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# Forget the Product Life Cycle Concept!

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*The product life cycle has been described, analyzed, and annotated so often in the literature of marketing that it has become a “given” in the minds of many executives. This article challenges it—not just certain aspects or interpretations of the life cycle notion, but its very concept and existence. Moreover, the authors contend that the notion has led many companies to make costly mistakes and to pass up promising opportunities. Management would be far better off, they believe, if it employed an efficient information system for each product, deciding in a pragmatic way how and whether to continue promoting it. They describe some elements of a system that will give managers the data they need.*

Not long ago, a leading manufacturer was promoting a brand of floor wax. After a steady period of growth, the sales of the product had reached a plateau. Marketing research suggested that an increase in spot television advertising, backed by a change in copy, would help the brand to regain its momentum. Feeling that the funds could be better spent in launching a new product, management vetoed the proposal.

But the new product failed to move off the shelf despite heavy marketing support. At the same time, the old brand, with its props pulled out from under it, went into a sales decline from which it never recovered. The company had two losers on its hands.

This experience is not atypical among the nation's

corporations. Many strongly believe that brands follow a life cycle and are subject to inevitable death after a few years of promotion. Like so many fascinating but untested theories in economics, the product life cycle concept (PLC) has proved to be remarkably durable, and has been expounded eloquently in numerous publications. In fact, its use in professional discussions seems to add luster and believability to the insistent claim that marketing is close to becoming a science.

The PLC concept, as developed by its proponents, is fairly simple. Like human beings or animals, everything in the marketplace is presumed to be mortal. A brand is born, grows lustily, attains maturity, and then enters declining years, after which it is quietly buried. *Exhibit 1* shows profit-volume relationships that are supposed to prevail in a typical PLC.

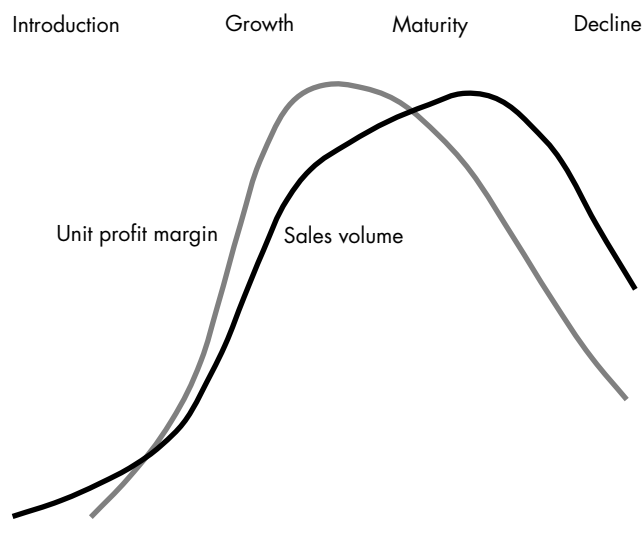
Even a cursory analysis shows flaws in this picture. In the biological world the length of each stage in the cycle is fixed in fairly precise terms; moreover, one stage follows another in an immutable and irreversible sequence. But neither of these conditions is characteristic of the marketing world. The length of different stages tends to vary from product to product. Some items move almost directly from introduction to maturity and have hardly any growth stage. Other products surge to sudden heights of fashion, hesitate momentarily at an uneasy peak, and then quickly drop off into total oblivion. Their introductory and maturity stages are barely perceptible.

What is more, it is not unusual for products to gain “second lives” or even “reincarnation.” Thanks to brilliant promotion, many brands have gone from

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## Exhibit I Generalized PLC pattern for sales and profits



the maturity stage not to decline and death but to a fresh period of rapid growth. Later in this article we shall examine a few examples of the unlikelike and noncyclical behavior of products.

Despite the lack of correspondence between the marketing and the biological worlds, PLC advocates continue to remain dogmatic and proclaim that their concept has wide applications in different areas of planning and policy formulation. *Exhibit II* gives a bird's-eye view of the four stages of the PLC and the type of marketing action that, according to proponents, is suitable for each stage. While there is no unanimity among PLC advocates on details of this pattern, the basic relationships have been described repeatedly by authorities.<sup>1</sup>

Most writers present the PLC concept in qualitative terms, in the form of idealization without any empirical backing. Also, they fail to draw a clear distinction between product class (e.g., cigarettes), product form (e.g., filter cigarettes), and brand (e.g., Winston). But, for our purpose this does not matter. We shall see that it is not possible to validate the model at any of these levels on aggregation.

## Myths of Class and Form

Many product classes have enjoyed and will probably continue to enjoy a long and prosperous maturity

stage—far more than the human life expectancy of three score years and ten. Good examples are Scotch whisky, Italian vermouth, and French perfumes. Their life span can be measured, not in decades, but in centuries. Almost as durable are such other product classes as automobiles, radios, mouthwashes, soft drinks, cough remedies, and face creams. In fact, in the absence of technological breakthroughs, many product classes appear to be almost impervious to normal life cycle pressures, provided they satisfy some basic need, be it transportation, entertainment, health, nourishment, or the desire to be attractive.

