INSEAD

The Business School
for the World

Faculty & Research
Working Paper

New Product Distribution and
Inter-Channel Competition:
Market-Making, Market-Taking,
and Competitive Effects in Several
European Countries

Hubert GATIGNON
Erin ANDERSON
Joseph LAJOS
2007/35/MKT

New Product Distribution and Inter-Channel Competition: Market-Making, Market-Taking, and Competitive Effects in Several European Countries

Hubert Gatignon*

Erin Anderson**

and

Joseph Lajos***

April 22, 2007

*   The Claude Janssen Chaired Professor of Business Administration, Professor of Marketing, Research Director of the INSEAD-Wharton Alliance and Director of the Alliance Center for Global Research and Development at INSEAD, Europe Campus, Boulevard de Constance, 77305 Fontainebleau Cedex, France, hubert.gatignon@insead.edu, phone: 33.1.60.72.44.37, fax: 33.1.60.74.55.00

**   The John H. Loudon Chaired Professor of International Management, Professor of Marketing and Dean of Executive Education at INSEAD, Europe Campus, Boulevard de Constance, 77305 Fontainebleau Cedex, France, erin.anderson@insead.edu, phone: 33.1.60.72.44.48, fax:33.1.60.72.92.40

***   PhD Student at INSEAD, Europe Campus, Boulevard de Constance, 77305 Fontainebleau Cedex, France, joseph.lajos@insead.edu, phone: 33.1.60.72.92.28, fax: 33.1.60.74.55.00

New Product Distribution and Inter-Channel Competition: Market-Making, Market-Taking, and Competitive Effects in Several European Countries

We examine first-time sales of brands in a new category of consumer durable as a function of patterns of retail coverage. New brands in new categories of durables pose substantial risks, both for consumers (influencing their adoption of the innovation) and for retailers (influencing their decision to carry the brand). We hypothesize that certain channels of distribution act as "scouts" and that other distribution channels ("troops") follow their leadership by copying their decisions to increase or decrease coverage in a new category of consumer durable. We also analyze how a particular category of retailer, the all-under-one-roof value store, influences both its competitors' coverage decisions and consumers' adoption patterns. We examine whether retail availability drives sales (market-making), responds to sales (market-taking), or both simultaneously. In an empirical study, we estimate a simultaneous model of sales and coverage for two brands of 32-bit video game consoles when they were introduced in five different retail environments in Europe. This study provides evidence of mimetic isomorphism –certain types of retailers imitate the stocking decisions of other types who act as leaders in some markets. Furthermore, the results indicate that all-under-one-roof value stores are not destructive to competition, and that sales in these stores may even boost sales in other channels. Finally, we show that distribution channels engage in both market-making and market-taking, sometimes simultaneously.

Key words: channels of distribution, inter-type rivalry, retailing, new product sales, mimetic isomorphism

New Product Distribution and Inter-Channel Competition: Market-Making, Market-Taking, and Competitive Effects in Several European Countries

1. Introduction

In order to be successful, manufacturers must be able to convince retailers to carry their products. The distribution literature provides ample evidence that, for retailers, deciding whether or not to carry a product, especially a new product, is often difficult. Many retailers face more new products than they are capable of stocking. Furthermore, retailers must try to select the optimal mix of products in order to cope with competition from other channels. Intuitively, different types of retailers make these decisions in different ways. Nevertheless, the roles of different channels and their competitive behavior in the context of a new product have not yet been analyzed in the marketing literature.

In this article, we use a simultaneous equation model to examine sales and distribution coverage of two brands of a new consumer durable in competing channels of distribution. This model allows us to examine how distribution coverage arises. This question is important, because, just as consumers take a risk when they adopt an innovation, retailers take a risk when they decide to carry it. We hypothesize that some channels act as "scouts" by taking early risks, and that other channels ("troops") imitate their decisions to increase or decrease coverage of brands in a new category of consumer durable. We argue that one can identify scouts a priori by observable features of their structure and marketing strategy.

We also analyze the role of one type of retailer that does not fit current taxonomies. The all-under-one-roof value store, positioned as offering the same value as other types of

1

retailers but for a lower price, is a very large generalist that comprises both a supermarket and a complete general merchandise offering, including complex hard goods. All-under-one-roof value stores are both habitual stores (meriting regular trips for consumables) and destination stores (meriting special visits for uncommon purchases, such as durables). We propose that this combination gives all-under-one-roof value stores unusual properties that may influence both the sales and coverage decisions of other distribution channels.

Finally, we reverse the question of how distribution influences adoption. When increases in coverage increase adoption, channels of distribution act as "market-makers" by driving first-time sales. Alternatively, channels may carry an innovative durable because first-time sales have already materialized. In this case, channels are "market takers." In this article, we examine the duality of this relationship. Specifically, we focus on the intriguing possibility, untested in the literature, that the relationship between distribution coverage and adoption of a brand of a new consumer durable may be simultaneous in some markets. Such a simultaneous relationship would imply that channels sometimes both drive sales ("market-making") and respond to sales ("market-taking") so rapidly that both of these effects may be observed in the same time period for which data are available. If such a simultaneous relationship exists, then producers face a conundrum. If consumers adopt once retailers carry an innovation, but retailers carry innovations once consumer response is sufficient, how can manufacturers gain distribution coverage or win first-time sales?

Our unit of analysis is the adoption or sales of a brand of an innovative consumer durable within a type of retail distribution channel. Thus, we focus on inter-channel competition at the brand level, and we frame channels at the level of a retailer type (e.g., department stores, mail order stores, large specialists, small independents). Does a brand's coverage within a channel depend on the coverage decisions of retailers in other channels? Specifically, do the decisions of scouts and/or all-under-one-roof value stores influence

2

coverage in other channels? In turn, do these massive value stores, the ultimate in retail generalists, influence whether consumers will purchase a given innovative brand in other types of retail outlets? Finally, do distribution channels make markets for innovative durables, respond to such markets as they emerge, or both, so rapidly that market-making does not appear to precede market-taking (or vice versa)?

We address these questions using an unusually comprehensive dataset that describes both the sales and distribution coverage of two competing brands (Sega and Sony) of a new consumer durable (32-bit video game consoles) in multiple distribution channels in five European retail environments (France, Germany, the Netherlands, Spain, and the United Kingdom). These settings vary considerably.

Our findings indicate that patterns of sales and coverage depend on the environment, consistent with the predictions of neo-institutional theory (Grewal and Dharwadkar 2002) and with research on marketing mix effectiveness in multiple countries (Helsen, Jedidi, and DeSarbo 1993). In the Netherlands, there is a strong tendency for troop channels to imitate the coverage decisions of scout channels in accord with the theory of mimetic isomorphism (Greve 1996, Haveman 1993). In France, cumulative sales in all-under-one-roof value stores boost sales in other channels. Nevertheless, in Germany, we observe a coverage avoidance effect in which other channels counter the coverage decisions of all-under-one-roof value stores. Finally, distribution channels appear to be market-takers in all five countries investigated, and also to simultaneously engage in market-making in Germany and the Netherlands. Although it would be premature to draw generalizations from one product in five countries, our results provide some evidence about provocative and complex aspects of multi-channel distribution that have until now received little empirical attention.

2. Conceptual Model of Distribution Coverage and Sales

2.1. Distribution Channels as Troops and Scouts

Retailers often face the important and difficult decision of whether or not to carry at least one brand in a new category of consumer durable that would constitute a significant purchase for consumers. Consider the microwave oven when it was introduced in the 1980s. Retailers that decided to add the microwave category by carrying at least one brand needed to invest substantially, thereby taking large risks. In addition to the opportunity cost of shelf space and selling effort that could be devoted to another brand or category, retailers that wish to carry at least one brand in an innovative new category must adapt their operations substantially. At minimum, these retailers must update their information systems, catalogues, and advertisements, and train their sales and clerical personnel appropriately. Furthermore, some products require significant additional investments in repair facilities and spare parts. Finally, when stocking any new category of durable, a retailer's decision makers make a psychological investment by "betting" not only that the product category, but a given brand in it, will succeed. By betting on a new durable, the retailer risks its hard-won goodwill in its customer base. Furthermore, a forward-looking channel member will see that these financial and psychological investments create substantial switching costs. Thus, the decision to drop the new brand or category later cannot be taken readily.

