proof of the superiority of bundling. However, this type of reasoning could result in any object being viewed as a bundle, as we have seen. For some authors, such as Salinger (1995), a pair of shoes equates to a bundle, since there is a right shoe and a left shoe. This inclusive approach, however, loses all the specificity of the notion of bundling and is therefore problematic.

Stremersch and Tellis (2002) aimed to provide a more rigorous definition. For them, bundling is "the sale of two or more separate products in one package" [p. 55]. The concept of price disappears, but another much more important notion emerges, that of "separate products". In their view, there can only be bundling between products that have independent markets. A pair of shoes is not a bundle because there is no market for the right shoe or the left shoe independently of each other. On the other hand, for a journey comprising "flight + hotel + car rental", there are markets for each of the products making up the bundle. Note however that the separation of markets must be studied from the standpoint of consumers – can consumers purchase one of these products separately? – not that of the business (corporate structure).

The most relevant definition, in our view, is the one given by Stremersch and Tellis (2002), i.e. "the sale of two or more separate products in one package". It places the emphasis on strategy in its dynamic dimension: it involves combining two (or more) existing products hitherto marketed separately.

1.2. A provisional typology

This straightforward definition should not, however, hide the complexity and diversity of the phenomenon. Establishing a typology needs therefore to be attempted. It can be done on the basis of different dimensions: the distinction between price and product in the offering, as well the strategies pursued.

- ***Price bundling and product bundling***

The distinction between "price bundling" and "product bundling" lies in issues of pricing and integrating the offering.

Price bundling can be defined as "the sale of two or more separate products at a discount, with no integration of the products" (Stremersch and Tellis, 2002, p. 56). It is simply a reduction given to the customer when purchasing several products at once, without them having been designed to be integrated with one another. From a microeconomic point of view, with no integration of the offering, the reservation price for the bundle is the sum of the reservation prices of the various components. To encourage the customer to buy the package, a reduction needs to be made. A typical example of price bundling is selling ten cinema tickets at a discounted rate. The various films were not designed to be seen in the same year (there is thus no integration), but the subscription enables the purchaser to get a discount on ticket prices.

Within price bundling, there is a sub-category. Guiltinan (1987) distinguishes "mixed-leader bundling" and "mixed-joint bundling". What is the difference between them? In mixed-leader bundling, the price of product A is reduced if the consumer buys the product B at the same time. It is therefore known on which item the reduction is made. With mixed-joint bundling, by contrast, there is a reduction when two items are purchased at the same time, but one does not know on which product(s) the reduction has been made.

Unlike price bundling, "product bundling" is based on the idea of complementarity between the products, since it can be defined as "the integration and sale of two (or more) separate products in a package, at any price" (Stremersch and Tellis, 2002, p. 57). This approach is radically different from the previous one, since it is considered that the integration of products will create value for customers, for example by reducing the risk of incompatibility (Telser, 1979). It is not necessary to reduce the price of the bundle, and it can even be raised, to the extent the products are integrated (Mantovani, 2010). Product

bundling can thus be viewed as an "integral architecture" (Ulrich and Eppinger, 1995) which incorporates the various functions of the bundled products into a single package. For example, the Microsoft Office software suite is a product bundle, since the software comprising it has been designed to be mutually compatible.

- ***Unbundling, pure bundling, mixed bundling***

Another dimension that can distinguish types of bundling pertains more directly to strategy. Companies not only sell products individually, but also in packages. It is therefore necessary to distinguish between the different types of marketing strategy, when bundling is used.

Schmalensee (1984) distinguishes three such strategies:

- Unbundling: the firm sells and prices its products solely on an individual basis.
- Pure bundling: the firm sells its products solely as a bundle, never separately.
- Mixed bundling: the firm sells and prices its products both as a bundle and separately.

These strategies are based on different logics (which we will discuss later). Schmalensee (1984) summarizes the logic of pure bundling and mixed bundling as follows: "The advantage of pure bundling is its ability to reduce effective buyer heterogeneity, while the advantage of unbundled sales is its ability to collect a high price for each good from some buyers who care very little for the other. Mixed bundling can make use of both these advantages by selling the bundle to a group of buyers with accordingly reduced effective heterogeneity, while charging high markups to those on the fringes of the taste distribution who are mainly interested in only of the two goods" [p. 227]. Schmalensee prioritizes these different strategies, and concludes that mixed bundling is the most appropriate strategy if consumers have very heterogeneous preferences.

