Exploit the Product Life Cycle

by Theodore Levitt

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Most alert and thoughtful senior marketing executives are by now familiar with the concept of the product life cycle. Even a handful of uniquely cosmopolitan and up-to-date corporate presidents have familiarized themselves with this tantalizing concept. Yet a recent survey I took of such executives found none who used the concept in any strategic way whatever, and pitifully few who used it in any kind of tactical way. It has remained—as have so many fascinating theories in economics, physics, and sex—a remarkably durable but almost totally unemployed and seemingly unemployable piece of professional baggage whose presence in the rhetoric of professional discussions adds a much coveted but apparently unattainable legitimacy to the idea that marketing management is somehow a profession. There is, furthermore, a persistent feeling that the life cycle concept adds luster and believability to the insistent claim in certain circles that marketing is close to being some sort of science.[1]

The concept of the product life cycle is today at about the stage that the Copernican view of the universe was 300 years ago: a lot of people knew about it, but hardly anybody seemed to use it in any effective or productive way.

Now that so many people know and in some fashion understand the product life cycle, it seems time to put it to work. The object of this article is to suggest some ways of using the concept effectively and of turning the knowledge of its existence into a managerial instrument of competitive power.

Since the concept has been presented somewhat differently by different authors and for different audiences, it is useful to review it briefly here so that every reader has the same background for the discussion which follows later in this article.

HISTORICAL PATTERN

The life story of most successful products is a history of their passing through certain recognizable stages. These are shown in *Exhibit I* and occur in the following order:

Stage 1. Market Development—This is when a new product is first brought to market, before there is a proved demand for it, and often before it has been fully proved out technically in all respects. Sales are low and creep along slowly.

Stage 2. *Market Growth*—Demand begins to accelerate and the size of the total market expands rapidly. It might also be called the "Takeoff Stage."

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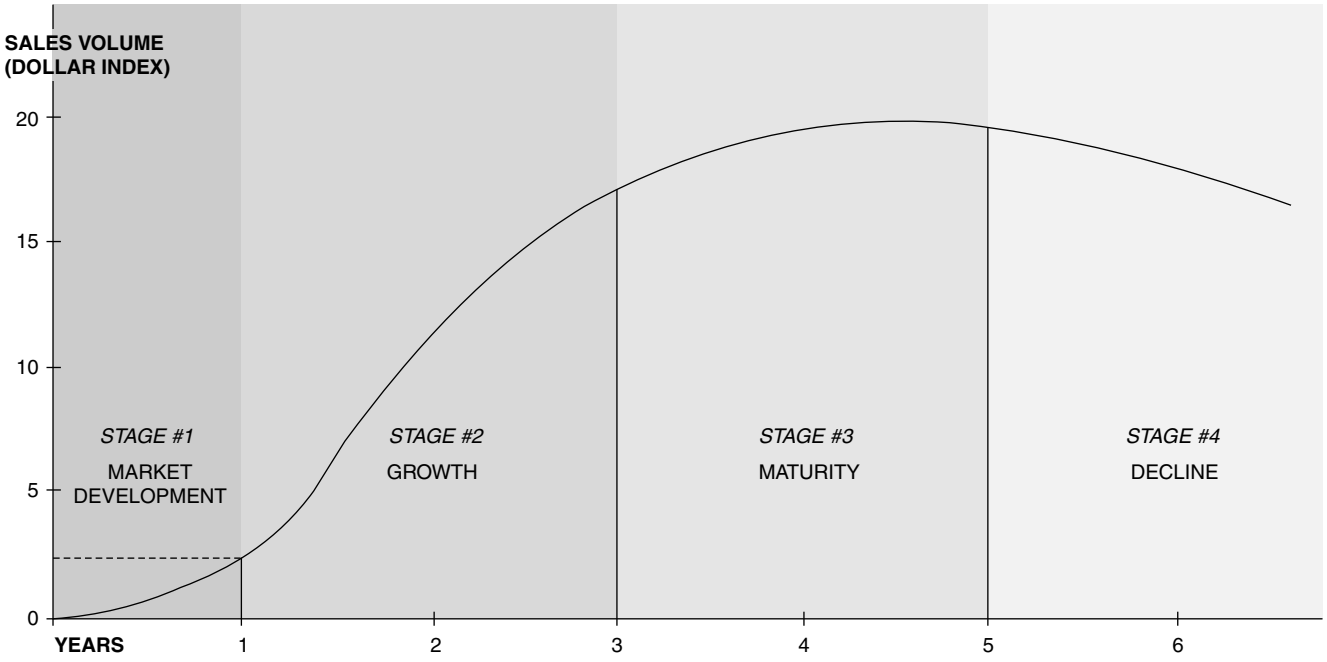
Author's Note: This article will appear in a forthcoming book, *Marketing Vision,* edited by Lee Adler.

EXHIBIT I
Product Life Cycle—Entire Industry



Stage 3. Market Maturity—Demand levels off and grows, for the most part, only at the replacement and new family-formation rate.

Stage 4. Market Decline—The product begins to lose consumer appeal and sales drift downward, such as when buggy whips lost out with the advent of automobiles and when silk lost out to nylon.

Three operating questions will quickly occur to the alert executive:

☐ Given a proposed new product or service, how and to what extent can the shape and duration of each stage be predicted?

☐ Given an existing product, how can one determine what stage it is in?

☐ Given all this knowledge, how can it be effectively used?

A brief further elaboration of each stage will be useful before dealing with these questions in detail.

Development Stage

Bringing a new product to market is fraught with unknowns, uncertainties, and frequently unknowable risks. Generally, demand has to be "created" during the product's initial *market development stage.* How long this takes depends on the product's complexity, its degree of newness, its fit into consumer needs, and the presence of competitive substitutes of one form or another. A proved cancer cure would require virtually no market development; it would get immediate massive support. An alleged superior substitute for the lost-wax process of sculpture casting would take lots longer.

While it has been demonstrated time after time that properly customer-oriented new product development is one of the primary conditions of sales and profit growth, what have been demonstrated even more conclusively are the ravaging costs and frequent fatalities associated with launching new products. Nothing seems to take more time, cost more money, involve more pitfalls, cause more anguish, or break more careers than do sincere and well-conceived new product programs. The fact is, most new products don't have any sort of classical life cycle curve at all. They have instead from the very outset an infinitely descending curve. The product not only doesn't get off the ground; it goes quickly under ground—six feet under.