It follows that the decision of whether or not to carry a brand of a new durable is fraught with risk, and should be made carefully and strategically. But how should a retailer decide? Research in organization theory, economics, and sociology points to one solution - follow a leader. Mimetic isomorphism occurs when organizations come to resemble each other by virtue of imitating the visible decisions of a commonly held role model (Haveman

1993). The guiding principle is that when the outcomes of adopting an organizational change are more uncertain, organizations will be more likely to model themselves on other organizations, resulting in mimetic adoption of practices.

The mechanisms that researchers have proposed to explain mimetic isomorphism can be categorized into two schools (Greve 1996). First, mechanisms within the economic school propose that imitators infer the payoffs to earlier adopters by observing their behaviors (i.e., adoption brings information). The weak-form argument within the economic school is that imitating a leader's behavior helps firms cope with limitations in their own information or in their ability to process this information. The strong-form argument is that firms actively extrapolate from the leader's circumstances to theirs. Second, mechanisms within the institutional theory school propose that firms imitate leaders to preserve their social fitness. The argument is that firms hesitate to change to a new practice out of fear that their stakeholders will consider the action to be inappropriate. However, when a leader adopts a practice, it legitimizes the decision, thereby permitting others to follow. Grewal and Dharwadkar (2002) argue that institutional theory considerations of social fitness, typically overlooked by marketing research, pervade distribution channels.

This discussion raises an important question: Who will be the leader? Greve (1996) notes that most research on mimetic isomorphism does not address this issue explicitly. Greve proposes that, at minimum, a leader should be highly visible, so that others can pick up the signals that its actions send. Furthermore, Haveman (1993) proposes that leaders should be considered successful by their peers, so that they may function as role models (the legitimacy explanation) whose actions reflect rational decision making (the information explanation). Furthermore, these considerations imply that leaders should be large, since people perceive size and success as connected (Haveman 1993). Past research has provided empirical support for mimetic isomorphism within the marketing strategy domain. For

example, Greve (1996) showed that firms imitate leaders when they make major marketing decisions that are new to their industry, and Haveman (1993) showed that many firms base their market entry decisions on those of large, profitable firms within their industry.

Although extant research provides a framework for predicting which firms' actions others are likely to copy, it does not explain which firms are most likely to move first. Jones and Mason (1990) propose a conceptual model in which individual stores act as first-movers. These stores ("scouts") are less risk averse and less inertial than other stores, because they possess superior information about a new product category and how customers are likely to react to it, and because innovation is an integral part of their operations. Thus, according to the model, these stores stock a new product first. Meanwhile, other retailers ("troops") observe the scouts and wait to enter the category until doing so appears to be "safer."

Whereas Jones and Mason (1990) apply the notion of troops and scouts to different stores within the same channel (and even within the same chain when a firm uses a few select stores to experiment with innovations), in this article we apply this notion to types of distribution channels. Specifically, we propose that the scout role is played by specialist retailers that (1) are large enough to be easily observed by members of other channels, and (2) pursue a conventional specialist strategy of competing on advice and selection. Following Greve (1996) and Haveman (1993), conditions 1 and 2 are necessary for imitation to occur. Specifically, scouts must be large to be visible, and they must be conventional so that other types of retailers can "correct the data" in order to extrapolate how the innovation might do in their own stores. But why should scouts be specialists?

All else equal, specialist retailers are likely to acquire a deeper understanding of consumer behavior, product offerings, and supplier behavior than their generalist competitors. A store manager or buyer who concentrates exclusively on consumer electronics should learn more about marketing consumer electronics than a manager who must also cope

with products in diverse categories such as food, personal care, hardware, automotive, garden, and home decor. It follows that specialists, rather than generalists, should possess superior information about whether a new brand and/or product category is likely to have potential. On the basis of this superior information, specialists should be more likely than generalists to pioneer an innovative product category by carrying at least one brand. Furthermore, the decision to pioneer is likely to support the desire of specialists to differentiate themselves, thereby giving consumers reasons to justify a shopping trip.

In summary, we hypothesize that other distribution channels imitate the coverage decisions of large specialists who compete on advice and selection. Based on this hypothesis, we predict that coverage by troops increases (decreases) following increases (decreases) in coverage by scouts.

2.2. Impact of Sales in All-Under-One-Roof Value Stores on Sales in Other Channels

Existing taxonomies of retailer types overlook a category that has the potential to uniquely impact both adoption and coverage in other channels. One factor in established taxonomies of retailers is the consistency of a store's assortment (i.e., how closely related its end products are in terms of usage). Generalist stores carry many inconsistent lines, thereby meeting unrelated market needs, whereas specialists carry many consistent lines, thereby meeting related market needs (Miller, Reardon, and McCorkle 1999). Taxonomies also distinguish among retailers by their pricing positioning. For example, discounters consistently price under prevailing market prices. Discounters take many forms and have significant effects on the markets in which they operate.

Levy and Weitz (1998) propose a different taxonomy in which "general merchandise retailers" sell goods that are nonperishable, whereas a "supermarket" is a large store that sells

food and other fast-moving consumer goods (FMCGs). These characteristics make supermarkets "habitual stores" (visited on a fixed basis, e.g. once per week) for many consumers. In contrast, general merchandise retailers are "destination stores." These stores offer some unique feature (e.g., selection, pricing, or merchandising) that acts as a magnet, drawing consumers to visit the store.

A relatively new type of retailer that exists in some European countries combines features within these established taxonomies. The "all-under-one-roof value store" is based on a full-sized supermarket, and therefore is a habitual store for many consumers. Like a discounter, the all-under-one-roof value store pursues a value-for-your-money positioning strategy, and is perceived as offering lower prices on average (perhaps inaccurately - some consumer groups charge that the advertising and frequent promotions of these stores mislead consumers). However, this type of store is distinguished by the fact that it is truly a general merchandiser as well, selling high-priced, complex items such as garden equipment, furniture, computers, consumer electronics, and appliances. Consequently, all-under-one-roof value stores are very large, and draw consumers from an extended trading area. This property requires that they be inconveniently located for most people, making them destination stores. Their breadth of assortment (the extreme of one-stop shopping) combined with (perceived) value pricing is the magnet that draws consumers in. Thus, a critical feature of these stores, absent from established taxonomies, is that they are both habitual stores and destination stores. We argue that this distinctive hybrid feature may have profound effects on consumers' adoption behavior.

All-under-one-roof value stores are ferocious competitors that may alter the adoption dynamics for a new durable product category. We propose that sales in these stores may, contrary to popular assumption, boost sales in other channels, because, although coverage in

all-under-one-roof value stores may increase consumer interest in an innovative durable, these stores may be unable to convert such interest into own-store sales.

Many prospects hesitate to buy innovative durables in an all-under-one-roof value stores (Lele 1986, Moore 1991) due to perceived risk. A new durable is a substantial purchase. When purchasing a new durable, buyers are often unsure which benefits it conveys, what they will use it for, which features they should prioritize, which brand is best, and even which attributes each brand possesses (Gatignon and Robertson 1985). Thus, consumers may hesitate, at least initially, to purchase a new durable in the same store where they buy toilet paper, butter, and pet food.

In the face of such risk, consumers need reassurance, and the logical place to get it is at specialty retailers. Consumers may reason (just as do competitors) that a category specialist is likely to possess superior information, which may justify paying a premium price. Specialists offer focus, selection, and trustworthy advice from knowledgeable salespeople. For these reasons, specialists have greater legitimacy within their chosen product categories than do generalists, and such legitimacy matters more as uncertainty mounts. For example, in Germany, most consumers, when buying kitchen appliances, sense risk, want trustworthy advice, and go to specialist stores to get it. Only on occasions when they feel that they are less likely to make a major error (e.g., when making a replacement purchase or buying a small appliance) will they consider an all-under-one-roof value store, with its lower levels of assistance, selection, and focus, even when it offers a substantially lower price (Euromonitor 1997). Of course, free riding on specialists is possible. Many German shoppers get advice from specialists and then make their purchases at generalist stores that offer lower prices. Nevertheless, at least half of the shoppers who visit specialist stores buy their kitchen durables where they see the selection and get advice (Retail Intelligence 1998).