Although highly effective, mixed bundling is not always the best solution. Ibragimov and Walden (2010) show that under certain distributions of consumer preferences (heavy-

tailed distributions), mixed bundling is not the optimal strategy. Furthermore, from an operational standpoint, mixed bundling is difficult to implement. For if a firm sells K different products, it needs to set 2^K-1 different prices. Chu, Leslie and Sorensen (2011) thus propose adopting simpler pricing, "bundle-size pricing", which involves setting a price for each bundle size. In other words, a single price is set for bundles containing a single product, a price for all bundles comprising two products, a price for bundles of three products, etc. Less complex to implement (since only K different prices need to be set), this strategy results in profit levels very close to those from mixed bundling.

In this part the objective has been to precisely define the terms that we will use in this paper. Though the term "bundling" is often used generically, it is important to specify its type in each particular case (price bundling, product bundling, etc.). For it is in relation to these frameworks that bundling can allow an effective marketing strategy to be defined. Such a strategy will be based on the idea of building a competitive advantage.

Table 1: Examples of different types of bundling

Price bundling vs Product bundling	
Price bundling	A book of metro tickets
Product bundling	A "flight + car rental" trip
Unbundling vs Pure bundling vs Mixed bundling	
Unbundling	DVDs sold individually
Mixed bundling	A "computer + printer" package, which can be sold either as a bundle or separately
Pure bundling	Colored pencils

2. The appropriateness of using bundling to gain a competitive advantage

How can bundling help create a competitive advantage for a firm that uses it as a marketing strategy? Bundling is a strategic tool that can change consumer behavior. In doing so, it allows a greater surplus to be extracted from the consumer than that obtained

when the products are sold separately. This section therefore aims to understand how bundling can contribute to the development of a firm's marketing strategy for gaining a competitive edge.

2.1. Bundling for managing consumer diversity

Consumers are highly varied. Some are ready to spend more than others for a car or a vacation. This heterogeneity of consumer tastes is modeled by a "distribution of reservation prices", where the reservation price is the maximum price that someone is willing to pay to acquire the product.

Given this diversity, Stigler (1963) was the first to demonstrate the value of using bundling. By considering two consumer segments (1 and 2) and two products (A and B), he showed that if segment 1 prefers A to B and segment 2 prefers B to A, then it will be more profitable for the company to sell products A and B in the form of a bundle. This bundle will allow the company to capture a larger portion of the consumer surplus, by playing on the asymmetry of preferences. Stigler (1963) used this configuration to demonstrate that a film distributor could increase its profits by refusing to distribute its films individually, and choosing instead to distribute in packets comprising several films. In this instance, what makes the bundling profitable is the negative correlation of reservation prices for different films, whereas the evaluation for all of them is similar.

Adams and Yellen (1976) followed up Stigler's work, increasing the number of consumer segments. The increased number of segments allows the analysis to be refined and thus have more varied consumer profiles. It then becomes apparent that it is preferable to provide extreme consumer profiles with individual components, while targeting the bundle at mid-range consumers. These authors thus came to the conclusion that the best strategy is to adopt mixed bundling.

Along the same lines, the work of Schmalensee (1984) no longer considered discrete distributions, as in the previous studies (i.e. with a finite number of segments), but

continuous distributions (with an infinite number of segments). Schmalensee (1984) came to the same conclusion as Adams and Yellen (1976), namely that mixed bundling is the most appropriate strategy.

This work as a whole reveals the relevance of a bundling marketing strategy in the presence of heterogeneity in consumer preferences. The implementation of a mixed bundling strategy seems to be the best solution for companies wishing to obtain the maximum surplus from their consumers. What pricing strategy should such companies therefore adopt?