As for product form, it tends to exhibit less stability than does product class. Form is what most PLC advocates have in mind when they speak of a generalized life cycle pattern for a "product." Even here the model is not subject to precise formulation. Theoretically, it presumes the existence of some rules indicating the movement of the product from one stage to another. However, when one studies actual case histories, it becomes clear that no such rules can be objectively developed.

For evidence of this conclusion, consider *Exhibit III*, which gives examples of life cycles of product forms in four diverse product classes: cigarettes, make-up bases, toilet tissues, and cereals. In order to present a realistic picture, the sales (whether in dollars or units) have been adjusted to a common base in the light of varying annual consumer expenditures on nondurable goods. In this way, it becomes possible to remove changes that do not reflect life cycle patterns, e.g., population growth, inflationary pressures, and cyclical economic fluctuation.

## Unpredictable variations

Although in most cases it is not feasible to go back far enough to get a complete birth-to-death portrayal, certain facts are obvious from *Exhibit III*:

- With the exception of nonfilter cigarettes, year-to-year variations make it difficult to predict when the next stage will appear, how long it will last, and to what levels the sales will reach.
- One cannot often judge with accuracy in which phase of the cycle the product form is.
- The four major phases do not divide themselves into clear-cut compartments. At certain points, a product may appear to have attained maturity when actually it has only reached a temporary plateau in the growth stage prior to its next big upsurge.

One of the most thorough attempts to validate the PLC concept for product classes and product forms

<sup>1</sup> See, for example, David J. Luck, *Product Policy and Strategy* (Englewood Cliffs, N.J.: Prentice-Hall, 1972); Arch Patton, *Top Management's Stake in a Product's Life Cycle* (New York: McKinsey & Co., Inc., June 1959); Thomas A. Staudt and Donald A. Taylor, *A Managerial Introduction to Marketing*, 2d ed. (Engle-

wood Cliffs, N.J.: Prentice-Hall, 1970); and Chester R. Wasson, *Product Management* (St. Charles, Ill.: Challenge Books, 1971).

## Exhibit II How PLC advocates view the implications of the cycle for marketing action

Effects and responses	Stages of the PLC			
	Introduction	Growth	Maturity	Decline
Competition	None of importance	Some emulators	Many rivals competing for a small piece of the pie	Few in number with a rapid shakeout of weak members
Overall strategy	Market establishment; persuade early adopters to try the product	Market penetration; persuade mass market to prefer the brand	Defense of brand position; check the inroads of competition	Preparations for removal; milk the brand dry of all possible benefits
Profits	Negligible because of high production and marketing costs	Reach peak levels as a result of high prices and growing demand	Increasing competition cuts into profit margins and ultimately into total profits	Declining volume pushes costs up to levels that eliminate profits entirely
Retail prices	High, to recover some of the excessive costs of launching	High, to take advantage of heavy consumer demand	What the traffic will bear; need to avoid price wars	Low enough to permit quick liquidation of inventory
Distribution	Selective, as distribution is slowly built up	Intensive; employ small trade discounts since dealers are eager to store	Intensive; heavy trade allowances to retain shelf space	Selective; unprofitable outlets slowly phased out
Advertising strategy	Aim at the needs of early adopters	Make the mass market aware of brand benefits	Use advertising as a vehicle for differentiation among otherwise similar brands	Emphasize low price to reduce stock
Advertising emphasis	High, to generate awareness and interest among early adopters and persuade dealers to stock the brand	Moderate, to let sales rise on the sheer momentum of word-of-mouth recommendations	Moderate, since most buyers are aware of brand characteristics	Minimum expenditures required to phase out the product
Consumer sales and promotion expenditures	Heavy, to entice target groups with samples, coupons, and other inducements to try the brand	Moderate, to create brand preference (advertising is better suited to do this job)	Heavy, to encourage brand switching, hoping to convert some buyers into loyal users	Minimal, to let the brand coast by itself

was carried out a few years ago by the Marketing Science Institute.<sup>2</sup> The authors examined over 100 product categories in the food, health, and personal-care fields, and measured the number of observations that did not follow the expected sequence of introduction, growth, maturity, and decline. They compared these actual inconsistent observations with simulated sequences of equal length generated with the aid of random numbers. The hypothesis developed was that the PLC concept had some “raison d’être” only if it was capable of explaining sales behavior better than a chance model could.

The outcome of this test was discouraging. Only 17% of the observed sequences in product classes and 20% of the sequences in product forms were significantly different from chance (at the confidence level of 99 times out of 100). The authors reached the following conclusion:

2 See Rolando Polli and Victor J. Cook’s “A Test of the Product Life Cycle as a Model of Sales Behavior,” *Market Science Institute Working Paper*, November 1967, p. 43, and also their “Validity of the Product Life Cycle,” *The Journal of Business*, October 1969, p. 385.