Pushing this argument further suggests that sales in all-under-one-roof value stores may have a positive effect on sales in other channels. The argument is that consumers may infer that a new durable is not really so risky after all when they see that other consumers have already purchased it at these large generalists (Lele 1986, Moore 1991). It follows that their interest in the innovation may increase, thereby lowering resistance to adoption, but not to the point that they are all willing to buy in these stores. Many hold-out consumers may still prefer the reassurance of buying in specialist stores that are more closely identified with durables and related products. Based on this argument, it follows that first-time sales in all-under-one roof value stores may, counter-intuitively, increase first-time sales in other channels.

However, an opposing argument suggests that sales in all-under-one-roof value stores could cannibalize sales in other channels, beyond the impact of lower prices offered in these stores. A critical feature of all-under-one-roof value stores is that they are habitual stores, and therefore have the opportunity to pre-empt a purchase in another channel. When consumers visit grocery stores or general merchandisers, they often make a large number of unplanned purchases (Inman and Winer 1998). Thus, consumers browsing in an all-under-one-roof value store may see a display for a new consumer durable and purchase it on the spot before investigating elsewhere. Alternatively, consumers who have investigated elsewhere may visit an all-under-one-roof value store while in the deliberation stage. The availability of the product in a habitual store may end the deliberation stage, especially if consumers see that others have already purchased the new durable in the store. Based on this argument, it follows that first-time sales in all-under-one-roof value stores may decrease first-time sales in other channels.

In summary, first-time sales in the all-under-one-roof value store channel are likely to influence first-time sales in other channels, but the expected direction of this influence is not

clear. The direction of influence should depend on the degree of perceived risk in the new category. If perceived risk is low, consumers may tend to purchase the new durable spontaneously in all-under-one-roof value stores, whereas if perceived risk is high, consumers may instead tend to seek additional information from specialists before making a purchase. Hofstede's (1980) finding that perceived risk varies across cultures is relevant to our study of this issue in multiple environments. Overall, determining how first-time sales in all-under-one-roof value stores affect first-time sales in other channels would be extremely useful for retail managers and regulators, since the common assumption that all-under-one-roof value stores cannibalize other channels has been a source of conflict with other types of retailers and a basis for regulation that controls the expansion of these stores.

2.3. Impact of Coverage in All-Under-One-Roof Value Stores on Coverage in Other Channels

If sales of a new durable in all-under-one-roof value stores influence sales in other channels, it follows that the coverage decisions of all-under-one-roof value stores might influence those of other channels. For example, when all-under-one-roof value stores choose to carry a new durable, this may signal to other retailers that the product is saleable (even with a generalist image, low service, and shallow depth of assortment), thereby spurring coverage in other channels. Furthermore, coverage in all-under-one-roof value stores may create "must carry" effects for other channels. That is, if all-under-one-roof value stores carry a new product, consumers might expect other types of retailers to carry it as well.

However, all-under-one-roof value stores compete intensely with other types of retailers. Thus, when all-under-one-roof value stores choose to carry a brand of a new durable, their widely-advertised low prices and consumers' free-riding attempts may reduce

the product's profitability in other channels, thereby discouraging these channels from carrying it (i.e., an "avoidance" effect, Cespedes, Corey, and Rangan 1988, Coughlan et al. 2001).

In summary, coverage in all-under-one-roof value stores is likely to influence coverage in other channels, but the expected direction of this influence is not clear and is likely to depend on the level of competition within the retail environment.

2.4. Distribution Channels as Market-Makers and Market-Takers

In consumer markets, coverage aids adoption of new products by making it physically possible for consumers to purchase them. Furthermore, retail displays and the efforts of salespeople can help make a new product salient among consumers. In this way, retailers, in the aggregate, make markets by offering coverage. Parsons (1974) demonstrates this market-making effect for early sales of new brands of FMCGs. Furthermore, several studies in a cinematic context have examined the relationship between screen availability (coverage) and movie receipts (adoption, Eliashberg et al. 2000, Jones and Ritz 1991, Lehmann and Weinberg 2000, Neelamegham and Chintagunta 1999). For example, Neelamegham and Chintagunta (1999) present evidence that, of a variety of factors, coverage is the single greatest driver of movie viewing. Furthermore, Lehmann and Weinberg (2000) show that the pattern of sequential release of movies in different types of distribution channels has a large impact on adoption. However, Lehmann and Weinberg note that consumers do not regard new movies as risky. Thus, all else equal, consumers should adopt a new movie faster and more easily than a new durable. The idea that greater retail coverage increases adoption of a risky purchase, such as a durable, remains untested.

Previous research has demonstrated that this coverage-adoption relationship may also proceed in the opposite direction. For example, Farley and Leavitt (1968) show that increases in adoption may lead to increases in coverage. In some markets, retailers use sensing mechanisms to forecast latent demand and then meet it by providing the requisite supply (Coughlan et al. 2001). Thus, channels can be reactive, acting as market-takers.

Marketing-making and market-taking are not mutually exclusive - both may occur (Jones and Mason 1990). We propose that this dual relationship may proceed so quickly as to imply a simultaneous relationship between coverage and adoption during a period of observation. In a study of the launch of ready-to-drink tea, Bronnenberg, Mahajan, and Vanhonacker (2000) provide evidence that distribution influences market share (i.e., retailers are market-makers) and that market share also influences distribution (i.e., retailers are market-takers), but only for a limited time, early in the category's lifecycle. The possibility that market-making and market-taking occur simultaneously over extended periods of time within risky, durable product categories has not yet been examined.

In summary, we hypothesize that the coverage and sales of new innovative durables are simultaneously intertwined. We also hypothesize that channels make their coverage decisions by following a leader (i.e., troops follow scouts). Finally, we hypothesize that all-under-one-roof value stores influence both sales and coverage in other channels. We now turn to a test of these hypotheses in five different retail settings in Europe.

3. Empirical Analyses

3.1. Data Source and Product Category

Data requirements to explore the hypothesized effects are high, and could explain why published effort linking distribution coverage to adoption exists for FMCGs and movie titles but not for risky products such as durables. Model estimation requires compatible data that cover the entire consumer market and all relevant retailers carrying a new durable in an uninterrupted time series from introduction until at least the advanced growth stage. Furthermore, these data must be large and varied enough to test for possible effects of inter-type rivalry and simultaneity.

Such data exist for a consumer entertainment durable (32-bit video game consoles), available in two brands (Sega and Sony) that were introduced in five European countries (France, Germany, the Netherlands, Spain, and the U.K.) at different times, beginning as early as February 1995. GfK Marketing Services collected bimonthly or monthly data on consumer sales and retail outlets for each brand in these five countries. GfK is a multinational market research firm that specializes in tracking retail operations for consumer products, especially durables. GfK covers 49 countries on four continents and is the world's eighth largest market research firm based on revenue (Marketing News 2001). Depending on the market, up to 24 bimonthly observations or 48 monthly observations per brand per channel were available from introduction of the category until as late as September 1999[1]. Although the product category had not achieved saturation by the end of the time series, distribution coverage had. Therefore, these five country datasets contain all the information needed to analyze the hypothesized relationships between sales and coverage. After accounting for the different times at which each brand entered each channel, 118 bimonthly observations were available for France, 61 for the Netherlands, and 53 for Spain. Furthermore, 132 monthly observations were available for Germany, and 294 for the U.K.

---

[1] Specifically, bimonthly data are available for France (from June 1995 to January 1998), the Netherlands (from January 1996 to August 1999), and Spain (from June 1995 to January 1997). Monthly data are available for Germany (from January 1997 to September 1999) and the United Kingdom (from September 1995 to September 1999).

Thirty-two bit video game consoles are next-generation durables. Although earlier generation 8-bit and 16-bit consoles had already been widely adopted, 32-bit consoles had the characteristics of a major innovation, offering sharply improved performance at a much higher price than the earlier generation consoles. Software for the new consoles was available from launch and was visibly superior. Contrary to the usual case of next-generation durables, this software was not backward compatible (i.e., it could not be played on earlier-generation consoles). Thus, the later generation should have won over many adopters of the earlier technology.