2.2. Changing the perception of product prices

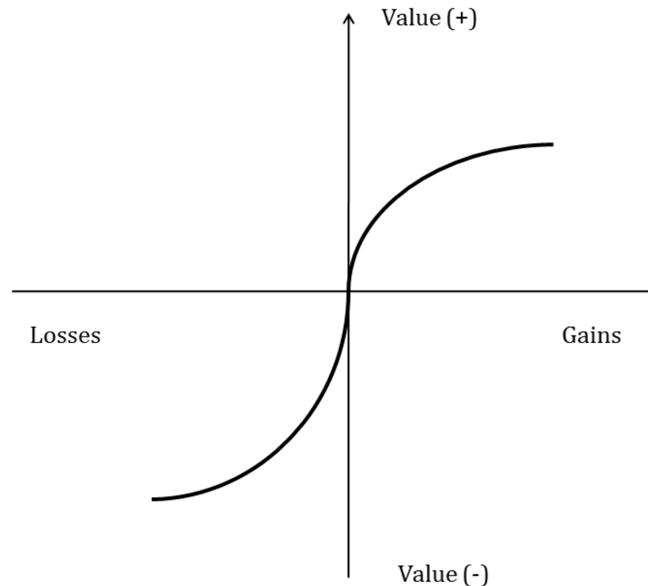
There is an extensive literature on how to optimally set the price of a bundle. Two of the most cited contributions are those by Hanson and Martin (1990) and Venkatesh and Mahajan (1993). These two papers are based on optimization subject to constraints (cost, preferences, etc.), so as to determine the optimal bundle price that maximizes the firm's profit.

But it is not this part of the literature that is most interesting from the standpoint adopted here. Indeed this next section will address issues of perception of bundle pricing. As was mentioned in the introduction, part of the literature on bundling draws on psychology and the analysis of heuristics.

The model structuring this type of work on bundling was originally developed by Kahneman and Tversky (1979). These two authors reveal a number of biases in the analysis of gains and losses, especially in a risky environment. It appears that people do not evaluate gains and losses in the same way, and in particular perception of the magnitude of gains (or losses) is biased. In other words, gaining 10 euros twice or gaining 20 euros all at once will not affect the person in the same way, even though the total gain is the same. The same applies to losses. Analysis of this bias has led to the development of what these authors call "prospect theory", explaining alternative choices

in risk situations. They thus create a value function, which is concave for gains and convex for losses. Furthermore, as Thaler (1985) points out, the slope of this value function is steeper for negative deviations in relation to the reference point than for positive deviations, which is consistent with the observed fact that losses have more impact than gains of the same magnitude.

Figure 1. Representation of the "value function" derived from "prospect theory" (inspired by Kahneman and Tversky, 1979)



Prospect theory provides a particularly interesting framework. According to Yadav (1994), purchasers evaluate bundles on the basis of a logic of anchoring and adjustment: they first evaluate the core product (or the one that is most important to them), and then adjust their evaluation by considering the other products in the bundle. The notions of gain and loss, found in the Kahneman and Tversky (1979) model, thus recur.

This approach is relevant to understanding how prices should be presented in bundles. The strategic question is the following: Should there be a single price for the entire bundle, or should the price be decomposed? According to prospect theory, for an

equivalent offering, price decomposition will be perceived as a number of small losses, which will be perceived more negatively than one big loss. It is therefore preferable to have a single price for the entire bundle (Johnson, Herrmann and Bauer, 1999). Conversely, when a price reduction is made on the bundle (for example, a reduction of 10%), breaking down the reduction into a sub-reduction for each product will increase purchase intent.

Although these results have been empirically tested (see Johnson, Herrmann and Bauer, 1999), there are some limitations. For example, Chakravarti et al. (2002) emphasize a phenomenon they call "selective focus", an effect that stems from the fact that decomposition will highlight certain products in a bundle, thereby focusing consumers' attention on the price of this product.

Bundling is therefore a particular way of presenting products. It allows certain products to be highlighted and can be used to sell products that have not found outlets in other circumstances.

2.3. Creating value by product integration

The distinction between a combination pertaining to the price (price bundling) and a combination pertaining to the product (product bundling) was introduced earlier. The latter is based on a logic of supply integration, i.e. the linking of separate products. For example, selling a Dolby Surround audio system together with a large screen involves product bundling, since the consumer will enjoy movies viewed on his big screen all the more if he has a decent sound system.