“After completing the initial test of the life cycle expressed as verifiable model of sales behavior, we must register strong reservations about its general validity, even stated in its weakest, most flexible form. In our tests of the model against real sales data, it has not performed uniformly well against objective standards over a wide range of frequently purchased consumer products, nor has it performed equally well at different levels of product sales aggregation. . . . Our results suggest strongly the life cycle concept, when used without careful formulation and testing as an explicit model, is more likely to be misleading than useful.”<sup>3</sup>

## No Life Cycles for Brands

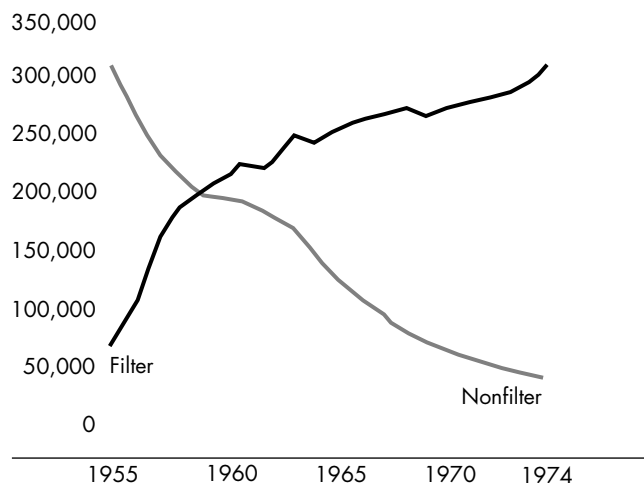
When it comes to brands, the PLC model has even less validity. Many potentially useful offerings die in the introductory stage because of inadequate product development or unwise market planning, or both.

3 See Polli and Cook, “A Test of the Product Life Cycle,” p. 61.

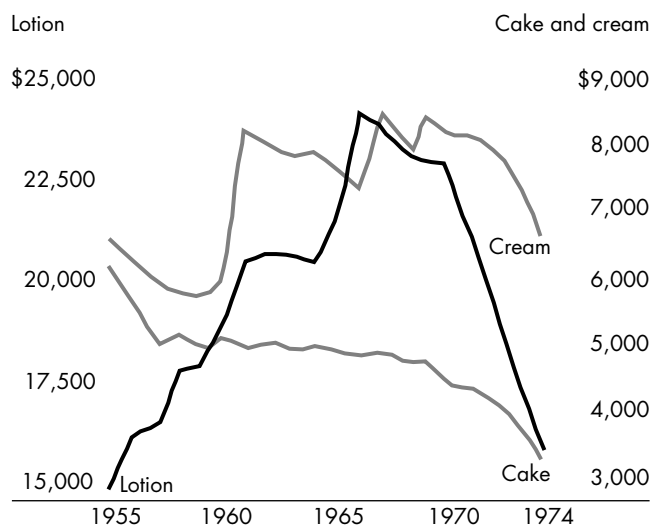
### Exhibit III Life cycle patterns of product forms in four product classes

#### 1. Cigarettes

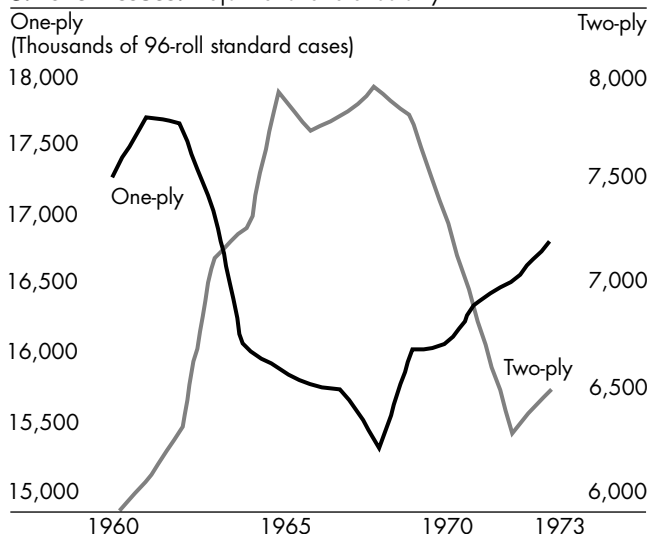
(Millions of units)



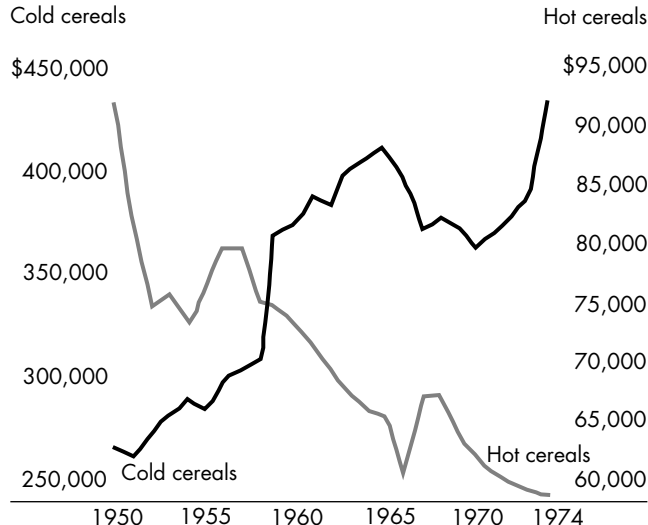
#### 2. Make-up bases



#### 3. Toilet tissues: major national brands only



#### 4. Cereals



Sources: For 1, *Advertising Age*; for 2 and 4, *Supermarketing and Food Topics*; for 3, J. Walter Thompson research.