The Sega and Sony brands dominated the 32-bit video game console product category in Europe. These brands were introduced at the same time, and together obtained between 80% and 100% of the share in the product category over the period of study. Both of these brands were initially expensive in all countries. For example, in France, 32-bit video game consoles were priced as high as 3000 French francs, which was half of the monthly minimum gross salary. Prices declined over this period to a low of about 1000 French francs, still a substantial sum, which increased the risk of the purchase. Sega and Sony competed intensely. Thus, sales of one brand were likely to slow sales of the other. Furthermore, the brands were incompatible, and European households rarely purchased both (Euromonitor 2001).

3.2. Channels and Countries

GfK tracked all distribution channels in those countries in which the video game consoles achieved any significant level of sales. Both brands were sold through up to four types of distribution channels in each country (see Table 1). Distribution coverage (i.e., the percentage of stores within a channel that carried a brand, weighted by sales volume in that

channel) evolved at different rates with different patterns across these channels (see Figure 2). We provide background information on the channels in the Appendix.

Although the five retail environments that we examine are converging, they differed considerably at the time of the study (Leeflang and van Raaij 1995). Market research reports concur and, specifically, discuss differences in consumers' habits and preferences, and in the retail choice set. Sega and Sony competed in three markets (France, Spain, and the U.K), whereas Sony completely dominated two markets (Germany and the Netherlands). We report selected descriptive statistics in Table 1.

3.3. Simultaneous Equation Model of Sales and Coverage

We develop an econometric model with a simultaneous relationship between sales of brand i ($i = 1, 2$) in channel j ($j = 1, ...,4$) and the coverage of brand i in channel j at time t. In order to control for sales growth from the period of introduction, we employ a sales response model specification that is consistent with models successfully specified in several studies of new product introduction (Shankar 1997, 1999, Shankar, Carpenter, and Krishnamurthi 1999)[2].

Equation 1 is the sales equation.

$$SQ_{ij}(t) = \exp\left[\alpha_{0j} + \alpha_1 \cdot ON(t) + \alpha_2 \cdot DJ(t) + \phi \cdot \frac{1}{T_{ij}(t)} + \pi \cdot \Delta_j \cdot CSH_i(t) + \gamma \cdot CSC_i(t)\right] \cdot \left(RP_{ij}(t)\right)^{\beta} \cdot \left(WD_{ij}(t)\right)^{\delta} + \varepsilon_{ij}^{SQ}(t) \tag{1}$$

where:

---

[2] An alternative model for this type of data is the nested multinomial logit specification, in which brand choice is nested within channels to reflect the desirability of brands in the selection of channels, or in which channels are nested within brand choice to reflect the desirability of channels in brand selection. The results for the three countries where two brands compete do not support the nested structure, as the coefficients corresponding to the nested structure are not statistically significant. Nevertheless, the conditional models provide results consistent with those of the models reported in this study.

$SQ_{ij}(t)$ = sales quantity of brand i in channel type j at time t (i.e., adoption)

$ON(t) = 1$ if t = October - November bimonth, and 0 otherwise

$DJ(t) = 1$ if t = December - January bimonth, and 0 otherwise

$T_{ij}(t)$ = number of periods since brand i was introduced in channel type j at time t

$\Delta_j = 0$ if j = hypermarket or mass merchandiser channel, and 1 otherwise

$CSH_i(t)$ = cumulative sales of brand i in the hypermarket or mass merchandiser channel up to time $t - 1$

$CSC_i(t)$ = cumulative sales of brand i' across all channels up to time $t - 1$

$RP_{ij}(t)$ = price of brand i in channel type j at time t relative to the average price across brands over the period of analysis

$WD_{ij}(t)$ = distribution coverage of brand i in channel type j at time t weighted for volume of sales in product category

α_{0j} = basic propensity to buy in channel type j without influence of prior buyers in channel type j

α_1, α_2 = seasonality effects on propensity to buy

ϕ = impact of time

π = propensity or resistance to buy in a channel type other than hypermarkets or mass merchandisers through the influence of prior purchases in hypermarkets or mass merchandisers

γ = propensity or resistance to buy a brand through the influence of prior purchases of the competing brand

β = impact of price

δ = impact of distribution coverage

$\varepsilon_{ij}^{SQ}(t)$ = error term distributed $N(0, \sigma^{SQ})$

The proposed impacts of channel type on sales are above and beyond those that can be accounted for by any channel's discounting policy, which may accelerate adoption (Golder and Tellis 1997, Parker 1992, Tellis 1988). Therefore, in order to test our hypotheses about inter-channel competition, we must control for price effects. Furthermore, since consumers often anticipate and wait for price declines (Bayus 1991, 1992), we must consider price over time. In our model, the price of a brand in a channel is represented by $RP_{ij}(t)$. For normalization purposes, we express $RP_{ij}(t)$ relative to the average price across brands, channel types, and periods consistent with Bass, Krishnan, and Jain (1994) [3]. This

---

[3] We also tried employing relative measures of distribution coverage in order to reflect competitive effects. When we did so, the fit indices were similar for the sales equations but significantly worse for the distribution

specification maintains differences in prices across brands and time, since prices have a tendency to decrease after introduction (Golder and Tellis 1997)[4].

The 32-bit video game console product category is seasonal around the end-of-the-year holiday season. We account for this seasonality in Equation 1 with two dummy variables ($ON(t)$ and $DJ(t)$), which represent external influence factors that do not depend on prior adoption. Furthermore, we tested the significance of dummy variables for channel types to account for possible channel-specific effects on sales other than the effects that we propose in the conceptual model.

We control for the growth of sales of a brand in a given channel, beyond the explicitly included variables, using the parameter ϕ, consistent with Shankar (1997, 1999) and Shankar, Carpenter, and Krishnamurthi (1999). Furthermore, we represent the possibility that sales of a brand in all-under-one-roof value stores influenced sales in other channels using the parameter π. Finally, we represent the impact of sales of a brand on sales of its competitor using the parameter γ.

In addition to modeling sales as a function of coverage (market-making), we also model coverage as a function of sales (market-taking). Specifically, we model the distribution coverage of brand i in channel j at time t as a function of sales of brand i in channel j at time t. Equation 2 is the coverage equation.

$$WD_{ij}(t) = 1 - \exp\left\{-\left[a_0 + a_1 \cdot \ln\left(SQ_{ij}(t)\right) + b \cdot WD_{ij}(t-1) + \varphi_s \cdot \Delta_j^s \cdot WDS(t-1) + \varphi_h \cdot \Delta_h^s \cdot WDH(t-1)\right]\right\} + \varepsilon_{ij}^{WD}(t)$$

(2)

where:

---

coverage equations. The parameter estimates in the sales equations did not change significantly, although they were less likely to be significant.

[4] Advertising, another external influence, is substantial in this product category. Unfortunately, brand advertising expenditures are not available in the dataset. However, the pattern of expenditures followed the pattern of seasonality. Thus, the seasonal dummy variables should capture advertising effects, such that the omission of an explicit advertising expenditure variable does not bias the other results.

$WD_{ij}(t) =$ weighted distribution coverage of brand i in channel type j in period t

$SQ_{ij}(t) =$ sales quantity of brand i in channel type j in period t

$WD_{ij}(t-1) =$ weighted distribution coverage of brand i in channel type j one period ago

$\Delta_j^s = 0$ if $j =$ scouts (large specialists), and 1 otherwise

$\Delta_j^s = 0$ if $j =$ hypermarkets or mass merchandisers, and 1 otherwise

$WDS(t-1) =$ weighted distribution coverage of brand i in scout channel one period ago

$WDH(t-1) =$ weighted distribution coverage of brand i in hypermarket or mass merchandiser channel one period ago

$a_0 =$ intercept

$a_1 =$ simultaneous reaction of channel type j to sales of brand i at time t

$b =$ inertia, or effect of prior distribution coverage of brand i in channel j

$\varphi_s =$ propensity to imitate or avoid actions of scouts

$\varphi_h =$ propensity to imitate or avoid actions of hypermarkets or mass merchandisers

$\varepsilon_{ij}^{WD}(t) =$ error term distributed $N(0, \sigma^{WD})$

As in Equation 1, we specify distribution coverage as the percentage of distribution outlets in a channel that carried the brand at time t, weighted by sales volume in that channel at time t. Thus, the model's functional form represents saturation as 100% coverage.