The incorporation of products in a bundle can therefore create value. Indeed, as noted by Ancarani and Shankar (2003), there is greater demand by consumers for offerings that include products from several industries. Hence firms are obliged to create value through bundling, involving inter-market partnerships, to reach more customers and increase their loyalty.

There is therefore real demand for complementarity among the products of a bundle, and customers are also willing to pay more to take advantage of this integration (Mantovani, 2010). With reference to Telser (1979), Hanson and Martin (1990) explain that "Complementarity between components yields a valuation for the bundle which is superadditive, and this clearly enhances the chances that bundling is profitable" [p. 156].

How is such value creation to be explained? There is firstly the fact that integration will create systems and solutions, somewhat along the lines of "integral architecture" (Ulrich and Eppinger, 1995). Another complementary approach views bundling as a way to reduce search cost and ordering costs, as defined by Sharpe and Staelin (2010). Harris and Blair (2006) show that the reduction of search costs through integrated bundling results in an increase in consumers' willingness to pay. For example, a consumer will be willing to pay more for a package vacation, rather than having to arrange all the components himself. This tendency is even more pronounced when consumers are unfamiliar with the product and are afraid of possible incompatibilities (Harlam et al., 1995). Finally, the added value associated with bundling can be explained through the notion of consumption experience (Carù and Cova, 2006). If we take the example of the package vacation, the experience is totally different from that of a trip by oneself: full support, group dynamics, no organizational worries, and so on. Some people greatly value these features and are therefore willing to pay a higher price for the bundle.

2.4. Changing purchase intention and consumer behavior independently of the issue of price

If bundling can change the perception of the price of a product, it is also able to alter the perception of the offering as such. Indeed, bundling may result in changed customer purchasing behavior, to the advantage of the company. In this section, three phenomena will be studied in detail: the adoption of innovations, changing the image of products, and changing how products are used.

The question of the adoption of innovations by consumers is a recurrent issue for enterprises. According to Reinders, Frambach and Schoormans (2010), bundling can facilitate the adoption of radical innovations. Drawing on a number of cases, they show, for example, that the intention to purchase a digital pen increases if it is bundled with a computer rather than sold separately. The principle involves combining the innovation with existing products so as to facilitate the consumer's understanding of it and more easily imagine how it may be used. This linkage reduces reluctance to purchase the innovation and improves knowledge about it. However, the authors qualify this finding in noting that the components of the bundle must be fully compatible, otherwise bundling will have the reverse effect.

A significant number of bundles are the result of alliances between several different firms (Armstrong, 2010) and involve multi-brand packages, also termed "between-brand bundles" (Simonin and Ruth, 1995). In this particular case, effects may arise from linking the products, which can affect the brand image of the components. Let us consider why. Sheng and Pan (2009) look at the case of the introduction of a new product. It can either be launched independently or introduced to the market as part of a combination. Suppose now that this product belongs to a brand little known to the public. Drawing on categorization theory, Sheng and Pan (2009) show that the brand image of the new product will be positively affected if it is introduced as part of a bundle with a product having a strong brand. Taking the example of DVD players, they argue that it is better to introduce a DVD player from a little known brand bundled with a Sony TV than with a TV of a "weak" brand. The bundling makes it possible to change the image of products and consumer attitudes toward the new product.

Once the purchase has been made, bundling will also affect how the product is used. Although the literature largely focuses on the effects of bundling on purchasing, some studies have gone further by observing consumer behavior. This aspect is very important. Venkatesh and Mahajan (1993) show that consumers estimate their likelihood of consuming the components of the bundle and that, depending on the probability, they may deduce the price they are willing to pay. But more specifically, what is interesting

here is not so much the estimation of consumption but the actual consumption of the products in the bundle. Soman and Gourville (2001) look at the following phenomenon: bundling reduces the consumption of the components, even though they have been paid for by the consumer. How is this phenomenon to be explained? The authors draw on the theory of "sunk costs" (Thaler, 1985) to show that bundling will tend to reduce the customers' perception of sunk costs, and therefore leads to wastage of some of the components. Bundling will result in the purchaser not necessarily using all the products in the bundle, since he will tend to underestimate the cost of its non-use. This effect is very advantageous for companies, particularly in services such as gym or cinema subscriptions, for which they can adopt overbooking policies. Indeed, in such instances the company succeeds in billing for a service that costs it nothing. Bundling therefore increases the margin per customer.