Note: Dollar sales figures are in thousands of dollars. Both unit and dollar sales are adjusted to a common base of consumer nondurable goods expenditures.

The much-expected ebullient growth phase never arrives. Even when a brand survives the introductory stage, the model in most cases cannot be used as a planning or a predictive tool.

Exhibit IV shows the life cycle trends of certain brands in the product forms earlier discussed. The evidence for the PLC concept is discouraging. With the exception of nonfilter cigarettes, the brands tend to have different sales patterns, and the product-form curves throw no light on what the sales would be in the future. All that can be said is that if a product form (e.g., nonfilter cigarettes) is truly in a final declining stage, it is very difficult for a brand (e.g.,

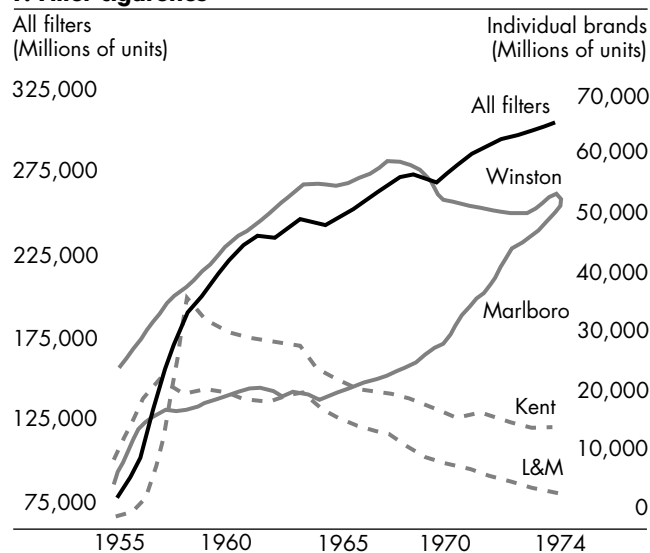
Chesterfield) to reverse the trend. However, with respect to the first three stages of the PLC, no firm conclusions can be drawn about brand behavior from the product-form curve.

Some PLC advocates have tried to salvage their theory by introducing different types of curves to fit different situations. For instance, one authority, in a study of 258 ethical drug brands, suggests six different PLC curves<sup>4</sup>; another develops no less than nine variants: marketing specialties, fashion cycle,

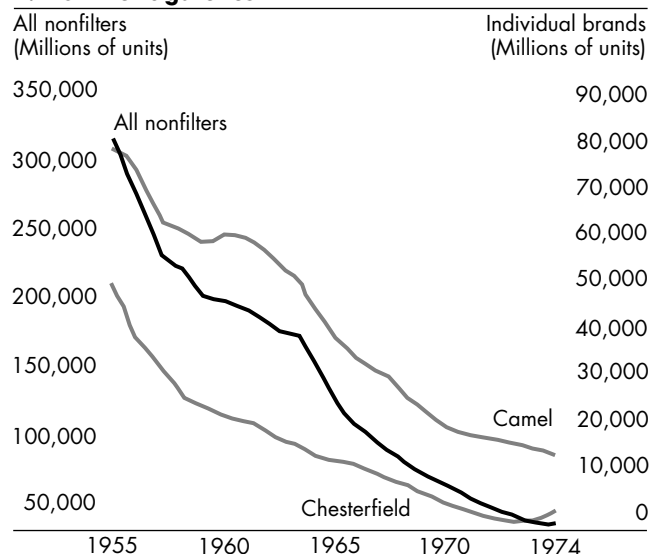
<sup>4</sup> See William E. Cox, "Product Life Cycles as Marketing Models," *The Journal of Business*, October 1967, p. 375.