For consumers, adoption, if it occurs, is final. However, distribution channels may first adopt and then discontinue (i.e., dis-adopt) a product (Jones and Mason 1990). The possibility that distribution channels may discontinue a product prevents the use of a typical diffusion model for the distribution coverage equation. Consequently, in Equation 2, we specify a time-dependent process with lagged distribution, thereby allowing for decreases in coverage over time. Equation 2 also shows decreasing returns to scale for the variables that affect brand distribution coverage.

Although the number of units of a brand stocked fluctuates seasonally, it is rare for outlets to de-list and then re-list products. Correspondingly, graphs of distribution coverage do not show this type of seasonality in any of the channels (see Figure 2).

In order to test for simultaneity, we model distribution coverage of a brand in a channel as a function of sales of the brand in the same channel. We also include a lagged distribution coverage term to test for inertia in the process, reflecting the switching costs of discontinuation. Finally, we model possible inter-channel imitation effects by including the lagged distribution coverage of scouts and all-under-one-roof value stores.

The model expressed in Equations 1 and 2 assumes that differences in sales growth across brands and channels are explained by marketing mix variables, the hypothesized imitation effects, and channel-specific effects that we account for using dummy variables. Inclusion of these channel-specific dummy variables enables us to pool the data across brands and channels without assuming that sales growth was the same across brands and channels. Although, in principle, it is possible to estimate the models separately for each channel and/or brand (completely unrestricted), the results are unstable due to the small number of degrees of freedom. Furthermore, estimating the models in this manner would not allow us to test our hypotheses, which involve effects across brands and/or channels. Thus, we estimated the model using all of the available data.

4. Results

We estimated Equations 1 and 2 simultaneously using two and three-stage nonlinear least squares. By estimating these equations simultaneously, we tested whether sales of brand i in channel j at time t depend on the distribution coverage of brand i in channel j at time t and vice-versa. The two and three-stage nonlinear least squares results are almost identical. Taking the correlations between the contemporaneous error terms of the two equations into consideration resulted in only minor improvements in efficiency. Nevertheless, we report the

three-stage results in Table 2[5]. The *R*-squared values for each equation in each country generally indicate satisfactory explanatory power for a descriptive model in which the parameters are constrained to be a function of the hypothesized variables. If predictive power were the sole objective, unconstrained separate estimations for each channel would be preferred in order to maximize fit. However, parameter estimates from separate estimations would not allow us to test whether the sales and coverage parameters vary across channels. Our results indicate the importance of distribution channels in the innovation adoption process. In fact, omitting the terms that represent these effects significantly impacts the results. Restricting the distribution parameters to be zero (i.e., the channel dummy variables, the impact of distribution coverage on sales, and the effects of coverage in all-under-one-roof value stores) reduces significantly the model fit in four of the five countries studied, with *F*-statistics of 113.17, 78.45, 61.77, 0.57, and 140.93 for France, Germany, the Netherlands, Spain, and the U.K. respectively. It follows that failing to explicitly recognize these distribution effects introduces a double bias - one due to the restrictions on the missing distribution variables, and a second due to the failure to recognize the simultaneity of the relationship between sales and distribution coverage.

4.1. Sales Equation

Examining Table 2 by rows suggests that the effects vary substantially by country. Table 3 summarizes the results qualitatively. Let us begin with the points of commonality in the sales model. All the estimated values of the α (propensity to buy) parameters are positive and statistically significant and typically different across channels, with the exception of

---

[5] The results reported for Germany and the UK are based on monthly time series data. In order to compare these results with those from the other three countries, which were based on bimonthly time series data, we re-estimated the model for these two countries aggregating the data bimonthly. The results were similar to those reported in Table 2 in terms of the signs and magnitude of the coefficients. However, the loss of degrees of freedom led some of the coefficients to become insignificant.

Spain, for which propensity to buy did not vary significantly between channels. Furthermore, consumers' propensity to buy one of the brands in any channel increased around the end-of-the-year holiday season, as indicated by the positive, statistically significant coefficients on the seasonal dummy variables in all countries, except the Netherlands, for which the coefficients are positive but not significant.

In general, the markets appear to have been relatively price insensitive. However, the price of a brand in a period, compared to its level across channels and time periods, significantly affected sales of the brand in France ($\beta = -1.638$, $p < .01$) and in the U.K. ($\beta = -1.13$, $p < .01$). Although the parameter estimates are not statistically significant in the other countries, they are all negative ($\beta = -0.53$ for Germany, $\beta = -0.862$ for the Netherlands, and $\beta = -0.161$ for Spain).

In two of the three markets in which Sega and Sony competed (France and the U.K.), cumulative sales of one brand decreased contemporaneous sales of the other ($\gamma = -4.8 \times 10^{-6}$ for France and $\gamma = -2.2 \times 10^{-6}$ for the U.K.). In the third competitive market (Spain) γ is positive, but not statistically significant, perhaps indicating that in this market competition helped legitimize the new product category.

The influence of coverage on sales varied substantially across markets. Channels made markets (i.e., coverage increased sales) in Germany ($\delta = 3.398$, $p < 0.01$) and the Netherlands ($\delta = 7.694$, $p < 0.05$, using a one-tail test), but not in France, Spain, or the U.K., for which the coefficients are all positive but not statistically significant. Lower coverage can result from decisions of channel members not to carry the product or a specific brand, or from a stock out. In turn, a stock out may result from insufficient inventories carried by channel members, or from a manufacturer strategy through which channels or channel members are supplied with different priority levels. Whatever the reasons, the results indicate that widespread availability of a product can, but does not always, spur sales. These results are

also important because the coverage term controls for distribution availability (and therefore stock outs) in the estimation of the inter-channel rivalry effects.

The product was subject to a significant growth phenomenon in three of the markets. The negative and statistically significant parameter estimates for the inverse of time (ϕ) in France ($\phi = -.996$, $p < .05$), Germany ($\phi = -1.37$, $p < .01$), and the U.K. ($\phi = -1.405$, $p < .01$) indicate that propensity to buy a given brand through a given distribution channel increased over time in these countries. Although ϕ is also negative for Spain and the Netherlands, it is not statistically significant for these countries.

In France, cumulative sales in all-under-one-roof value stores boosted sales in other channels ($\pi = 2.95 \times 10^{-6}$, $p < .01$). This booster effect could indicate that sales in all-under-one-roof value stores legitimized the product category in France. However, the role of "hypermarkets" is very specific in France and does not appear to duplicate in other European countries, for which the estimates of the all-under-one-roof value store sales parameters have a negative sign but are not statistically significant.

4.2. Coverage Equation

Coverage inertia within channels was significant in all countries except the Netherlands ($b = 1.926$ for France, $b = 1.307$ for Germany, $b = 0.693$ for Spain, and $b = 1.493$ for the U.K.). In these four countries, once a distribution channel carried a brand, it tended not to drop it

Although there is limited evidence of inter-channel reactivity, these patterns appear idiosyncratic to each country. In Germany, other channels tended to counter the coverage decisions of all-under-one-roof value stores ($\varphi_h = -0.424$, $p < .01$). However, estimates of the φ_h parameter were not statistically significant in all other countries, perhaps indicating that

the coverage decisions of all-under-one-roof value stores were difficult for members of other channels to observe.

We find evidence of a scout effect in the Netherlands ($\varphi_s = 0.786$, $p < .05$). The negative coefficient for Germany counters our hypothesis, although it is not statistically significant. To allow for slower reactions or anticipation, we introduced sales lagged one and two periods, as well as lead sales of one and two periods. However, the parameter estimates for these variables were typically not statistically significant, and in the rare instances in which they were marginally significant, they simply weakened the effect of contemporaneous sales without changing the substantive results.

Channels' coverage decisions do not appear to change as they gain experience after introducing the product. We estimated models that allowed the coefficients of sales, coverage in the scout channel, and coverage in all-under-one-roof value stores to vary with time, but did not find support for such adaptation theories. It is possible that these effects would appear over longer periods of time, and that our data series is too short to pick up such effects.