It is little wonder, therefore, that some disillusioned and badly burned companies have recently adopted a more conservative policy—what I call the "used apple policy." Instead of aspiring to be the first company to see and seize an opportunity, they systematically avoid being first. They let others take the first bite of the supposedly juicy apple that tantalizes

them. They let others do the pioneering. If the idea works, they quickly follow suit. They say, in effect, "The trouble with being a pioneer is that the pioneers get killed by the Indians." Hence, they say (thoroughly mixing their metaphors), "We don't have to get the first bite of the apple. The second one is good enough." They are willing to eat off a used apple, but they try to be alert enough to make sure it is only slightly used—that they at least get the second big bite, not the tenth skimpy one.

Growth Stage

The usual characteristic of a successful new product is a gradual rise in its sales curve during the market development stage. At some point in this rise a marked increase in consumer demand occurs and sales take off. The boom is on. This is the beginning of Stage 2—the *market growth stage.* At this point potential competitors who have been watching developments during Stage I jump into the fray. The first ones to get in are generally those with an exceptionally effective "used apple policy." Some enter the market with carbon-copies of the originator's product. Others make functional and design improvements. And at this point product and brand differentiation begin to develop.

The ensuing fight for the consumer's patronage poses to the originating producer an entirely new set of problems. Instead of seeking ways of getting consumers to *try the product,* the originator now faces the more compelling problem of getting them to *prefer his brand.* This generally requires important changes in marketing strategies and methods. But the policies and tactics now adopted will be neither freely the sole choice of the originating producer, nor as experimental as they might have been during Stage I. The presence of competitors both dictates and limits what can easily be tried—such as, for example, testing what is the best price level or the best channel of distribution.

As the rate of consumer acceptance accelerates, it generally becomes increasingly easy to open new distribution channels and retail outlets. The consequent filling of distribution pipelines generally causes the entire industry's factory sales to rise more rapidly than store sales. This creates an exaggerated impression of profit opportunity which, in turn, attracts more competitors. Some of these will begin to charge lower prices because of later advances in technology, production shortcuts, the need to take lower margins in order to get distribution, and the like. All this in time inescapably moves the industry to the threshold of a new stage of competition.

Maturity Stage

This new stage is the *market maturity stage.* The first sign of its advent is evidence of market saturation. This means that most consumer companies or households that are sales prospects will be owning or using the product. Sales now grow about on a par with population. No more distribution pipelines need be filled. Price competition now becomes intense. Competitive attempts to achieve and hold brand preference now involve making finer and finer differentiations in the product, in customer services, and in the promotional practices and claims made for the product.

Typically, the market maturity stage forces the producer to concentrate on holding his distribution outlets, retaining his shelf space, and, in the end, trying to secure even more intensive distribution. Whereas during the market development stage the originator depended heavily on the positive efforts of his retailers and distributors to help sell his product, retailers and distributors will now frequently have been reduced largely to being merchandise-displayers and order-takers. In the case of branded products in particular, the originator must now, more than ever, communicate directly with the consumer.

The market maturity stage typically calls for a new kind of emphasis on competing more effectively. The originator is increasingly forced to appeal to the consumer on the basis of price, marginal product differences, or both. Depending on the product, services and deals offered in connection with it are often the clearest and most effective forms of differentiation. Beyond these, there will be attempts to create and promote fine product distinctions through packaging and advertising, and to appeal to special market segments. The market maturity stage can be passed through rapidly, as in the case of most women's fashion fads, or it can persist for generations with per capita consumption neither rising nor falling, as in the case of such staples as men's shoes and industrial fasteners. Or maturity can persist, but in a state of gradual but steady per capita decline, as in the case of beer and steel.

Decline Stage

When market maturity tapers off and consequently comes to an end, the product enters Stage 4—*market decline.* In all cases of maturity and decline the industry is transformed. Few companies are able to weather the competitive storm. As demand declines, the overcapacity that was already apparent during the period of maturity now becomes endemic. Some producers see the handwriting implacably on the wall but feel that with proper management and cunning they will be one of the survivors after the industry-wide deluge they so clearly foresee. To hasten their competitors' eclipse directly, or to frighten them into early voluntary withdrawal from the industry, they initiate a variety of aggressively depressive tactics,

propose mergers or buy-outs, and generally engage in activities that make life thanklessly burdensome for all firms, and make death the inevitable consequence for most of them. A few companies do indeed weather the storm, sustaining life through the constant descent that now clearly characterizes the industry. Production gets concentrated into fewer hands. Prices and margins get depressed. Consumers get bored. The only cases where there is any relief from this boredom and gradual euthanasia are where styling and fashion play some constantly revivifying role.

PREPLANNING IMPORTANCE

Knowing that the lives of successful products and services are generally characterized by something like the pattern illustrated in *Exhibit I* can become the basis for important life-giving policies and practices. One of the greatest values of the life cycle concept is for managers about to launch a new product. The first step for them is to try to foresee the profile of the proposed product's cycle.

As with so many things in business, and perhaps uniquely in marketing, it is almost impossible to make universally useful suggestions regarding how to manage one's affairs. It is certainly particularly difficult to provide widely useful advice on how to foresee or predict the slope and duration of a product's life. Indeed, it is precisely because so little specific day-to-day guidance is possible in anything, and because no checklist has ever by itself been very useful to anybody for very long, that business management will probably never be a science—always an art — and will pay exceptional rewards to managers with rare talent, enormous energy, iron nerve, great capacity for assuming responsibility and bearing accountability.

But this does not mean that useful efforts cannot or should not be made to try to foresee the slope and duration of a new product's life. Time spent in attempting this kind of foresight not only helps assure that a more rational approach is brought to product planning and merchandising; also, as will be shown later, it can help create valuable lead time for important strategic and tactical moves after the product is brought to market. Specifically, it can be a great help in developing an orderly series of competitive moves, in expanding or stretching out the life of a product, in maintaining a clean product line, and in purposely phasing out dying and costly old products.[2]

Failure Possibilities . . .

As pointed out above, the length and slope of the market development stage depend on the product's complexity, its degree of newness, its fit into customer needs, and the presence of competitive substitutes.

The more unique or distinctive the newness of the product, the longer it generally takes to get it successfully off the ground. The world does not automatically beat a path to the man with the better mousetrap.[3] The world has to be told, coddled, enticed, romanced, and even bribed (as with, for example, coupons, samples, free application aids, and the like). When the product's newness is distinctive and the job it is designed to do is unique, the public will generally be less quick to perceive it as something it clearly needs or wants.

This makes life particularly difficult for the innovator. He will have more than the usual difficulties of identifying those characteristics of his product and those supporting communications themes or devices which imply value to the consumer. As a consequence, the more distinctive the newness, the greater the risk of failure resulting either from insufficient working capital to sustain a long and frustrating period of creating enough solvent customers to make the proposition pay, or from the inability to convince investors and bankers that they should put up more money.