We have just seen how bundling allows companies to influence consumer behavior to their own advantage. It is then a matter of modifying, by means of bundling, such behavior both upstream and downstream of purchase.

2.5. Reducing costs and improving quality through bundling

So far we have looked at bundling from the standpoint of the consumer. If we now adopt a different approach, another part of the literature on bundling shows how it affects the operation of the business, by reducing costs and improving product quality.

Bundling can reduce a company's costs in two ways, firstly by sharing fixed costs, made up of distribution costs and packaging costs (Evans and Salinger, 2005). The pooling of these fixed costs will reduce the unit cost of each product.

Secondly, bundling is a way of rationalizing production and thus increasing efficiency. Considering a car as a bundle of options, and taking the example of Chrysler in the 1980s, Eppen, Hanson and Martin (1991) explain that prior to setting up bundling offerings, it was possible to create more than eight million combinations (depending on

the various options) for a single car model. Chrysler therefore decided to implement a bundling strategy, creating 42 different bundles and in each case combining a number of options. This strategy enabled the company to reduce its production costs by €2 million a year. Rationalization of the offering by means of bundling is therefore a way of reducing costs and increasing the efficiency of a business. However, this argument tends to lose its relevance with the development of faster and more flexible production processes, allowing increasingly personalized production (Gratacap and Médan, 2009).

Bundling can also function as an incentive to improve the quality of a company's products (Dana and Spier, 2009). Since consumers have imperfect knowledge of product quality, they cannot rely solely on their own experience. Moreover, Dana and Spier (2009) argue, when a consumer encounters a defective product, he may often view the entire product line as defective. Yet bundling increases the probability that a consumer encounters a defective product and it therefore encourages companies to improve the quality of their products.

Throughout this second section, the focus has been on how bundling offers companies the opportunity to develop a competitive advantage. Several mechanisms may be used, but all give an advantage to the firm that adopts a bundling strategy. Our discussion on the pertinence of bundling strategies has mainly focused on the company and its internal resources. Yet it is possible to adopt a different point of view, by trying to understand how bundling structures the relations between a company and its competitors. This will entail, among other things, showing how bundling will allow a company to change the boundaries of its market in its favor.

3. The relevance of a bundling strategy for structuring the market in the company's favor

It is easy to see that the concepts of bundling and market boundaries are closely linked. If the bundle comprises products in the same market (e.g. a season of opera tickets), the market boundaries will not shift. However, if the bundle includes products from different

markets (e.g. tickets for operas and exhibitions), then the company's market boundaries will change. In this section, therefore, we will examine the role that bundling can play in structuring a company's market structure.

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3.1. Defining a new product's reference market

When introducing a new product, it is necessary to establish its reference market. Companies therefore use concepts such as positioning to give the product a special place in consumers' minds (Dubois, 1977). Nonetheless, there is often a mismatch between the company's intended market and the way the market evolves in reality. Bundling is a way of reducing this discrepancy.

Simonin and Ruth (1995) accordingly looked at the introduction of a new product in the context of bundling. The sale of this new product in combination with a "main" product allows the consumer to link the new product to the reference framework of the main product. Such a strategy fixes, in the mind of the consumer, the market in which the new product will evolve. Similar conclusions were drawn by Sheng and Pan (2009). Using the categorization theory and the ELM model (Elaboration Likelihood Model, developed by Petty and Cacioppo (1986)), they describe and test the phenomenon of attaching a new product to an existing market in the context of bundling.

A similar logic is found in work on co-branding (Cegarra and Michel, 2000, 2001), that is to say, the association between two different brands for one or more products. Co-branding allows each brand to benefit from the each other's reference market and thus from linking the product to another market. Although a parallel with bundling may be drawn, it is only a distant parallel, since there is only one good. At most, one could say it is a matter of a "bundle of brands".

This strategy is thus a way for the company to establish the market in which it intends intervening.

3.2. Creating comprehensive offerings that are hard to compete with

In the preceding sections we stressed the difference between price bundling and product bundling. Product bundling is based on the notion of complementarity between products to create value. It is tempting to draw a parallel with the concept of "solution" (Sharma and Molloy, 1999), whose added value comes from a combination of products, but especially from the addition of services and expertise for customers.