4.3. Marketing-Making and Market-Taking

The results indicate that channels engaged in market-making and market-taking simultaneously in Germany and the Netherlands. In these countries, sales boosted contemporaneous distribution coverage ($a_1 = 0.485$, $p < .01$ for Germany and $a_1 = 0.614$, $p < .01$ for the Netherlands), while coverage simultaneously boosted contemporaneous sales ($\delta = 3.398$, $p < .01$ for Germany and $\delta = 7.694$, $p < .05$ for the Netherlands) within channels. This sensitivity accords with the aforementioned lack of inertia in coverage in the Netherlands (b is insignificant in that country). However, we do not find evidence of simultaneous market-

making and market-taking in France, Spain, and the U.K. In these three countries, channels were market-takers but not market-makers.

5. Discussion and Conclusion

Our results suggest that different types of distribution channels play important competitive roles that can influence consumers' adoption of an innovative durable.

Specifically, our results indicate that mimetic isomorphism among channels occurs in some markets. We found that, in the Netherlands, troop channels (department stores, mail order stores, and photo retailers) imitated a scout channel's (electro retailers) coverage decisions in the new 32-bit video game console category. This is the first time that mimetic isomorphism has been demonstrated between distribution channels. Furthermore, our results suggest that, in the Netherlands, troops followed the decisions of scouts not only to increase but also to decrease coverage of a brand. Haveman (1993) notes that previous research has focused on mimetic isomorphism among actors deciding whether or not to embrace a practice, and calls for future research to establish whether this phenomenon also holds among actors deciding whether or not to decrease their usage of a practice. Our findings suggest that it does.

Furthermore, we contribute to the extant literature by identifying recognizable profiles of channel types that could act as leaders. Haveman (1993) and Greve (1996) suggest that leaders should be visible and considered successful by their peers if others are to follow them. We add that leaders must be motivated to move before the others (i.e., they must be innovators). In the context of distribution channels, specialists are motivated to move early, because they possess superior market information, acquired through their focus on meeting related needs. Furthermore, specialists must differentiate themselves in order to attract

consumers to pay them a visit. If specialists are large enough to be visible to competitors, and if they practice a conventional advice-and-selection strategy, it follows that they are in a position to serve as leaders. Other channels can see their actions and extrapolate from them to forecast the results that they can expect from imitating their decisions to increase or decrease coverage of a brand of innovative durable. Thus, our results suggest that manufacturers who seek to gain distribution for an innovative durable should consider targeting the scout channel early.

In this article, we also highlight a category of retailer that is outside of conventional taxonomies. The all-under-one-roof value store has the unusual property of being both a habitual store and a destination store. Although this combination should make it a potent competitor, our results suggest that sales in this channel are not necessarily harmful to outlets in competing channels. To the extent that hypermarkets really do price lower on average, they may take sales from other channels. We provide evidence of such price effects in France and the United Kingdom. But do sales in all-under-one-roof value stores *per se* impact sales in other channels, price aside?

Our results suggest that, beyond price effects, sales of 32-bit video game consoles in all-under-one-roof value stores did not spoil sales in other channels in any of the five markets that we studied. Furthermore, in France, we found that cumulative sales of a brand in all-under-one-roof value stores actually increased sales of that brand in other channels! We believe that this booster effect occurred because sales of a new durable in all-under-one-roof value stores suggest to remaining (hold-out) potential adopters that the product is less risky than it may initially seem, but not so much so as to induce purchase on the spot. Subsequently, these consumers, their interest aroused, visit other, usually more specialized, outlets, and then, after being aided and reassured by the advice and selection that these specialists provide, finally make a purchase. In sum, our results suggest that regulators should

use the rule of reason in evaluating the impact of these stores, rather than simply assuming that they are destructive to competition.

It is interesting then that, in Germany, coverage of 32-bit video game consoles in all-under-one-roof value stores led other channels to decrease their coverage of the product category. This result suggests that these other channels may have viewed coverage in all-under-one-roof value stores as a threat, consistent with the common assumption that sales in these stores are harmful to competitors. Our finding that, beyond price effects, sales in all-under-one-roof value stores do not erode (and may even boost) sales in other channels suggests that this sort of coverage avoidance may be irrational. In fact, our results suggest that it might even be optimal for other channels to increase coverage of an innovative durable when all-under-one-roof value stores increase their coverage of it.

In all five markets studied, we find that channels were market-takers. This fits the usual maxim that success begets success - In this context, sales begot coverage. The implication is that, in the aggregate, channels have accurate and timely sensing mechanisms that enable them to quickly spot trends and join them. Furthermore, if sales of a brand fall, channels tended to decrease their coverage of it. Nevertheless, our results suggest that this effect is tempered by the considerable coverage inertia that channels exhibited in four of the five markets studied, likely due to the large investments that channels must make in order to stock a new durable.

Finally, in Germany and the Netherlands, we find evidence that market-making and market-taking occurred simultaneously. Ours is the first demonstration of such an effect over extended periods of time in the context of a durable product category.

This study is exploratory. Although it demonstrates important aspects of distribution that have not been explored in previous research, it is subject to several limitations. In particular, although our empirical analyses encompass five countries, they are based on data

from only one new durable category in which competition was limited to two brands at best. Further research examining the generalizability of our results to other durables and more competitive environments would be valuable. Furthermore, video game console sales depend on consumers' expectations of the accompanying software. For both brands considered in this study, a wide range of software, highly rated in gaming magazines, existed at introduction. However, it is possible that the adoption of a brand was also influenced by these complementary products in a manner not fully captured by the inter-brand substitution effect. Future research could adapt the model specification that we present to include other causal factors and to fit a broader range of settings. Since the five retail environments that we analyzed do not exhaust the range of possible settings, tests in other retail environments would be useful to further establish generalizability.

In summary, this study finds that inter-type competition in channels is an important phenomenon that influences both the adoption of an innovation and the pattern of coverage the innovation enjoys. Grewal and Dharwadkar (2002) argue that the functioning and impact of channels depends on the institutional environment, and that firms strive not only for economic fitness but for social fitness as well. Our results support their arguments and suggest that further examining distribution types and functions is a promising area for future research.

Appendix

The channels described below correspond to GfK's groupings and labels. Their descriptions are based on market research reports (e.g. Retail Intelligence 2001, Euromonitor 1997).

Large electronic goods specialists carry a defined family of products (consumer electronics and electrics) and operate large stores (often carrying a chain's name), usually on the outskirts of population centers. These stores compensate for their relatively narrow product variety by offering a deep assortment of brands and models within a product type and by focusing on sales assistance and service. These specialists exist in France, where we designate them as *scouts*.

Electro retailers are similar to large electronic goods specialists but are more heterogeneous in size. They also specialize in electrical and electronic products, but with greater emphasis on the former. They vary considerably in size, for which most of them compensate by organizing into buying groups or chains, usually small to mid-size. This makes them large enough to be visible. We also designated as *scouts* where they exist (Germany, the Netherlands, and Spain).

Two other groups of specialists do not fit all of the scout criteria. In Spain and the U.K., *independent stores* are electric specialists, but are too small to be readily observable (as they do not participate in buying groups). Also in the U.K., *electric multi specialists* practice a very aggressive across-the-board discounting strategy, which makes it difficult for other channels to extrapolate their outcomes in order to forecast the effects of similar coverage in their own stores.

Several non-specialist retailer types exist. *Department stores* carry a variety of unrelated non-food merchandise arranged in boutique fashion within a large building. Typically, these stores feature selection and image but do not offer low prices. *Toy specialists* carried 32-bit video game consoles in Germany, but not elsewhere to a substantial degree. *Photo-retail stores* (essentially camera stores) carried 32-bit video game consoles in the Netherlands but not elsewhere. *Mail order* is a small outlet for video game consoles. This channel warranted separate coverage in France and the U.K., but was combined with department stores (often the parent firm) in the Netherlands and Germany, either because they were minor or because breaking them out would violate data confidentiality requirements.

The all-under-one-roof value store exists in two forms. *Hypermarkets* are well established in France, where they have achieved their greatest success worldwide. French hypermarket chains are also present in Spain. However, their market penetration in Spain is much lower than in France, due to restrictive zoning. In Germany, hypermarkets are smaller, with less coverage of durables and minimal merchandising support, and are harder for the consumer to find. Hypermarkets do not exist in the Netherlands. In the U.K., *mass merchandisers* fill the role of all-under-one-roof value store. These stores tend to be more focused on perishables than the continental hypermarkets.