In any particular situation the more people who will be involved in making a single purchasing decision for a new product, the more drawn out Stage I will be. Thus in the highly fragmented construction materials industry, for example, success takes an exceptionally long time to catch hold; and having once caught hold, it tends to hold tenaciously for a long time—often too long. On the other hand, fashion items clearly catch on fastest and last shortest. But because fashion is so powerful, recently some companies in what often seem the least fashion influenced of industries (machine tools, for example) have shortened the market development stage by introducing elements of design and packaging fashion to their products.

What factors tend to prolong the market development stage and therefore raise the risk of failure? The more complex the product, the more distinctive its newness, the less influenced by fashion, the greater the number of persons influencing a single buying decision, the more costly, and the greater the required shift in the customer's usual way of doing things—these are the conditions most likely to slow things up and create problems.

. . . vs. Success Chances

But problems also create opportunities to control the forces arrayed against new product success. For example, the newer the product, the more important it becomes for the customers to have a favorable first experience with it. Newness creates a certain special

visibility for the product, with a certain number of people standing on the sidelines to see how the first customers get on with it. If their first experience is unfavorable in some crucial way, this may have repercussions far out of proportion to the actual extent of the underfulfillment of the customers' expectations. But a favorable first experience or application will, for the same reason, get a lot of disproportionately favorable publicity.

The possibility of exaggerated disillusionment with a poor first experience can raise vital questions regarding the appropriate channels of distribution for a new product. On the one hand, getting the product successfully launched may require having—as in the case of, say, the early days of home washing machines—many retailers who can give consumers considerable help in the product's correct utilization and thus help assure a favorable first experience for those buyers. On the other hand, channels that provide this kind of help (such as small neighborhood appliance stores in the case of washing machines) during the market development stage may not be the ones best able to merchandise the product most successfully later when help in creating and personally reassuring customers is less important than wide product distribution. To the extent that channel decisions during this first stage sacrifice some of the requirements of the market development stage to some of the requirements of later stages, the rate of the product's acceptance by consumers at the outset may be delayed.

In entering the market development stage, pricing decisions are often particularly hard for the producer to make. Should he set an initially high price to recoup his investment quickly—i.e., "skim the cream"—or should he set a low price to discourage potential competition—i.e., "exclusion"? The answer depends on the innovator's estimate of the probable length of the product's life cycle, the degree of patent protection the product is likely to enjoy, the amount of capital needed to get the product off the ground, the elasticity of demand during the early life of the product, and many other factors. The decision that is finally made may affect not just the rate at which the product catches on at the beginning, but even the duration of its total life. Thus some products that are priced too low at the outset (particularly fashion goods, such as the chemise, or sack, a few years ago) may catch on so quickly that they become short-lived fads. A slower rate of consumer acceptance might often extend their life cycles and raise the total profits they yield.

The actual slope, or rate of the growth stage, depends on some of the same things as does success or failure in Stage I. But the extent to which patent exclusiveness can play a critical role is sometimes inexplicably forgotten. More frequently than one might offhand expect, holders of strong patent positions fail to recognize either the market-development virtue of making their patents available to competitors or the market-destroying possibilities of failing to control more effectively their competitors' use of such products.

Generally speaking, the more producers there are of a new product, the more effort goes into developing a market for it. The net result is very likely to be more rapid and steeper growth of the total market. The originator's market share may fall, but his total sales and profits may rise more rapidly. Certainly this has been the case in recent years of color television; RCA's eagerness to make its tubes available to competitors reflects its recognition of the power of numbers over the power of monopoly.

On the other hand, the failure to set and enforce appropriate quality standards in the early days of polystyrene and polyethylene drinking glasses and cups produced such sloppy, inferior goods that it took years to recover the consumer's confidence and revive the growth pattern.

But to try to see in advance what a product's growth pattern might be is not very useful if one fails to distinguish between the industry pattern and the pattern of the single firm—for its particular brand. The industry's cycle will almost certainly be different from the cycle of individual firms. Moreover, the life cycle of a given product may be different for different companies in the same industry at the same point in time, and it certainly affects different companies in the same industry differently.

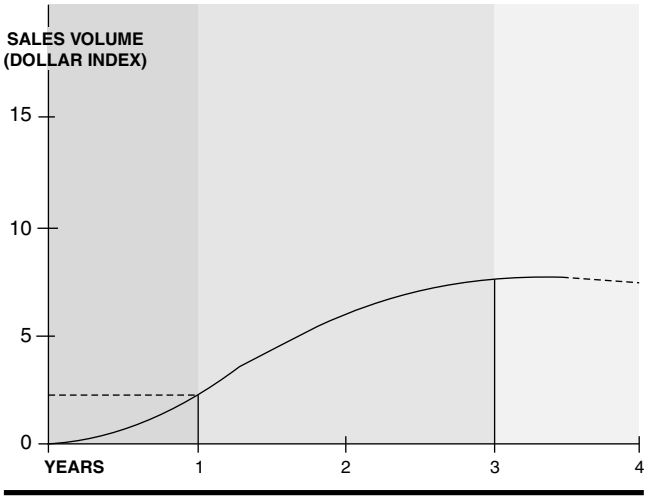
ORIGINATOR'S BURDENS

The company with most at stake is the original producer—the company that launches an entirely new product. This company generally bears most of the costs, the tribulations, and certainly the risks of developing both the product and the market.

Competitive Pressure

Once the innovator demonstrates during the market development stage that a solid demand exists, armies of imitators rush in to capitalize on and help create the boom that becomes the market growth, or takeoff, stage. As a result, while exceedingly rapid growth will now characterize the product's total demand, for the originating company its growth stage paradoxically now becomes truncated. It has to share the boom with new competitors. Hence the potential rate of acceleration of its own takeoff is diminished and, indeed, may actually fail to last as long as the industry's. This occurs not only because there are so many competitors, but, as we noted earlier, also

EXHIBIT II
Product Life Cycle—Originating Company



because competitors often come in with product improvements and lower prices. While these developments generally help keep the market expanding, they greatly restrict the originating company's rate of growth and the length of its takeoff stage.

All this can be illustrated by comparing the curve in *Exhibit II* with that in *Exhibit I,* which shows the life cycle for a product. During Stage I in *Exhibit I* there is generally only one company—the originator—even though the whole exhibit represents the entire industry. In Stage I the originator is the entire industry. But by Stage 2 he shares the industry with many competitors. Hence, while *Exhibit I* is an industry curve, its Stage I represents only a single company's sales.

