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INDUSTRIAL AND SPECIALTY PAPERS

Volume IV—Product Development

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FOREWORD

The first three volumes of this work deal with various aspects of the technology, manufacture, and application of industrial and specialty papers. This is a broad and complex subject, and the editors have treated the matter in considerable depth. Emphasis has been properly placed on the applications of these papers, and particularly on the end use of the products produced.

By definition, specialty papers are manufactured to meet unique requirements. The special techniques of paper manufacture and converting described in previous volumes were generally developed to meet particular market specifications.

Volume IV considers the business, product development, and marketing aspects of this industry, and describes three important new products that are making significant changes in the paper industry. The very nature of the products described in the first three volumes requires at least some consideration of the areas of demand that created the incentive to develop these processes and techniques.

Volume IV also gives important consideration to proved techniques of product development and market research that have developed so rapidly in the paper industry during the past ten years.

One fact is evident, namely, that the paper industry can no longer rely on sales departments to sell only what it can make. Those companies moving ahead in our industry are the ones that have realized that maximum effectiveness in the market place comes from proper application of the concept that industry must produce what the market requires. Indeed, success is becoming more and more dependent on the ability of manufacturing facilities to adapt to rapid changes. Our industry is becoming increasingly conscious of the fact that it must pay particular attention to the function of marketing within our customers' rapidly changing technological environment.

The ratio of capital investment to unit sales in the paper industry is very high, and consequently, the risk attendant upon the utiliza-

tion of capital to develop new markets and satisfy new demands is considerable. The paper industry can no longer afford to handle product development on a "hit-or-miss" basis. The authors, in this volume, describe a number of tools available to management which, when properly applied, minimize risk and maximize the probability of success. The techniques described in Volume IV can provide management with a new tool, that of creating an extrapolation into the future technological requirements of the consuming areas. Market research and product development must be more than just a source of new products and new ideas. They actually can provide the discerning company with a road map showing how to move from one point to another with a considerable degree of accuracy.

It will not be enough for the paper company of the future to rely on its product development and market research departments to tell of demands that already exist. They will have to develop the faculty of anticipating market requirements and have the products ready as the demand for them is created in the market place. Certainly the application of the computer to the evaluation of product development techniques and the ability of the computer to make accurate business evaluations and analyses will change product development concepts in the paper industry.

Some concepts used by the specialty and industrial paper industry today will become mandatory for the commodity producers of paper tomorrow. In this respect, the significance of this series is much broader than might be indicated by the title.

This volume and its companions are unique in their treatment of the specialty and industrial paper fields. They also fill a long recognized need in the paper industry. The authors are to be complimented on the excellent job they have done in defining the parameters of this broad and unique area.

R. T. Seith
Vice President, Marketing
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chapter 1

New Product Development — An Overview

MICHAEL C. SACHER

I. INTRODUCTION

Few areas of American business today are as exciting as “new product development.” Mention the three magic words to the company president or the most recently hired employee, and the eyes of each light up with interest.

By whatever name—interest—curiosity—glamour—the “charisma” attached to these areas is well deserved. Each year, American industry expends more energies in research, marketing, manufacturing, advertising, and other areas in order to run the race for new products. Never before in the history of American business has it been so true that “the race belongs to the swift.”

The objective of this chapter is to present an overview of new product development. Few people today question the need for new products, and this chapter expounds upon those needs, both for industrial and for consumer products. The belief that New Product Development can be planned, programmed, and systematized to a high degree is manifested in the New Product Model for consumer products and the evolutionary steps through which a new industrial product proceeds. The subject of why new products fail is touched upon, and ten philosophies of successful New Product Development are listed. The role of research, sometimes underrated in these days of market orientation, in developing new products is presented from the research point of view.

For the reader who has sufficient interest, several case studies of the “WISTU PAPER COMPANY” are provided, with their proposed solutions. This chapter will take on more meaning if read in conjunction

with Chapter 2, Marketing Research In the Specialty Paper Business, and Chapter 6, The Use of the Computer in New Product Development.

A look at the record shows that the paper industry does not have to take a back seat to any in the new product development area. During the period from 1952 to 1966, it has been estimated that in consumer paper products, the number of items in a typical supermarket had increased 179%, that is from 52 to 145. The impact of nonwovens, in consumer, institutional, and industrial markets, is just now entering an era of dramatic growth. Carbonless impression papers for the business forms industry, coated office copy papers, and plastic coated printing papers are all examples of products widely used today that were not well known several years ago.

If there are winds of caution that should be watched by new products people in the paper industry as they chart their respective courses over the next several years, they are probably in recognition of the fact that some important new paper products will probably be developed by companies closely related to, but not directly a part of, this industry, as these companies utilize the systems approach more and more.

II. THE OPPORTUNITIES NEW PRODUCTS CREATE

We might ask ourselves why so many American companies devote so much time, money, and effort to developing new products.

Ironically, the very same things that cause some people to be "too busy" to develop new products, e.g., competitive pressures, declining markets, price attrition, and other negative factors affecting existing businesses, also cause New Product Development to be a major activity in most progressive companies.

New Products, then, are necessary for several reasons:

1. To replace those products or product lines that are becoming obsolete because of competitive pressures
2. To enable the corporation to meet its long-range planning objectives in the areas of sales and growth
3. For diversification purposes
4. For development of "spill-over" technology
5. To enable the company to penetrate new markets with existing products.