## Exhibit IV Life cycle patterns of brands compared with product forms

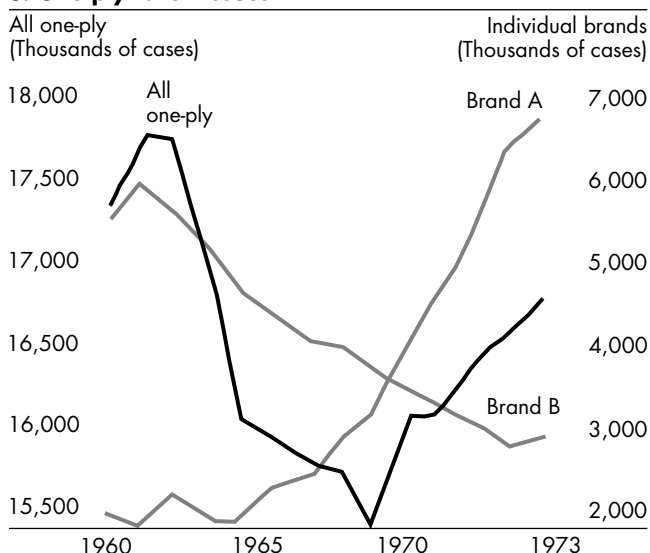
### 1. Filter cigarettes



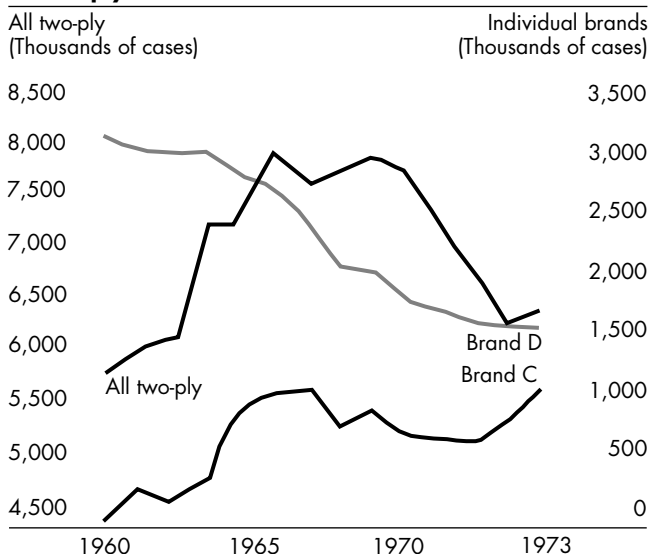
### 2. Nonfilter cigarettes



### 3. One-ply toilet tissues



### 4. Two-ply toilet tissues



Source: For cigarettes, *Advertising Age*; for toilet tissues, J. Walter Thompson research.

Note: All sales figures are adjusted to a common base of consumer nondurable goods expenditures.

high-learning products, low-learning products, pyramided cycles, instant busts, abortive introductions, straight fads, and fads with significant residual markets.<sup>5</sup>

Such efforts at curve fitting leave much to be desired. From the standpoint of practical marketing, they are sterile exercises in taxonomy. It would be better to admit that the whole PLC concept has little value in the world of brands. Clearly, the PLC is a *dependent* variable which is determined by market-

ing actions; it is not an *independent* variable to which companies should adapt their marketing programs. Marketing management itself can alter the shape and duration of a brand's life cycle.

Of course, a company may not be able to extend the maturity phase indefinitely. When a brand passes "over the hill" in sales, no marketing strategies are effective anymore. Such a drop may be due to changes in consumer tastes and values, or to the fact that users have shifted their preference to a new and improved competitive product. In these instances, euthanasia has to be quietly performed so that the com-

<sup>5</sup> See Wasson's *Product Management*.

pany's capital resources can be used profitably in other ventures.

### Blunders due to PLC blinders

Unfortunately, in numerous cases a brand is discontinued, not because of irreversible changes in consumer values or tastes, but because management, on the basis of the PLC theory, believes the brand has entered a dying stage. In effect, a self-fulfilling prophecy results.

Suppose a brand is acceptable to consumers but has a few bad years because of other factors—for instance, poor advertising, delisting by a major chain, or entry of a “me-too” competitive product backed by massive sampling. Instead of thinking in terms of corrective measures, management begins to feel that its brand has entered a declining stage. It therefore withdraws funds from the promotion budget to finance R&D on new items. The next year the brand does even worse, panic increases, and new products are hastily launched without proper testing. Not surprisingly, most of the new products fail. Thus management has talked itself into a decline by relying solely on the PLC concept.

The annals of business are full of cases of once strong and prosperous brands that have died—if not with a bang, at least with a whimper—because top management wore PLC blinders. A good example is the case of Ipana. This toothpaste was marketed by a leading packaged-goods company until 1968, when it was abandoned in favor of new brands. In early 1969, two Minnesota businessmen picked up the Ipana name, concocted a new formula, but left the package unchanged. With hardly any promotion, the supposedly petrified demand for Ipana turned into \$250,000 of sales in the first seven months of operation. In 1973, a survey conducted by the Target Group Index showed that, despite poor distribution, the toothpaste was still being used by 1,520,000 adults. Considering the limited resources of the owners, the brand would have been in an even stronger position had it been retained by its original parent company and been given appropriate marketing support.

### Planning without PLC

In a slightly different vein, there are several cases of companies that have ignored the PLC concept and achieved great success through imaginative marketing strategies. The classic example of the 1940s and 1950s is DuPont's nylon. This product, whose original uses were primarily military (parachutes, rope, and so on), would have gradually faded into oblivion had the company believed that the declining sales curve signaled death. Instead, management boldly decided to enter the volatile consumer textile mar-

ket. Women were first induced to switch from silk to nylon stockings. The market was later expanded by convincing teenagers and subteens to start wearing hosiery. Sales grew even further when the company introduced tinted and patterned hosiery, thereby converting hosiery from a neutral accessory to a central element of fashion.

Here are other brands whose productive lives have been stretched many decades by sound planning.

- Listerine Antiseptic has succeeded in retaining its lion's share of the mouthwash market despite heavy competitive pressures and the introduction of strongly supported new brands.
- Marlboro is fast edging up to top place in the highly segmented filter-cigarette market by focusing on the same basic theme—only developing different variations of it.
- Seven-up, whose growth had been impeded because of its image strictly as a mixer, now has more room to expand as a result of taking the “Uncola” position against Coke and Pepsi.