Exhibit II shows the life cycle of the originator's brand—his own sales curve, not that of the industry. It can be seen that between Year 1 and Year 2 his sales are rising about as rapidly as the industry's. But after Year 2, while industry sales in *Exhibit I* are still in vigorous expansion, the originator's sales curve in *Exhibit II* has begun to slow its ascent. He is now sharing the boom with a great many competitors, some of whom are much better positioned now than he is.

Profit Squeeze

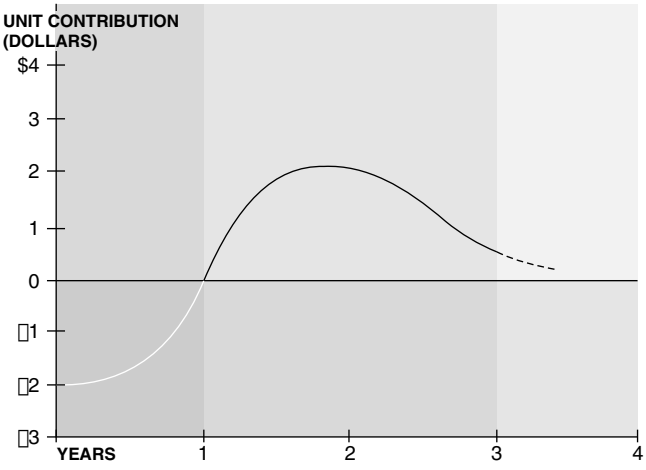
In the process the originator may begin to encounter a serious squeeze on his profit margins. *Exhibit III*, which traces the profits per unit of the originator's sales, illustrates this point. During the market development stage his per-unit profits are negative. Sales volume is too low at existing prices. However, during the market growth stage unit profits boom as output rises and unit production costs fa11. Total profits rise enormously. It is the presence of such lush profits that both attracts and ultimately destroys competitors.

Consequently, while (1) industry sales may still be rising nicely (as at the Year 3 point in *Exhibit I*), and (2) while the originating company's sales may at the same point of time have begun to slow down noticeably (as in *Exhibit II*), and (3) while at this point the originator's total profits may still be rising because his volume of sales is huge and on a slight upward trend, his profits per unit will often have taken a drastic downward course. Indeed, they will often have done so long before the sales curve flattened. They will have topped out and begun to decline perhaps around the Year 2 point (as in *Exhibit III*). By the time the originator's sales begin to flatten out (as at the Year 3 point in *Exhibit II*), unit profits may actually be approaching zero (as in *Exhibit III*).

At this point more competitors are in the industry, the rate of industry demand growth has slowed somewhat, and competitors are cutting prices. Some of them do this in order to get business, and others do it because their costs are lower owing to the fact that their equipment is more modern and productive.

The industry's Stage 3—maturity—generally lasts as long as there are no important competitive substitutes (such as, for example, aluminum for steel in "tin" cans), no drastic shifts in influential value systems (such as the end of female modesty in the 1920's and the consequent destruction of the market for veils), no major changes in dominant fashions (such as the hour-glass female form and the end of waist cinchers), no changes in the demand for primary products which use the product in question (such as the effect of the decline of new railroad expansion on the demand for railroad ties), and no changes either in the rate of

EXHIBIT III
Unit Profit Contribution Life Cycle—Originating Company



obsolescence of the product or in the character or introductory rate of product modifications.

Maturity can last for a long time, or it can actually never be attained. Fashion goods and fad items sometimes surge to sudden heights, hesitate momentarily at an uneasy peak, and then quickly drop off into total obscurity.

Stage Recognition

The various characteristics of the stages described above will help one to recognize the stage a particular product occupies at any given time. But hindsight will always be more accurate than current sight. Perhaps the best way of seeing one's current stage is to try to foresee the next stage and work backwards. This approach has several virtues:

☐ It forces one to look ahead, constantly to try to reforesee his future and competitive environment. This will have its own rewards. As Charles F. Kettering, perhaps the last of Detroit's primitive inventors and probably the greatest of all its inventors, was fond of saying, "We should all be concerned about the future because that's where we'll have to spend the rest of our lives." By looking at the future one can better assess the state of the present.

☐ Looking ahead gives more perspective to the present than looking at the present alone. Most people know more about the present than is good for them. It is neither healthy nor helpful to know the present too well, for our perception of the present is too often too heavily distorted by the urgent pressures of day-to-day events. To know where the present is in the continuum of competitive time and events, it often makes more sense to try to know what the future will bring, and when it will bring it, than to try to know what the present itself actually contains.

☐ Finally, the value of knowing what stage a product occupies at any given time resides only in the way that fact is used. But its use is always in the future. Hence a prediction of the future environment in which the information will be used is often more functional for the effective capitalization on knowledge about the present than knowledge about the present itself.

SEQUENTIAL ACTIONS

The life cycle concept can be effectively employed in the strategy of both existing and new products. For purposes of continuity and clarity, the remainder of this article will describe some of the uses of the concept from the early stages of new product planning through the later stages of keeping the product profitably alive. The chief discussion will focus on what I call a policy of "life extension" or "market stretching."[4]

To the extent that *Exhibits II* and *III* outline the classical patterns of successful new products, one of the constant aims of the originating producer should be to avoid the severe discipline imposed by an early profit squeeze in the market growth stage, and to avoid the wear and waste so typical of the market maturity stage. Hence the following proposition would seem reasonable: when a company develops a new product or service, it should try to plan at the very outset a series of actions to be employed at various subsequent stages in the product's existence so that its sales and profit curves are constantly sustained rather than following their usual declining slope.

In other words, advance planning should be directed at extending, or stretching out, the life of the product. It is this idea of *planning in advance* of the actual launching of a new product to take specific actions later in its life cycle—actions designed to sustain its growth and profitability—which appears to have great potential as an instrument of long-term product strategy.