References

Bass, Frank M., Trichy V. Krishnan, Dipak C. Jain. 1994. Why the Bass Model Fits Without Decision Variables. *Marketing Sci.* **13**(3) 203-223.

Bayus, Barry L. 1991. The Consumer Durable Replacement Buyer. *J. Marketing* **55**(1) 42-51.

Bayus, Barry L. 1992. The Dynamic Pricing of Next Generation Consumer Durables. *Marketing Sci.* **11**(3) 251-265.

Bronnenberg, Bart J., Vijay Mahajan, Wilfried R. Vanhonacker. 2000. The Emergence of Market Structure in New Repeat-Purchase Categories: The Interplay of Market Share and Retailer Distribution. *J. Marketing Res.* **37**(1) 16-31.

Cespedes, Frank V., Raymond E. Corey, V. Kasturi Rangan. 1988. Grey Markets: Causes and Cures. *Harvard Bus. Rev.* **66**(4) 75-82.

Coughlan, Anne T., Erin Anderson, Louis W. Stern, Adel I. El-Ansary. 2001. *Marketing Channels,* 6th ed. Prentice Hall, Englewood Cliffs, NJ.

Eliashberg, Jehoshua, Jedid-Jah Jonker, Mohanbir S. Sawhney, Berend Wierenga. 2000. MOVIEMOD: An Implementable Decision-Support System for Prerelease Market Evaluation of Motion Pictures. *Marketing Sci.* **19**(3) 226-43.

Euromonitor. 2001. Western European Market for Games and Toys. *Market Res. Europe* **33**(11) 1-42.

Euromonitor. 1997. Large Kitchen Appliances in Germany. *Market Res. Europe* **29**(7) 189-267.

Farley, John U., Harold A. Leavitt. 1968. A Model of the Distribution of Branded Personal Products in Jamaica. *J. Marketing Res.* **5**(4) 362-368.

Gatignon, Hubert, Thomas S. Robertson. 1985. A Propositional Inventory for New Diffusion Research. *J. Consumer Res.* **11**(4) 849-867.

Golder, Peter N., Gerard J. Tellis. 1997. Will It Ever Fly? Modeling the Takeoff of Really New Consumer Durables. *Marketing Sci.* **16**(3) 256-270.

Greve, Henrich R. 1996. Patterns of Competition: The Diffusion of a Market Position in Radio Broadcasting. *Admin. Sci. Quart.* **41**(1) 29-60.

Grewal, Rajdeep, Ravi Dharwadkar. 2002. The Role of the Institutional Environment in Marketing Channels. *J. Marketing* **66**(3) 82-97.

Haveman, Heather A. 1993. Follow the Leader: Mimetic Isomorphism and Entry Into New Markets. *Admin. Sci. Quart.* **38**(4) 593-627.

Helsen, Kristiaan, Kamel Jedidi, Wayne S. DeSarbo. 1993. A New Approach to Country Segmentation Utilizing Multinational Diffusion Patterns. *J. Marketing* **57**(4) 60-71.

Inman, J. Jeffrey, Russell S. Winer. 1998. Where the Rubber Meets the Road: A Model of In-store Consumer Decision Making. Working Paper, Marketing Science Institute, Boston, MA.

Jones, J. Morgan, Charlotte. H. Mason. 1990. The Role of Distribution in the Diffusion of New Durable Consumer Products. Working Paper, Marketing Science Institute, Boston, MA.

Jones, J. Morgan, Christopher J. Ritz. 1991. Incorporating Distribution into New Product Diffusion Models. *Internat. J. Res. Marketing* **8**(1) 91-112.

Leeflang, Peter S. H., W. Fred van Raaij. 1995. The Changing Consumer in the European Union: A 'Meta Analysis'. *Internat. J. Res. Marketing* **12**(4) 373-87.

Lehmann, Donald H., Charles B. Weinberg. 2000. Sales through Sequential Distribution Channels: An Application to Movies and Videos. *J. Marketing* **64**(3) 18-33.

Lele, Milind. 1986. Matching Your Channels to Your Product's Life Cycle. *Bus. Marketing*, 61-69.

Levy, Michael, Barton A. Weitz. 1998. *Retailing Management*, 3rd ed. Irwin/McGraw-Hill, Boston, MA.

Lewison, Dale M. 1994. *Retailing*, 5th ed. Macmillan, New York, NY.

Marketing News. 2001. Honomichl Global 25. *Marketing News* (August 13) H3-H14.

Miller, Chip E., James Reardon, Denny E. McCorkle. 1999. The Effects of Competition on Retail Structure: An Examination of Intratype, Intertype, and Intercategory Competition. *J. Marketing* **63**(4) 107-20.

Moore, Geoffrey A. 1991. *Crossing the Chasm: Marketing and Selling High-Tech Products to Mainstream Consumers*. Harper Business, New York, NY.

Neelamegham, Ramya, Pradeep Chintagunta. 1999. A Bayesian Model to Forecast New Product Performance in Domestic and International Markets. *Marketing Sci.* **18**(2) 115-36.

Parker, Philip M. 1992. Price Elasticity Dynamics Over the Adoption Life Cycle. *J. Marketing Res.* **29**(3) 358-367.

Parsons, Leonard J. 1974. An Econometric Analysis of Advertising, Retail Availability, and Sales of a New Brand. *Management Sci.* **20**(6) 938-47.

Retail Intelligence. 2001. Sector Review: Consumer Electronics. *Consumer Goods Europe* **23**(459).

Retail Intelligence. 1998. Small Electrical Appliances in Germany. *Consumer Goods Europe* **20**(431) 99-137.

Shankar, Venkatesh. 1997. Pioneers' Marketing Mix Reactions to Entry in Different Competitive Game Structures: Theoretical Analysis and Empirical Illustration. *Marketing Sci.* **16**(3) 271-293.

Shankar, Venkatesh. 1999. New Product Introduction and Incumbent Response Strategies: Their Inter-Relationship and the Role of Multimarket Contact. *J. Marketing Res.* **36**(3) 327-344.

Shankar, Venkatesh, Gregory Carpenter, Lakshman Krishnamurthi. 1999. The Advantages of Entering in the Growth Stage of the Product Life Cycle: An Empirical Analysis. *J. Marketing Res.* **36**(2) 269-276.

Tellis, Gerard J. 1988. The Price Elasticity of Selective Demand: A Meta-Analysis of Econometric Models of Sales. *J. Marketing Res.* **25**(4) 331-341.

Figure 1 Unit Sales in Europe

Sales in France by Channel

Legend:
- SEGA and SONY in Department Stores
- SEGA and SONY in Hypermarkets
- SEGA and SONY in Large Electronic Goods Specialists
- SEGA and SONY in Mail Order

Sales in Germany by Channel

Legend:
- SONY in Department Stores / Mail Order
- SONY in Hypermarkets
- SONY in Electro Retailers
- SONY in Toy Specialists

Sales in the United Kingdom by Channel

Legend:
- SONY in Independents
- SEGA and SONY in Mass Merchandisers
- SEGA and SONY in Electric Multi Specialists
- SEGA and SONY in Mail Order

Sales in the Netherlands by Channel

Legend:
- SONY in Department Stores / Mail Order
- SONY in Electro Retailers
- SONY in Photo Retailers

Sales in Spain by Channel

Legend:
- SEGA and SONY in Hypermarkets
- SEGA and SONY in Independents
- SEGA and SONY in Associated Electro Retailers