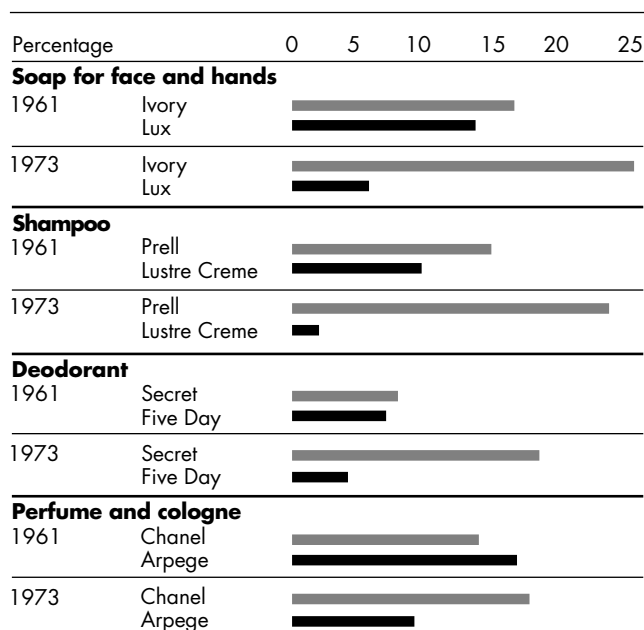
This list could be expanded considerably. The following are ten other leading brands that have been around for a long time but are still full of vitality because of intelligent marketing: Anacin analgesic, Budweiser beer, Colgate toothpaste, Dristan cold remedy, Geritol vitamin-mineral supplement, Jell-o gelatin, Kleenex facial tissue, Maxwell House coffee, Planter's peanuts, and Tide detergent.

The importance of a proper marketing effort is further illustrated in *Exhibit V*. Here are comparisons of rival brands in various product forms. In 1961, the brands in each pairing had approximately the same share of usage. However, by 1973 one of each two was able to move up substantially, while the other took a reverse turn. Had the PLC forces played an all-important role during this 12-year span, both brands in each pair would have gone downhill. This exhibit demonstrates that the judicious use of advertising and other marketing tools can check the erosion of a consumer franchise. If a brand is widely available at a competitive price, and has certain benefits which are meaningful to a large segment of the population, then well-conceived and properly directed marketing communications will produce the right response at the checkout counter. This is true regardless of whether the brand has been in existence for two years or twenty.

### Capitalizing on Today's Products

A major disservice of the PLC concept to marketing is that it has led top executives to overemphasize

## Exhibit V Growth and decline of brand usage share within product forms, 1961 and 1973



Source: For 1961, "Beauty Secrets," *Good Housekeeping*; for 1973, *Target Group Index Reports* for 1974.

new product introduction. This route is perilous. Experience shows that nothing seems to take more time, cost more money, involve more pitfalls, or cause more anguish than new product programs.

Actual statistics are hard to come by, but it is generally believed in business circles that the odds are four to one against a new product becoming a winner. Yet, like a new baby in the house, the new product too often gets all the attention while the older brands are pretty much neglected.

The point is not that work on new products should be halted. Obviously work should continue, for new products are vital to the future. Yet it is today's products that are closest to the cash register; the company's chances of generating greater profits normally depend on them. It is foolish for a corporation to invest millions of dollars to build goodwill for a brand, then walk away from it and spend additional millions all over again for a new brand with no consumer franchise.

In these days of inflation, shortages, and slow economic growth, industry can ill afford a system that pushes brand proliferation too far. The challenge to management lies in avoiding market fragmentation and in building up large national franchise for a few key brands through heavy and intelligent marketing support.

## An effective system

How can such support be given? Management needs an approach that will help it to position the brand to a large segment of the population, evaluate different options, and foresee opportunities or dangers that lie ahead. Such an approach can be put together by combining strategic research and tracking studies with marketing and communications models. Let us now consider one example from the snack food industry.

*Getting started* A branded drink had a small, select group of loyal users who liked its strong, bitter taste. But sales for some time had been gradually declining. Despite the advice of some PLC-oriented marketing consultants, management was opposed to discontinuing the line and to bringing out a new item. Instead, it initiated a segmentation study in order to find out ways of increasing that franchise among the large body of nonusers. The results indicated that the brand could be best positioned against one segment of the market—nutrition-conscious housewives who took their role as custodians of family health and well-being very seriously.

Although never mentioned before in advertising, it so happened that the tangy bitterness of the brand was mainly due to the addition of certain "natural" ingredients. Also this benefit was distinctive and not generic to the whole product category. Hence the company had a clear edge over competition.

New advertising was prepared around nutrition, wholesomeness, and the added ingredients. At the same time, in order to retain loyal users, management continued the old 30-second TV spots emphasizing strong taste. On the research side, arrangements were made to obtain from consumer panels and tracking studies quarterly information on the brand's "share of mind" and share of market. The emphasis in the tracking research was on the target groups, namely, housewives who were (1) fond of the taste, and (2) neutral toward taste but health conscious.