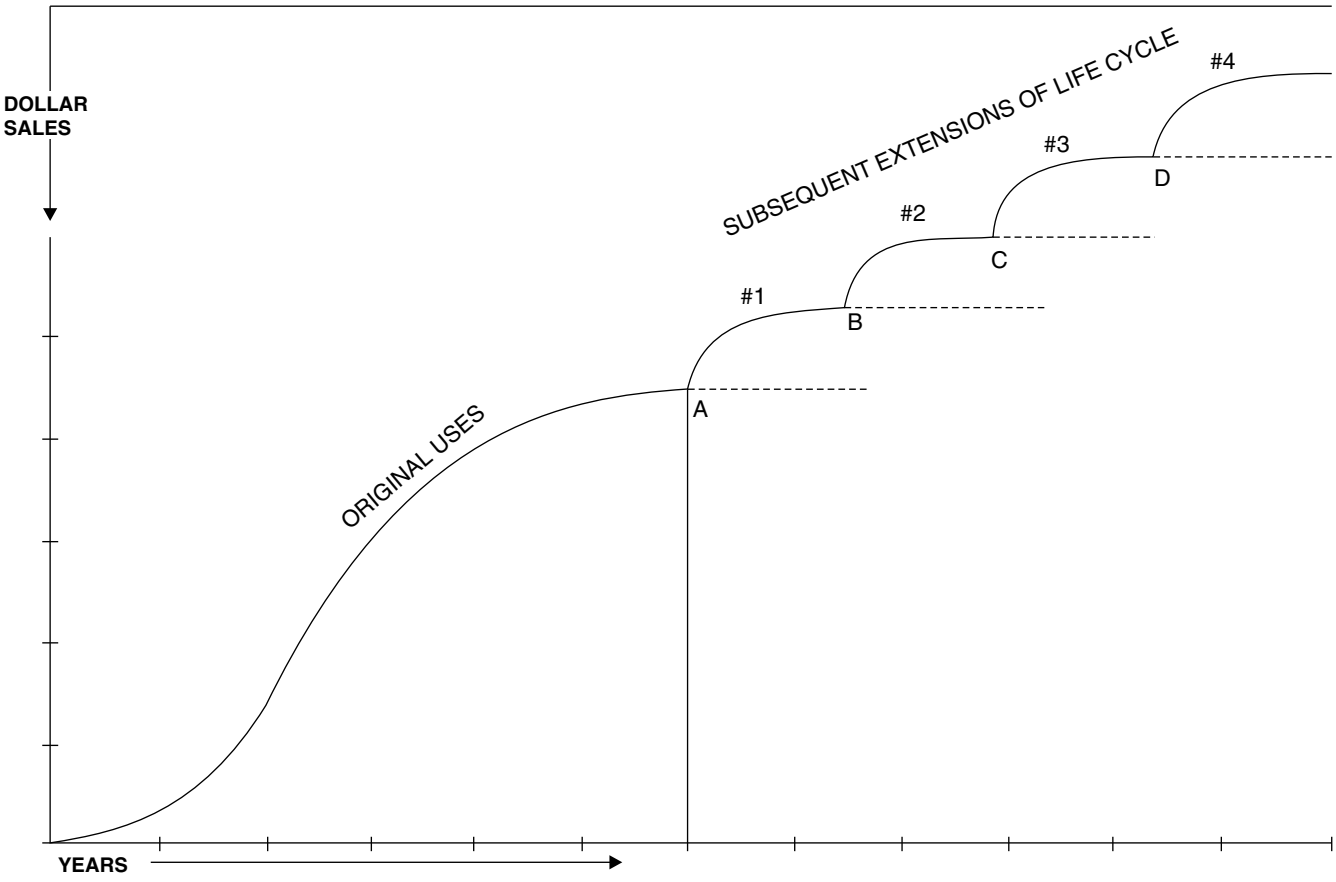
Nylon's Life

How this might work for a product can be illustrated by looking at the history of nylon. The way in which nylon's booming sales life has been repeatedly and systematically extended and stretched can serve as a model for other products. What has happened in nylon may not have been purposely planned that way at the outset, but the results are quite as if they had been planned.

The first nylon end-uses were primarily military—parachutes, thread, rope. This was followed by nylon's entry into the circular knit market and its consequent domination of the women's hosiery business. Here it developed the kind of steadily rising growth and profit curves that every executive dreams about. After some years these curves began to flatten out. But before they flattened very noticeably, Du Pont had already developed measures designed to revitalize sales and profits. It did several things, each of which is demonstrated graphically in *Exhibit IV.* This exhibit and the explanation which follows take some liberties with the actual facts of the nylon situation in order to highlight the points I wish to make. But they take no liberties with the essential requisites of product strategy.

Point A of *Exhibit IV* shows the hypothetical point at which the nylon curve (dominated at this point by hosiery) flattened out. If nothing further had been done, the sales curve would have continued along the flattened pace indicated by the dotted line at Point A. This is also the hypothetical point at which the first

EXHIBIT IV
Hypothetical Life Cycle—Nylon



systematic effort was made to extend the product's life. Du Pont, in effect, took certain "actions" which pushed hosiery sales upward rather than continuing the path implied by the dotted line extension of the curve at Point A. At Point A action #1 pushed an otherwise flat curve upward.

At points B, C, and D still other new sales and profit expansion "actions" (#2, #3, #4, and so forth) were taken. What were these actions? Or, more usefully, what was their strategic content? What did they try to do? They involved strategies that tried to expand sales via four different routes:

1. Promoting more frequent usage of the product among current users.
2. Developing more varied usage of the product among current users.
3. Creating new users for the product by expanding the market.
4. Finding new uses for the basic material.

Frequent Usage. Du Pont studies had shown an increasing trend toward "bareleggedness" among women. This was coincident with the trend toward more casual living and a declining perception among teenagers of what might be called the "social necessity" of wearing stockings. In the light of those findings, one approach to propping up the flattening sales curves might have been to reiterate the social necessity of wearing stockings at all times. That would have been a sales-building action, though obviously difficult and exceedingly costly. But it could clearly have fulfilled the strategy of promoting more frequent usage among current users as a means of extending the product's life.

Varied Usage. For Du Pont, this strategy took the form of an attempt to promote the "fashion smartness" of tinted hose and later of patterned and highly textured hosiery. The idea was to raise each woman's inventory of hosiery by obsolescing the perception of

hosiery as a fashion staple that came only in a narrow range of browns and pinks. Hosiery was to be converted from a "neutral" accessory to a central ingredient of fashion, with a "suitable" tint and pattern for each outer garment in the lady's wardrobe.

This not only would raise sales by expanding women's hosiery wardrobes and stores' inventories, but would open the door for annual tint and pattern obsolescence much the same as there is an annual color obsolescence in outer garments. Beyond that, the use of color and pattern to focus attention on the leg would help arrest the decline of the leg as an element of sex appeal—a trend which some researchers had discerned and which, they claimed, damaged hosiery sales.

New Users. Creating new users for nylon hosiery might conceivably have taken the form of attempting to legitimize the necessity of wearing hosiery among early teenagers and subteenagers. Advertising, public relations, and merchandising of youthful social and style leaders would have been called for.