A bundling strategy can therefore consist of bringing together complementary products to create a system. Authors such as Dumez and Jeunemaître (2004) and Choi (2008) have studied the phenomena of combinations of offerings and their impact on market boundaries. Analyzing the attempted merger between General Electric and Honeywell, they show that the combination of their offerings would have allowed the creation of a "nose to tail" components offering for aircraft. No other competitor company alone could have provided as comprehensive a system, which would have given GE-Honeywell an unbeatable competitive advantage. Within this perspective, bundling allows the merging of two previously independent markets, in order to acquire a leading position in the new market thereby created.

A number of other authors have reasoned along similar lines. For example, Ghosh and Balachander (2007) consider the case of a two-product firm, competing with a firm specializing in each of its two products. For one of the categories, the products are homogeneous, while in the other, they are horizontally differentiated. These authors note that it is in the interest of the generalist firm to use pure bundling, because this allows it to avoid head-on competition in the market for the homogeneous product. They then develop an original argument, based on the findings of Matutes and Regibeau (1992), and show that, under certain conditions, firms specializing in one product will also create a multi-brand bundle, so that it is no longer a matter of competition between products but between bundles.

A more dynamic approach may also be of interest, by observing how bundling strategies can act as barriers to market entry, as suggested by Nalebuff (2004) and Peitz (2008). Nalebuff considers the case of a firm that is able to produce two products, A and B, of which one of them (product B) faces competition. He comes to the conclusion that if the company producing two products decides to create a bundle (A-B), then the potential competitor to product B will not dare enter the market because it will risk going out of business.

It may be noted in passing that this conclusion is especially true since the preferences for the products are positively correlated, because of their complementarity. "The reason is that a one-product entrant has everything its consumers want when the valuations for A and B are negatively correlated. The markets for A and B are essentially different groups of consumers. In contrast, when A and B are positively correlated, the same group of consumers is buying both A and B and, thus, a one-product entrant cannot satisfy its consumers." (Nalebuff, 2004, p. 160). Unlike the classic justification of bundling (see 2.1.), this strategy is effective only when the products are positively correlated. We also find these notions of threats and barriers to entry in the work of Carlton and Waldman (2002) on bundling strategies.

Such strategies therefore allow firms to mitigate or strengthen market boundaries, depending on their interests.

3.3. Transferring market power from one market to another

In the previously cited studies, there has been the underlying idea that with this type of strategy a portion of a firm's power can be transferred from one market to another. This is especially true if the firm has a monopoly in one of its products.

The Chicago School (with authors such as Bowman and Posner) considers that this type of reasoning is not theoretically well-founded. Its proponents rely on what they call the "single monopoly profit theorem", which states that a company with a monopoly cannot

exercise its market power through the lever effect in another market. But this theorem is only valid under certain circumstances. Whinston (1990) shows that it only makes sense if the market for second product is perfectly competitive, and if the returns are constant. On the other hand, if the market for the second product is imperfectly competitive, and has increasing returns, the company is able to increase its profit by means of bundling strategy.

As Stremersch and Tellis (2002) point out, bundling is particularly relevant if the firm adopts a strategy of market penetration, since this facilitates the spread of the innovation. But in the case of an industry where returns are increasing, the higher a company's market share, the greater the chances of this continuing in the future. It is therefore possible to create a virtuous circle with a bundling strategy.

Opting for a bundling strategy is therefore advantageous for a firm that has market power in one market and is trying to expand in a new market. Profiting from its position in the primary market, it will be able to improve its position in the other one.

Table 2 – Summary of the contributions of bundling in marketing strategy

Contribution	Examples
Developing a competitive advantage	
Managing the diversity of consumers' preferences	Marketing a set of DVDs by a film director, for which some consumers will have a more marked preference for one film and others for another film.
Altering the perception of product prices	Giving a 10% discount on a "computer + printer" package, with the reduction split between 10% off the computer and 10% off the printer.
Creating value by integrating products	Selling accessories specifically adapted for a car model.
Facilitating the adoption of innovations or a new brand	Selling a new type of headphone with a well-known MP3 player.
Altering consumer behavior	Selling a pack of 10 movie tickets, knowing that only 9 are actually used during the validity period.
Reducing transaction costs	Selling products in bulk to reduce delivery costs.