*Building an effective model* After three years, it was felt that sufficient data had been collected to start building a marketing-communications model that would bring relevant variables, both controllable and uncontrollable, into a coherent, unified picture. Using this picture, management could examine the effects of its marketing policies on two key consumer targets.

The basic format of the model can be seen at a glance in *Exhibit VI*. The mathematical details are discussed at length in the Appendix.

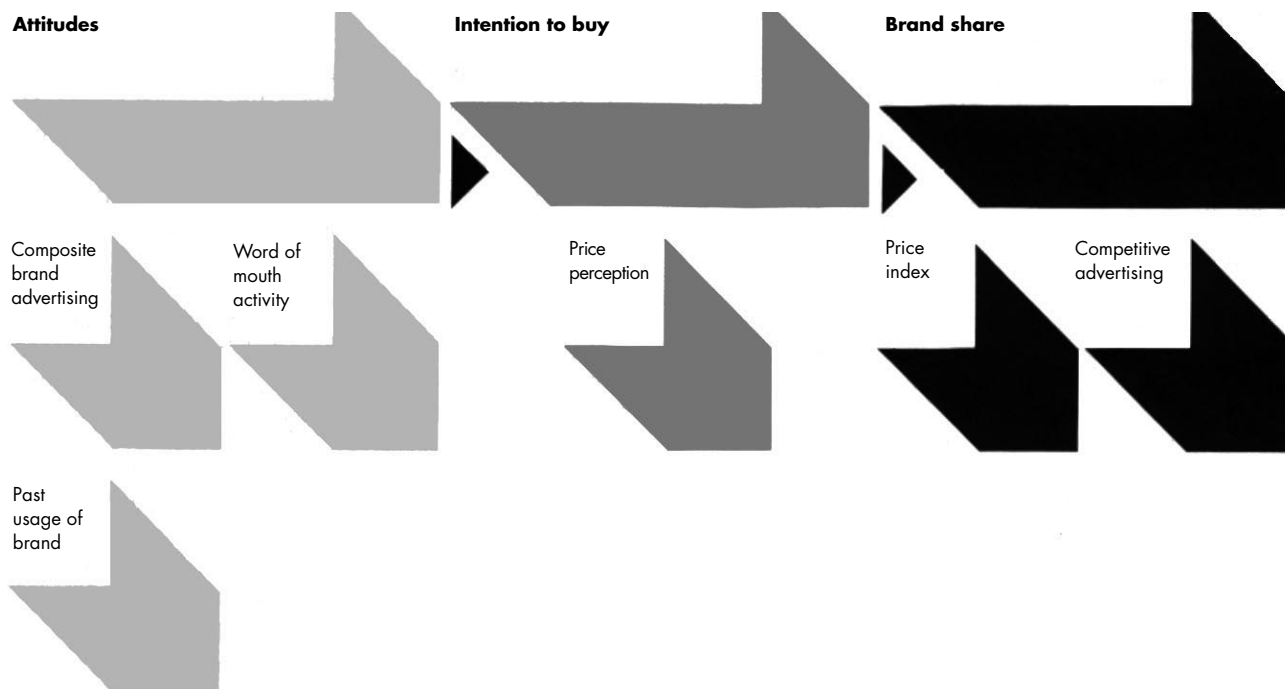
Once the system was in operation, it was frequently used to predict likely changes in sales as a



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**Exhibit VI     Model showing relationships of different variables to brand share**

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result of certain actions planned by the company. For example, when preparing his budget for the next quarter, the marketing manager wanted to know what would happen if he kept the price unchanged but augmented advertising from \$3.30 million to \$3.55 million. As described in the Appendix, the model indicated that an increase of this magnitude would theoretically raise the brand share by 0.3 percentage point. Similar projections could be made for other types of changes contemplated in the marketing mix.

The model was of great value in another way. At one point, discrepancies began to appear between actual and estimated attitude changes. The higher advertising levels were not able to generate better attitudinal ratings, as predicted by the equation. Some part of the system apparently had broken down. Further investigation revealed that the advertising campaign was wearing thin. This problem was solved by developing a fresh program built around the same basic strategy.

Thus, because management had a “radar set” beamed on the marketplace, it was in a position to initiate remedial measures before there was a sharp drop in sales.

A model of this type can also aid management in distinguishing between irreversible sales declines and those which are controllable through a market-

ing effort. Suppose a brand has taken an irreversible turn for the worse, with the scores on attitudes and intentions continuing to decline and consumer research indicating a fundamental change in consumer tastes and values. Then it is advisable to discontinue the brand and embark upon other profitable ventures. Such drastic action can be justified if based on a careful study of the marketplace rather than on blind faith in the PLC concept.

## Conclusion

The PLC concept has little validity. The sequence of marketing strategies typically recommended for succeeding stages of the cycle is likely to cause trouble. In some respects, the concept has done more harm than good by persuading top executives to neglect existing brands and place undue emphasis on new products.

The 1960s were a period of growing affluence, cheap energy, limitless supplies, and rising public expectations. This decade saw brand proliferation, product parity, and market segmentation carried to an extreme. The scenario now has changed. Inflation, shortages, and slow economic growth characterize the 1970s. As a result, aggressive brand proliferation

no longer makes sense. The emphasis should shift from spouting out new “me-too” products to prolonging the productive life of existing brands through sound and solid marketing support.