New Uses. For nylon, this tactic has had many triumphs—from varied types of hosiery, such as stretch stockings and stretch socks, to new uses, such as rugs, tires, bearings, and so forth. Indeed, if there had been no further product innovations designed to create new uses for nylon after the original military, miscellaneous, and circular knit uses, nylon consumption in 1962 would have reached a saturation level at approximately 50 million pounds annually.

Instead, in 1962 consumption exceeded 500 million pounds. *Exhibit V* demonstrates how the continuous development of new uses for the basic material constantly produced new waves of sales. The exhibit shows that in spite of the growth of the women's stocking market, the cumulative result of the military, circular knit, and miscellaneous grouping would have been a flattened sales curve by 1958. (Nylon's entry into the broadwoven market in 1944 substantially raised sales above what they would have been. Even so, the sales of broadwoven, circular knit, and military and miscellaneous groupings peaked in 1957.)

Had it not been for the addition of new uses for the same basic material—such as warp knits in 1945, tire cord in 1948, textured yarns in 1955, carpet yarns in 1959, and so forth—nylon would not have had the spectacularly rising consumption curve it has so clearly had. At various stages it would have exhausted its existing markets or been forced into decline by competing materials. The systematic search for new uses for the basic (and improved) material extended and stretched the product's life.

Other Examples

Few companies seem to employ in any systematic or planned way the four product lifestretching steps described above. Yet the successful application of this kind of stretching strategy has characterized the history of such well-known products as General Foods Corporation's "Jell-O" and Minnesota Mining & Manufacturing Co.'s "Scotch" tape.[5]

Jell-O was a pioneer in the easy-to-prepare gelatin dessert field. The soundness of the product concept and the excellence of its early marketing activities gave it beautifully ascending sales and profit curves almost from the start. But after some years these curves predictably began to flatten out. Scotch tape was also a pioneer product in its field. Once perfected, the product gained rapid market acceptance because of a sound product concept and an aggressive sales organization. But, again, in time the sales and profit curves began to flatten out. Before they flattened out very much, however, 3M, like General Foods, had already developed measures to sustain the early pace of sales and profits.

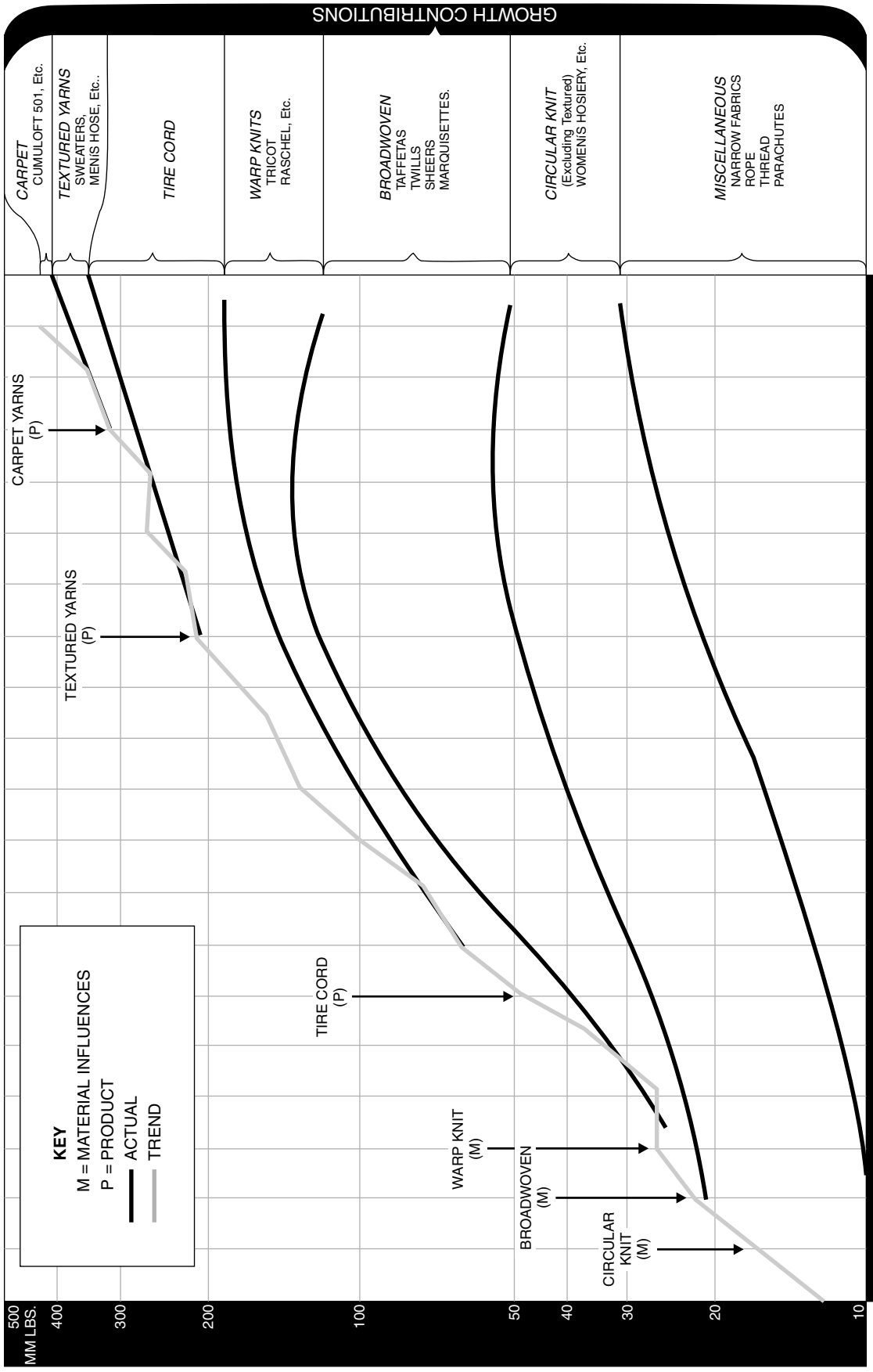
Both of these companies extended their products' lives by, in effect, doing all four of the things Du Pont did with nylon—creating more frequent usage among current users, more varied usage among current users, new users, and new uses for the basic "materials":

(1) The General Foods approach to increasing the frequency of serving Jell-O among current users was, essentially, to increase the number of flavors. From Don Wilson's famous "six delicious flavors," Jell-O moved up to over a dozen. On the other hand, 3M helped raise sales among its current users by developing a variety of handy Scotch tape dispensers which made the product easier to use.