1. To Replace Products That Are Becoming Obsolete.

Defining that point in time at which a product becomes obsolete can be a most difficult, if not impossible, task. For example, the hula hoop

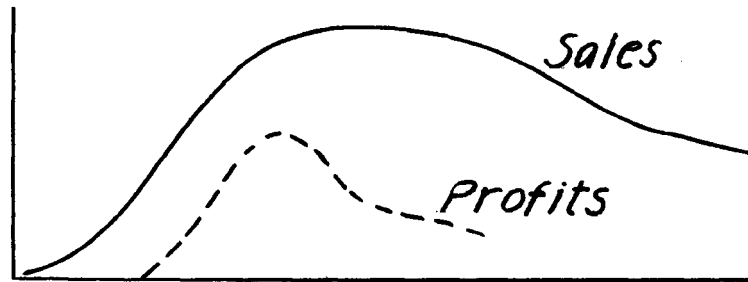


Fig. 1-1. Life span of product.

may arrive on the scene in 1955, be obsolete in 1958, and have a resurgence in 1967, while a keg of old wine may become more and more valuable with age. Generally speaking though, products, like people, have a life span, during which they are born, live and die.¹ This can be depicted graphically.

Fig. 1-1 shows that sales come before profits, that profits are highest early, and later sales level off, or even drop, while profits become more and more marginal. This “erosion” in the life span of most products occurs because *economically speaking* users (customers) place a higher value (price) on some other product that performs an analogous function (\$100 horses sell for \$50 because most buyers place a higher value on the automobile as a form of transportation.) One concept, which is exciting here, is the thought that as a New Product endeavor, we might choose to make obsolete our own products, thereby beating our competition to the punch.

2. To Help Meet Corporate Sales And Growth Objectives

Most major companies in America today have a Long Range Planning Function. Part of that function is to develop corporate growth objectives. These objectives, when stated, often take the form of—“The ABC Corporation will strive to achieve sales of X dollars and profits of Y dollars in year Z.” It is apparent that this objective can be realistically achieved in only a few ways, among them: (a) increased unit sales of existing products, (b) increasing prices and/or decreasing costs (which may or may not meet sales and growth objectives), (c) participating in acquisitions or mergers, and (d) development of new products, either internally or externally. Here, we are discussing (d).

To recognize the impact on corporate growth that new products

¹The concept of a product life cycle is treated more fully in some marketing texts.

can have, we should know that many companies, which today have annual sales of hundreds of millions of dollars, have over 50 per cent of those dollars coming from products that were not commercially available ten years ago!

Furthermore, even if a company had *no* growth objectives, because of erosion of sales and profits depicted earlier in the product life cycle concept, a steady influx of new products would be needed just to maintain existing levels of business.

3. For Diversification Purposes

The development of new products frequently places a company in new markets, which it never before served. This can happen by design, of course, as when the product was planned as an entree into a new market; but sometimes it can happen by chance, or when a customer, without the manufacturer's knowledge, figures out a new end use for the product.

4. For "Spill-Over" Technologies

New technological know-how obtained in the development of the new product often can, with some imagination, be used to upgrade existing product lines. This can "slow down" the erosion of the product life cycle, or even be a springboard to an entire family of new products. This can happen even when the New Product fails—for example, if a technology or even a business relationship with another company is exploited. An example of this could be where a paper manufacturer and a typewriter manufacturer attempted unsuccessfully to develop a *better* typing paper, but as a result of the right people coming together at the right time, a "better" adding machine tape was developed.

5. To Carry Existing Products Into New Markets

It can happen fairly frequently that the excitement with which a successful new product is received in a new market area creates a positive company image, on the strength of which more established products can ride, but where they could not penetrate that market on their own qualifications. This could be considered a form of market synergism.

III. THE PROBLEMS NEW PRODUCTS CREATE

Many people have written many things in the last few years about new products.* Hardly a day goes by that we are not presented with

* See Bibliography.

either through magazines, newspapers, television, or radio, a “new this or new that.”

Despite this proliferation of new products, however, there is much about them that we do not understand. If we did, the batting average of successfully developed new products would be much higher than it is. It is still a hard fact of business life that most new product ideas fail.

In addition to the fact that most new product ideas fail, in many companies, their development also causes stress and strain on existing corporate businesses. The reasons for this become quickly evident when we think about them for a moment.

In today’s highly competitive, results-oriented business environment, corporations are committed to the daily struggle of maintaining or increasing their share of the market, of keeping costs as low as possible, of coordinating advertising and promotional programs with manufacturing schedules, and in general, going about the daily task of keeping the business running. Because of this, New Product Development should be a staff function, and should *not* be the responsibility of those people who have a daily manufacturing or line sales quota to achieve.

Although organizational responsibilities of people are the most sensitive areas of disagreement upon which a new product can impinge, these are not the only ones. Equipment scheduling, especially during peak business periods, for new product trials vs. existing product runs for customers can become trouble spots. The customer normally takes priority, and this is as it should be. The new product, however, must be given its fair share of time on the equipment as soon as is reasonably possible, or else the project will never be completed.

Finally, the interface between market research and development and technical research and development can become a real “demilitarized zone” of buck passing if the proper atmosphere of cooperation is not created. These “two sides of the same coin” must work in harmony, and as a team, if successful new products are to be achieved.

IV. THE NEW PRODUCT DEVELOPMENT CYCLE² FOR INDUSTRIAL PRODUCTS

A. Search For New Products

If we accept the concept that new products are desirable, and even

²The separate phases of New Product Development can be described in various ways. A very readable version is Booz-Allen and Hamilton Incorporated’s *Management of New Products*.

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