Marketing-communications models can be of great help. They measure quantitatively the influence of different elements on sales, permit the evaluation of different options, and provide advance warning signals so that remedial action can be taken before a crisis occurs. The management that uses them will not be misled by minor sales aberrations into believing erroneously that a brand has entered a declining stage.

## Appendix

Model building in the field of marketing and consumer behavior is complex. At the early stages, it is desirable to run a sufficient number of cross-lagged and partial correlations in order to determine the true causal path among the variables under study. The equations, when formulated, should be checked for biases such as multicollinearity and autocorrelation. If a simultaneous-equation model is developed, the parameters should be estimated through two-stage least squares, or through limited or full-information maximum likelihood techniques.

The purpose of this section is not to go into mathematical details but to show how management can make use of the model, assuming that all statistical requirements have been satisfied.

To simplify exposition, the equations for the snack drink brand discussed in the text are presented in the linear form, though actually nonlinear and interactive relationships are more realistic. Here are three equations in a specific marketing-communications model:

$$ATT_t = -3.49 + 1.05 ADV-BR_t + 1.50 WOM_t + 0.88 BS_{t-1}$$

$$INT_t = 5.13 + 0.74 ATT_t - 0.44 PR-PER_t$$

$$BS_t = 129.57 + 1.03 INT_{t-1} - 0.94 PR-IND_t - 0.90 ADV-COM_t$$

The symbols in this equation are defined below. The data source for each symbol is shown in parentheses, with TS standing for tracking studies, CP for consumer panels, and AA for advertising agency:

ATT (TS)

Attitudes (sum of ratings on nutrition, natural ingredients, and liking for taste)

ADV-BR (AA)

Advertising expenditures on the brand, in millions of dollars (composite figure)

WOM (TS)

Word of mouth (percent of respondents who talk about the brand with friends, neighbors, or relatives)

BS (CP)

Brand share

INT (TS)

Intention to buy the brand at the time of next purchase

PR-PER (TS)

Price perception (percent of respondents who regard the brand as high priced)

PR-IND (CP)

Ratio of brand's price to the average price of all competitors (100 means the brand price is the same as the average for competition)

ADV-COM (AA)

Advertising expenditures of major competitors in millions of dollars

t, t – 1

Time period, t for current quarter and t – 1 for preceding quarter.

The variables are self-explanatory, except for ADV-BR (Equation 1), which takes into account the lagged effects of advertising. At the preliminary stages of model building, it was found that 80% of the impact was felt almost immediately and 20% was felt in the subsequent quarter. These weights were employed in computing the composite figure.

The following illustration shows how the model could be used to predict likely changes in brand share. Suppose the marketing manager is faced with the following problem: What would be the increase in brand share from the current level of 12.2%, if he keeps the price unchanged but augments advertising from \$3.3 million to \$3.55 million between the first and the second quarter? (The input in the model for the second quarter would be  $3.5 \times 0.8 + 3.3 \times 0.3$ .) Much would depend on the accuracy with which he could forecast the four variables that are beyond the company's control—word of mouth (WOM), price perception (PR-PER), the price index (PR-IND), and competitive advertising (ADV-COM).

Assume that the marketing manager is able to prepare the following estimates based on past trends and opinions of some experts in the field:

WOM (2d quarter)	6.5%
PR-PER (2d quarter)	11.6%
PR-IND (3d quarter)	105.5
ADV-COM (3d quarter)	\$37.4 million

The three equations in the model can now be used to predict the brand share two quarters ahead. The computations are as follows:

$$\begin{aligned}
 \text{ATT}_{t+1} &= -3.49 + 1.05 \text{ ADV-BR}_{t+1} \\
 &\quad + 1.50 \text{ WOM}_{t+1} + 0.88 \text{ BS}_t \\
 &= -3.49 + (1.05) (3.5) + (1.50) (6.5) \\
 &\quad + (0.88) (12.2) \\
 &= 20.67 \\
 \text{INT}_{t+1} &= 5.13 + 0.74 \text{ ATT}_{t+1} \\
 &\quad + 0.44 \text{ PR-PER}_{t+1}
 \end{aligned}$$

$$\begin{aligned}
 &= 5.13 + (0.74) (20.67) - (0.44) (11.6) \\
 &= 15.32
 \end{aligned}$$

$$\begin{aligned}
 \text{BS}_{t+2} &= 129.57 + 1.03 \text{ INT}_{t+1} - 0.94 \text{ PR-IND}_{t+2} \\
 &\quad - 0.90 \text{ ADV-COM}_{t+2} \\
 &= 129.57 + (1.03) (15.32) - (.94) (105.5) \\
 &\quad - (.90) (37.4) = 12.52
 \end{aligned}$$

Thus a planned increase of \$250,000 in advertising in the next quarter would lead to a theoretical brand share of 12.52% in the subsequent quarter, compared to the current share of 12.2%.

The model described has been tailor-made for a particular company. Naturally, the effect of outside influences on corporate efforts would differ from product category to product category and from brand to brand.