(2) Creation of more varied usage of Jell-O among current dessert users involved its promotion as a base for salads and the facilitation of this usage by the development of a variety of vegetable flavored Jell-O's. Similarly, 3M developed a line of colored, patterned, waterproof, invisible, and write-on Scotch tapes which have enjoyed considerable success as sealing and decorating items for holiday and gift wrapping.

(3) Jell-O sought to create new users by pinpointing people who could not accept Jell-O as a popular dessert or salad product. Hence during the Metrecal boom Jell-O employed an advertising theme that successfully affixed to the product a fashion-oriented weight control appeal. Similarly, 3M introduced "Rocket" tape, a product much like Scotch tape but

EXHIBIT V
Innovation of New Products Postpones the Time of Total Maturity—Nylon Industry



Source: *Modern Textiles Magazine*, February 1964, p. 33. © 1962 by Jordan P. Yale

lower in price, and also developed a line of commercial cellophane tapes of various widths, lengths, and strengths. These actions broadened product use in commercial and industrial markets.

(4) Both Jell-O and 3M have sought out new uses for the basic material. It is known, for example, that women consumers use powdered gelatin dissolved in liquids as a means of strengthening their fingernails. Both men and women use it in the same way as a bone-building agent. Hence Jell-O introduced a "completely flavorless" Jell-O for just these purposes. 3M has also developed new uses for the basic material—from "doublecoated" tape (adhesive on both sides) which competes with ordinary liquid adhesives, to the reflecting tape which festoons countless automobile bumpers, to marker strips which compete with paint.

EXTENSION STRATEGIES

The existence of the kinds of product life cycles illustrated in *Exhibits I* and *II* and the unit profit cycle in *Exhibit III* suggests that there may be considerable value for people involved in new product work to begin planning for the extension of the lives of their products even before these products are formally launched. To plan for new life-extending infusions of effort (as in *Exhibit IV*) at this pre-introduction stage can be extremely useful in three profoundly important ways.

1. *It generates an active rather than a reactive product policy.*

It systematically structures a company's long-term marketing and product development efforts in advance, rather than each effort or activity being merely a stop-gap response to the urgent pressures of repeated competitive thrusts and declining profits. The life-extension view of product policy enforces thinking and planning ahead—thinking in some systematic way about the moves likely to be made by potential competitors, about possible changes in consumer reactions to the product, and the required selling activities which best take advantage of these conditional events.

2. *It lays out a long-term plan designed to infuse new life into the product at the right time, with the right degree of care, and with the right amount of effort.*

Many activities designed to raise the sales and profits of existing products or materials are often undertaken without regard to their relationship to each other or to timing—the optimum point of consumer readiness for such activities or the point of optimum competitive effectiveness. Careful advance planning, long before the need for such activity arises, can help assure that the timing, the care, and the efforts are appropriate to the situation.

For example, it appears extremely doubtful that the boom in women's hair coloring and hair tinting products would have been as spectacular if vigorous efforts to sell these products had preceded the boom in hair sprays and chemical hair fixers. The latter helped create a powerful consumer consciousness of hair fashions because they made it relatively easy to create and wear fashionable hair styles. Once it became easy for women to have fashionable hair styles, the resulting fashion consciousness helped open the door for hair colors and tints. It could not have happened the other way around, with colors and tints first creating fashion consciousness and thus raising the sales of sprays and fixers. Because understanding the reason for this precise order of events is essential for appreciating the importance of early pre-introduction life-extension planning, it is useful to go into a bit of detail. Consider:

For women, setting their hair has been a perennial problem for centuries. First, the length and treatment of their hair is one of the most obvious ways in which they distinguish themselves from men. Hence to be attractive in that distinction becomes crucial. Second, hair frames and highlights the face, much like an attractive wooden border frames and highlights a beautiful painting. Thus hair styling is an important element in accentuating the appearance of a woman's facial features. Third, since the hair is long and soft, it is hard to hold in an attractive arrangement. It gets mussed in sleep, wind, damp weather, sporting activities, and so forth.

Therefore, the effective *arrangement* of a woman's hair is understandably her first priority in hair care. An unkempt brunette would gain nothing from making herself into a blond. Indeed, in a country where blonds are in the minority, the switch from being an unkempt brunette to being an unkempt blond would simply draw attention to her sloppiness. But once the problem of arrangement became easily "solved" by sprays and fixers, colors and tints could become big business, especially among women whose hair was beginning to turn gray.

The same order of priorities applies in industrial products. For example, it seems quite inconceivable that many manufacturing plants would easily have accepted the replacement of the old single-spindle, constantly man-tended screw machine by a computerized tape-tended, multiple-spindle machine. The mechanical tending of the multiple-spindle machine

was a necessary intermediate step, if for no other reason than that it required a lesser work-flow change, and certainly a lesser conceptual leap for the companies and the machine-tending workers involved.

For Jell-O, it is unlikely that vegetable flavors would have been very successful before the idea of gelatin as a salad base had been pretty well accepted. Similarly, the promotion of colored and patterned Scotch tape as a gift and decorative seal might not have been as successful if department stores had not, as the result of their drive to compete more effectively with mass merchandisers by offering more customer services, previously demonstrated to the consumer what could be done to wrap and decorate gifts.

3. *Perhaps the most important benefit of engaging in advance, pre-introduction planning for sales-extending, market-stretching activities later in the product's life is that this practice forces a company to adopt a wider view of the nature of the product it is dealing with.*

Indeed, it may even force the adoption of a wider view of the company's business. Take the case of Jell-O. What is its product? Over the years Jell-O has become the brand umbrella for a wide range of dessert products, including cornstarch-base puddings, pie fillings, and the new "Whip'n Chill," a light dessert product similar to a Bavarian Creme or French Mousse. On the basis of these products, it might be said that the Jell-O Division of General Foods is in the "dessert technology" business.

In the case of tape, perhaps 3M has gone even further in this technological approach to its business. It has a particular expertise (technology) on which it has built a constantly expanding business. This expertise can be said to be that of bonding things (adhesives in the case of Scotch tape) to other things, particularly to thin materials. Hence we see 3M developing scores of profitable items, including electronic recording tape (bonding electron-sensitive materials to tape), and "Thermo-Fax" duplicating equipment and supplies (bonding heat reactive materials to paper).