Structuring the market in one's favor	
Defining the new product's reference market	Introducing a new fashion accessory by selling it with branded clothing, so that it is associated with the values of the brand.
Creating comprehensive offerings that are hard to compete with	Selling "bank-insurance-retirement" packages to cover all needs and avoid direct competition in each of these markets.
Transferring one's power from one market to another	Taking advantage of strength in the online book sector to market reading lights.

4. The advantages of unbundling and its conditions of effectiveness

We have so far presented the many advantages associated with a bundling strategy, as they have been identified in the literature. However, most of these contributions are based on strong assumptions (high transaction costs, specific demand distribution functions, etc.) which in some cases have lost their validity in recent years. The aim of this section is twofold: to show on the one hand that bundling is not a surefire strategy, and on the other that unbundling strategies can also be relevant in certain contexts. Various questions arise. In what circumstances is bundling desirable or legitimate? May there be an advantage in breaking down bundles and selling the products separately?

4.1. Unbundling strategies

Somewhat paradoxically, the term unbundling is mostly associated with a very different literature from what we have previously considered, that of the liberalization of network economies (energy, telecoms, transport, etc.). For these, unbundling refers to the separation of infrastructure (the network) and services that had to be introduced for these areas to be opened up to competition. By way of example, in 1997, Réseau Ferré de France was created to manage the railway infrastructure (previously under the control of SNCF), so as to allow potential competitors of SNCF to enter the French market without risk of discrimination.

However, in this section, we will use the term unbundling to refer to the decomposition of a bundle of several items sold separately. Elberse (2010) offers the example of music, traditionally sold in the form of albums, which can now be sold on the Internet as individual tracks.

4.2. **Reasons for adopting unbundling strategies**

While there is an extensive literature on bundling strategies, few studies have been devoted to unbundling. Nevertheless, new technologies, especially information technology and communication technology, by lowering transaction costs, can change consumer behavior and make unbundling strategies profitable for companies. There is no doubt that research on this type of strategy will expand in the coming years. Let us now look at the main existing studies on this topic.

Taking the example of selling music on the Internet, Elberse (2010) explains unbundling strategies through the reduction of transaction costs. In sub-section 2.5., we showed that bundling makes it possible to reduce the company's transaction and distribution costs. Yet the reduction of transaction costs (particularly through the Internet) no longer justifies the need to group several products into a bundle in order to distribute it at the lowest cost. To return to the music example, albums allowed a number of separate tracks to be marketed and distributed at the same time. With the development of the Internet and platforms like iTunes, these transaction and distribution costs have fallen dramatically, to the extent that bundling practices are no longer justified. Thus, unbundling emerges as a relevant strategy for firms operating in sectors where transaction costs have fallen sharply.

An alternative explanation may come from changes in consumer experience. Bundling (particularly product bundling) was presented as a way of reducing the consumer's search costs and minimizing the risk of incompatibility. But after using a product for while, the consumer will gain experience and knowledge of it. He will therefore develop specific preferences, and will choose to create his own product mix rather than buy a pre-formed

bundle (Wilson, Weiss and John 1990). We find this logic in the computer manufacturer Dell's strategy, which is aimed at experienced customers who are capable of defining their own needs and building the computer of their choice. Unbundling thus allows Dell to respond better to consumers' increasingly varied preferences.

Similarly, unbundling may arise from consumers' wish to receive more personalized offerings. Taking the example of low-cost airlines, McDonald (2011) explains the decision to unbundle air services by the willingness of customers to pay a fair price for the service received. Previously, whether or not a passenger ate a meal and checked in his baggage, he was obliged to pay the same price. The most economical passengers (in terms of services) indirectly subsidized passengers benefitting from these various services. The unbundling of air services therefore allows cross-subsidization between passengers to be ended and provides each customer with maximally personalized services, together with the corresponding price. Unbundling is thus a way of ensuring that what each customer purchases exactly matches his needs, not those of other consumers.