35

Figure 2   Illustrative Distribution Coverage by Channel Type for One Brand In One Country
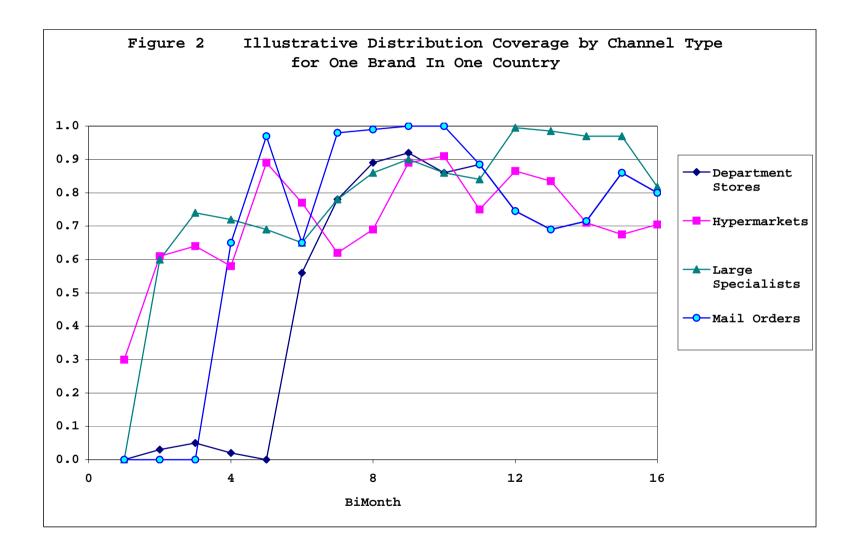
Table 1 Channels and their Roles by Country with Descriptive Statistics

Country	Channels	Scout	Troop	All-Under-One-Roof Value Store	Large, Named Example Member of Channel Type	Average Channel Share of Market	SONY Average Price (in local currency)	SEGA Average Price (in local currency)	SONY Average Distribution Coverage	SEGA Average Distribution Coverage
France	Department Stores		√		BHV	0.013	1517	1842	0.600	0.629
	Hypermarkets		√	√	Carrefour	0.740	1575	1982	0.907	0.715
	Large Electronic Goods Specialists	√			Hyper Media	0.201	1647	1799	0.848	0.825
	Mail Order		√		La Redoute	0.046	1658	1750	0.750	0.841
Germany	Department Store / Mail Order		√		Hertie / Quelle	0.349	292		0.955	
	Electro Retailers	√			Fröschl	0.419	287	N/A	0.905	N/A
	Hypermarkets		√	√	Allkauf	0.122	285		0.861	
	Toy Specialists		√		Vedes	0.110	324		0.807	
Nether-lands	Department Stores / Mail		√		Hema/Otto	0.207	443		0.940	
	Photo Retailers		√	N/A	Foto Plus	0.360	424	N/A	0.964	N/A
	Electro Retailers	√			Megapool	0.433	362		0.897	
Spain	Hypermarkets		√	√	Continente	0.466	42136	55003	0.893	0.759
	Independents		√		Too small to name	0.283	48155	57210	0.631	0.640
	Associated Electro Retailers	√			Fadesa	0.251	46647	56510	0.550	0.368
United Kingdom	Electric Multi Specialists				Dixon's	0.611	151	137	0.976	0.971
	Mail Order	N/A	N/A		Empire States	0.128	261	284	0.963	0.853
	Mass Merchandisers			√	Tesco	0.240	161	172	0.972	0.870
	Independents				Too small to name	0.021	157	N/A	0.994	N/A

37

Table 2 Nonlinear Three Stage Least Squares Estimation

Sales Growth Equation Parameter	Effect of	France Estimate (*t*-value)		Germany Estimate (*t*-value)		Netherlands Estimate (*t*-value)		Spain Estimate (*t*-value)		UK Estimate (*t*-value)	
α_0	Propensity to buy in Channel 1 (see Table 1 for channel numbers)	5.785	(15.16)****	9.847	(93.49)****	7.302	(19.43)****	5.316	(10.28)****	5.042	(27.73)****
$\overline{\alpha}_0$	Dummy for Sony observations	0.037	(0.11)	N/A		N/A		0.599	(1.71)*	1.536	(9.27)****
α_{02}	Channel Dummy 1	4.520	(10.94)****	-1.011	(-6.71)****	0.678	(1.76)	-		2.281	(16.75)****
α_{03}	Channel Dummy 2	2.494	(6.36)****	0.152	(1.52)	0.423	(2.39)****	-		3.129	(19.64)****
α_{04}	Channel Dummy 3	1.254	(3.00)****	-0.779	(-4.46)****	N/A		N/A		2.335	(8.46)****
α_1	Seasonal Dummy 1	0.213	(0.98)	0.722	(7.21)**	0.359	(1.14)	0.493	(1.74)*	0.601	(5.31)**
α_2	Seasonal Dummy 2	1.306	(5.71)**	0.922	(9.59)**	0.196	(0.99)	2.055	(6.58)**	0.897	(8.17)**
ϕ	Inverse of time since introduction within channel	-1.996	(-1.79)*	-1.370	(-4.46)**	-0.154	(-0.32)	-0.771	(-0.65)	-1.405	(-2.51)**
π	Cumulative sales in hypermarkets	2.95E-6	(3.23)****	-7.8E-7	(-1.12)	N/A		-1.0E-5	(-0.11)	1.56E-7	(0.35)
γ	Cumulative sales of competing brand across channels	-4.8E-6	(-4.86)****	N/A		N/A		1.08E-4	(1.75)	-2.2E-6	(-9.32)****
β	Relative price across brands and periods	-1.638	(-2.43)**	-0.530	(-1.30)	-0.862	(-1.12)	-0.161	(-0.27)	-1.134	(-3.72)**
δ	Weighted distribution coverage in channel	0.617	(1.24)	3.398	(4.12)**	7.694	(1.78)*	0.925	(1.05)	3.016	(1.56)

Table 2 Nonlinear Three Stage Least Squares Estimation (continued)

Coverage Equation Parameter	Effect of	France Estimate (*t*-value)		Germany Estimate (*t*-value)		Netherlands Estimate (*t*-value)		Spain Estimate (*t*-value)		UK Estimate (*t*-value)	
a_0	Intercept	0.032	(0.63)	-2.277	(-4.16)****	-1.859	(-1.42)	-0.287	(-0.83)	-8.607	(-5.41)****
a_1	Contemporaneous sales in channel	0.069	(3.42)**	0.485	(5.96)**	0.614	(2.93)**	0.157	(1.70)*	1.848	(5.85)**
b	Weighted distribution coverage in channel in previous period	1.926	(7.28)**	1.307	(3.46)**	-0.098	(-0.21)	0.693	(1.64)*	1.493	(7.81)**
φ_s	Weighted distribution coverage in scout channel in previous period	0.034	(0.30)	-0.623	(-2.26)	0.786	(1.77)*	0.740	(1.31)	N/A	
φ_h	Weighted distribution coverage in hypermarkets in previous period	-0.228	(-1.43)	-0.424	(-2.83)****	N/A		-0.316	(-1.14)	0.306	(0.96)
n		118		132		61		53		294	
R^2 for sales growth equation (N2SLS)		0.876		0.855		0.657		0.689		0.854	
R^2 for coverage equation (N2SLS)		0.818		0.597		0.318		0.374		0.411	

*significant at α =0.05 (1-tail test)   **significant at α =0.01 (1-tail test)
*** significant at α =0.05 (2-tail test)   ****significant at α =0.01 (2-tail test)

39

Table 3 Summary of Findings

	France	Germany	Netherlands	Spain	United Kingdom
Brand Sales (<u>Adoption</u>) in a Channel					
Price Effect on Sales Beyond Growth Effect (Price cuts increase sales)	✓	NO	NO	NO	✓
Market-Making Effect Beyond Growth Effect (Coverage drives sales)	NO	✓	✓	NO	NO
All-Under-One-Roof Value Store Sales Booster Effect (Positive effect on sales in other channels)	✓	NO	N/A (No such store)	NO	NO
Brand Competition (Cumulative sales of one brand across channels hurt sales of the other brand)	✓	N/A (Only Sony)	N/A (Only Sony)	NO	✓
Brand <u>Coverage</u> in a Channel					
Inertia (Current coverage follows coverage last period)	✓	✓	NO	✓	✓
Market-Taking Effect (Sales drive coverage)	✓	✓	✓	✓	✓
Troops Follow Scouts (Other channels follow coverage of scouts)	NO	NO	✓	NO	N/A (No such store)
All-Under-One-Roof Value Store Coverage Avoidance Effect (Other channels decrease coverage)	NO	✓	N/A (No such store)	NO	NO

INSEAD
The Business School
for the World