CONCLUSION

For companies interested in continued growth and profits, successful new product strategy should be viewed as a planned totality that looks ahead over some years. For its own good, new product strategy should try to predict in some measure the likelihood, character, and timing of competitive and market events. While prediction is always hazardous and seldom very accurate, it is undoubtedly far better than not trying to predict at all. In fact, every product strategy and every business decision inescapably involves making a prediction about the future, about the market, and about competitors. To be more systematically aware of the predictions one is making so that one acts on them in an offensive rather than a defensive or reactive fashion—this is the real virtue of preplanning for market stretching and product life extension. The result will be a product strategy-that includes some sort of *plan for a timed sequence of conditional moves.*

Even before entering the market development stage, the originator should make a judgment regarding the probable length of the product's normal life, taking into account the possibilities of expanding its uses and users. This judgment will also help determine many things—for example, whether to price the product on a skimming or a penetration basis, or what kind of relationship the company should develop with its resellers.

These considerations are important because at each stage in a product's life cycle each management decision must consider the competitive requirements of the next stage. Thus a decision to establish a strong branding policy during the market growth stage might help to insulate the brand against strong price competition later; a decision to establish a policy of "protected" dealers in the market development stage might facilitate point-of-sale promotions during the market growth state, and so on. In short, having a clear idea of future product development possibilities and market development opportunities should reduce the likelihood of becoming locked into forms of merchandising that might possibly prove undesirable.

This kind of advance thinking about new product strategy helps management avoid other pitfalls. For instance, advertising campaigns that look successful from a short-term view may hurt in the next stage of the life cycle. Thus at the outset Metrecal advertising used a strong medical theme. Sales boomed until imitative competitors successfully emphasized fashionable slimness. Metrecal had projected itself as the dietary for the overweight consumer, an image that proved far less appealing than that of being the dietary for people who were fashion-smart. But Metrecal's original appeal had been so strong and so well made that it was a formidable task later on to change people's impressions about the product. Obviously, with more careful long-range planning at the outset, a product's image can be more carefully positioned and advertising can have more clearly defined objectives.

Recognizing the importance of an orderly series of steps in the introduction of sales-building "actions"

for new products should be a central ingredient of long-term product planning. A carefully preplanned program for market expansion, even before a new product is introduced, can have powerful virtues. The establishment of a rational plan for the future can also help to guide the direction and pace of the on-going technical research in support of the product. Although departures from such a plan will surely have to be made to accommodate unexpected events and revised judgments, the plan puts the company in a better position to *make* things happen rather than constantly having to react to things that *are* happening.

It is important that the originator does *not* delay this long-term planning until after the product's introduction. How the product should be introduced and the many uses for which it might be promoted at the outset should be a function of a careful consideration of the optimum sequence of suggested product appeals and product uses. Consideration must focus not just on optimum things to do, but as importantly on their optimum *sequence*—for instance, what the order of use of various appeals should be and what the order of suggested product uses should be. If Jell-O's first suggested use had been as a diet food, its chances of later making a big and easy impact in the gelatin dessert market undoubtedly would have been greatly diminished. Similarly, if nylon hosiery had been promoted at the outset as a functional daytime-wear hosiery, its ability to replace silk as the acceptable high-fashion hosiery would have been greatly diminished.

To illustrate the virtue of pre-introduction planning for a product's later life, suppose a company has developed a nonpatentable new product—say, an ordinary kitchen salt shaker. Suppose that nobody now has any kind of shaker. One might say, before launching it, that (1) it has a potential market of "x" million household, institutional, and commercial consumers, (2) in two years market maturity will set in, and (3) in one year profit margins will fall because of the entry of competition. Hence one might lay out the following plan:

I. *End of first year: expand market among current users*
Ideas—new designs, such as sterling shaker for formal use, "masculine" shaker for barbecue use, antique shaker for "Early American" households, miniature shaker for each table place setting, moisture-proof design for beach picnics.

II. *End of second year: expand market to new users*
Ideas—designs for children, quaffer design for beer drinkers in bars, design for sadists to rub salt into open wounds.

III. *End of third year: find new uses*
Ideas—make identical product for use as a pepper shaker, as decorative garlic salt shaker, shaker for household scouring powder, shaker to sprinkle silicon dust on parts being machined in machine shops, and so forth.

This effort to prethink methods of reactivating a flattening sales curve far in advance of its becoming flat enables product planners to assign priorities to each task, and to plan future production expansion and capital and marketing requirements in a systematic fashion. It prevents one's trying to do too many things at once, results in priorities being determined rationally instead of as accidental consequences of the timing of new ideas, and disciplines both the product development effort that is launched in support of a product's growth and the marketing effort that is required for its continued success.

1. For discussions of the scientific claims or potentials of marketing, see George Schwartz, *Development of Marketing Theory* (Cincinnati Ohio, South-Western Publishing Co., 1963); and Reavis Cox, Wroe Alderson, and Stanley J. Shapiro, editors, *Theory in Marketing* (Homewood, Illinois, Richard D. Irwin, Inc., Second Series, 1964).

2. See Philip Kotler, "Phasing Out Weak Products," HBR March–April 1965, p. 107.

3. For perhaps the ultimate example of how the world does *not* beat such a path, see the example of the man who actually, and to his painful regret, made a "better" mousetrap, in John B. Matthews, Jr., R. D. Buzzell, Theodore Levitt, and Ronald E. Frank, *Marketing: An Introductory Analysis* (New York, McGraw-Hill Book Company, Inc., 1964), p. 4.

4. For related ideas on discerning opportunities for product revivification, see Lee Adler, "A New Orientation for Plotting a Marketing Strategy," *Business Horizons,* Winter 1964, p. 37.

5. I am indebted to my colleague, Dr. Derek A. Newton, for these examples and other helpful suggestions.

Toward the end of the last century, nobody "wanted" an automobile. Whether the invention of the horseless buggy was due to accident, play, tinkering, or rational thinking on the part of people endowed with mechanical abilities is immaterial for our purposes. Surely, the invention did not originate with the consumer and was not made with an eye to prevailing consumer wants. Even when the first cars appeared on the road and for many years thereafter, their use for mass

transportation was envisaged neither by producers nor by consumers. But today even small children in America feel the need for a car to take them and their parents shopping, visiting, and later to school. Between the early days of the automobile and the present situation there was a long period of social learning. The learning process was, of course, not spontaneous: first of all, it could not have taken place without the original invention; second, it was a function of numerous stimuli—personal experience, education, and reading, as well as propaganda and advertising. Thus it may be said that wants for automobiles were induced, or to use Galbraith's term, "contrived." But are not most of our wants contrived in this sense? And are not most of our contrived wants, in a certain sense, original with the buyer? It can hardly be said that such want-creation is artificial.

George Katona, *The Mass Consumption Society*
New York, McGraw-Hill Book Company, Inc., 1964, P. 55.

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