However, unlike the previous examples, the strategy of unbundling is not always voluntary, and may result from external constraints. It may, for example, arise due to legal requirements. "Pure bundling" is viewed as a form of tying. In this configuration, products are supplied only as part of the bundle, and the practice is deemed illegal. Indeed, pure bundling allows a company to take advantage of leverage to market another product that is not necessarily wanted by the consumer. Firms are therefore required to supply, at least in parallel with the bundle, the products separately (even if the prices are unfavorable to the customer). These legal constraints resulted in unbundling by companies such as IBM in the late 1960s. Grad (2002) explains that it was precisely pressure from the U.S. Department of Justice which led IBM to break up its offering (which previously tied a computer to specific software) in order to avoid prosecution. However, these external constraints can be used to reshape a firm's strategy and convince it of the relevance of an unbundling strategy, giving rise to offerings that are more suited to the needs of its customers.

These four factors that may lead to unbundling can be combined. The growth of consumer experience on the Internet, for example, both brings down search costs and makes the hunt for personalized offerings easier.

4.3. Mixed bundling, a considered strategy

The conditions under which it is appropriate to develop a bundling or unbundling strategy have been specified. But these strategies are by no means mutually exclusive. In other words, opting for bundling does not exclude the possibility of the company continuing to sell its products separately, and vice versa. On the contrary, these two marketing methods are complementary.

We have already referred to the superiority of "mixed bundling", i.e. the possibility for the firm of pricing and selling its products both as a bundle and separately. Schmalensee (1984) explains that the combination of these two approaches allows the bundle to be sold to consumers with low heterogeneity of preferences, while making consumers with a very marked preference for one of the products pay a high price. Thus mixed bundling allows a firm to act in compliance with the law, by offering products either as a bundle or separately. This practice is particularly used by telephone operators, who prefer bundles (subscription + phone), but also sell phones and subscriptions alone, though on less favorable terms. A mixed bundling strategy is generally recognized as the most effective because it generates more profit than pure bundling or total unbundling.

Nevertheless, the adoption of mixed bundling is not always a foregone conclusion. The firm must ensure that the prices of products sold individually are high enough to best capture the economic rent of consumers with very marked preferences. But as Elberse (2010) notes in the context of online music, the price of tracks sold separately (€0.99) is too low to ensure the superiority of mixed bundling. Hence mixed bundling, if not correctly implemented, can lead to less satisfactory results than pure bundling or total unbundling.

It must therefore be concluded that bundling strategies must be implemented with care, because they do not offer a panacea applicable to every case. However, experience suggests that rather than choosing the extremes (pure bundling or total unbundling), firms on balance prefer the median solution represented by mixed bundling.

5. Discussion and concluding remarks

In this paper, we have shown the advantages and disadvantages of different types of bundling. The advantages of this type of strategy has been shown in two stages: first, at the level of a firm's competitive advantage (cost reduction, management of the heterogeneity of consumer profiles, changing the image of products); and second, from a different standpoint, bundling was examined on a market scale. It was then a question of understanding how such a strategy can modify the boundaries of the market, in accordance with companies' interests. Several methods were analyzed: from the creation of barriers to market entry and the recombination of separate markets. It emerged from this analysis that the bundling is a promising strategy for many firms, especially when they have a large product portfolio. Part of the literature also shows that opting for unbundling may be relevant in many cases, a finding that explains the existence of these two apparently contradictory tendencies.

The contradiction seems to disappear if a dynamic view of the phenomenon is adopted. Most of the studies are in fact situated within a comparative static perspective. Yet if bundling is a way of gaining a competitive advantage, all companies will be tempted to adopt this marketing strategy in period t+1 (Matutes and Regibeau, 1992). This phenomenon of strategic mimetism (Scharfstein and Stein (1990); Banerjee (1992); Dumez and Jeunemaître, 1995) can result in the cancelling out of competitive advantage. A further differentiation will then, by contrast, involve adopting an unbundling strategy to satisfy customers with very marked preferences. During period t+2, the development of mixed bundling offerings will occur, the advantages of which, as noted above, have been discussed by Schmalensee (1984). Cycles of bundling and unbundling could therefore

follow on from each other, in a similar fashion to cycles of vertical integration and disintegration as analyzed by Fine (1998).

Mastery of the challenges and marketing implications of bundling and unbundling strategies appears in any case to be a trump card in attempts to build a competitive advantage.

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