

Handbook of Package Design Research

Edited by WALTER STERN

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Preface

Package design research—the use of scientific methods to evaluate the degree to which a product's personality, claims, and benefits are communicated to the consumer through the structure and graphics of its package—has been practiced in some form or other since the early 1950s. However, in spite of the fact that its use and the budgets devoted to it have recently grown at a phenomenal rate, no formal reports or literature have yet been published that would aid the marketer in the assessment of the various methods available to him in certain situations. The profession of package design research thus shows some striking similarities in the stages of its development to that of package engineering—the science of developing and testing packaging structures that will successfully protect the product throughout its entire distribution cycle.

Package engineering started in a similarly informal manner as an attempt to reduce damage ratios through packaging improvement, primarily through the ac-

tions of certain specially trained individuals in the organizations of the common carriers concerned with damage claims, and of the mail order companies to whom safe transit of merchandise could spell the difference between profit and loss. Learning by trial and error and establishing a nucleus of expertise mostly through an apprenticeship approach to teaching, the profession gradually established a core of knowledge that was given its first compendium by the publication, in the early forties, of a *Package Engineering Handbook*.

The demands of world-wide distribution of all kinds of goods under the most extraordinarily difficult and critical conditions presented by the logistics of World War II served as a powerful stimulus to the further development of this science and resulted eventually in the structure of university courses leading to B.S. and M.S. degrees in the package engineering sciences. Today, numerous handbooks and reference works are available, and more than 30 universities,

learning centers, and government bureaus teach courses in all aspects of this craft/science. Formal examinations are held by a number of states to license packaging engineers, and a world-wide interrelated network of package engineering societies has been created.

Package design research has arrived at the same point in its development that package engineering reached in the early forties. Except for some well attended but isolated seminars, no regular courses have yet been established to teach this highly specialized discipline of consumer market research. Except for a few articles, no literature is available to those who would want to learn more about this field. Moreover, no group or professional society has yet emerged to combine the widely scattered expertise and knowledge into a cohesive organization facilitating interchange of insights.

It is particularly important to establish a basic fund of experience and knowledge in this field because its tools are used to an ever increasing degree to justify, or at least evaluate, the staggering investments demanded by today's advertising and sales promotion budgets for retail products, and because of the steady rise in product/package development costs. Because package design research provides advance insights into the degree to which your marketing objectives and your product's performance claims and benefits are communicated by the package, and because market test failures can be analyzed by package design research in such a manner that defects or flaws can be pinpointed for improvement action, a handbook in which all aspects and facets of this field are discussed is timely and essential for those who deal in products and their packaging.

The book's organization is simple. Part I explores the complex ways in which consumers interact with packaging, the formulation of marketing objec-

tives and how they are aided by package design, and the role of package design research in product development. It provides a basic but thorough introduction to design research and serves as a general orientation, particularly to those readers whose contact with the field has been limited.

Part II outlines in considerable detail the various methods of investigation that are used today to assess packaging effectiveness. It covers the most frequently used approaches.

Part III covers the place of design assessment in product development, deals with the interaction of package and product in marketing, and cites case histories demonstrating the manner in which design research can be used even at the product concept stage.

Part IV is concerned with the manner in which package design research is integrated into the corporate marketing structure, and shows how its use can significantly influence the entire corporate marketing strategy.

Part V explores the use of package evaluation techniques in segmented and highly specialized markets and product categories where routine application of the tools discussed in Part II may render misleading or skewed results.

Part VI investigates the use of package design research in other countries whose marketing problems differ from those in the United States, and explores the problems that arise when a package design or design format is used in several countries with differing marketing, ethnic, economical, or cultural environments. It also reviews the situations and problems that may arise from multinational marketing plans and from the need to arrive at meaningfully coordinated results when studies are conducted in a number of countries.

Part VII outlines new and often highly experimental test designs that are in some cases used only on a laboratory

basis and may well serve to predict what will occur in design research within the next decade.

The authors of this handbook are active in a considerable variety of occupations. It was felt by the editor that package design research techniques and experiences should be described not only by consultant consumer research organizations specializing in this area but also by those in the corporate structure who use these consultant services, by the advertising agencies and corporate product management who plan the product and packaging strategies that are to be tested, by package design groups, and by consultancies in the areas of behavioral studies from which many of the package design research tools derived. Moreover, because design research is used on a world-wide basis wherever major budgets are assigned to market planning, authors from other countries were invited to contribute to this overview.

It will be apparent to the reader almost at the very outset that package design research is neither an art nor a science but a highly creative combination of both. Thus a fairly simple investigative approach such as the focused group interview may be used in many widely varying ways by different research groups and in different situations. Because of this necessity to explore not only the techniques but also the ways in which they may be designed, applied, and analyzed, I felt that in a number of areas not one but several authors should deal with identical subjects. This may in some cases result in overlapping information. However, at the same time it develops in the reader the necessary insight that, unlike physical package performance testing (which may, for instance, use an American Society for Testing and Materials' standard method to test susceptibility of polyethylene bottles to soot accumulation, regardless of

the country and conditions in which the test application occurs), the application of package design research tests depends in its use and execution entirely on the experiences and convictions of the individual or group who execute them. Thus while physical package performance testing groups may vary in the thoroughness, accuracy, and "finish" with which tests are executed and reports are rendered, the difference between any two individuals, groups, or organizations who conduct package design research can result in different end results unless very careful planning, monitoring, and auditing are used.

There are basically two ways to write, coordinate, and edit a handbook that is the result of contributions from a considerable number of authors (and possibly in a number of different languages). One approach is an almost complete rewrite in order to establish a uniform tone of delivery, organization, treatment, and syntax. This will result in a text of considerable homogeneity and integrity that will, in effect, provide the impression of having been written by one author. The other approach would be to edit for a certain consistency of format and style but to leave untouched the author's individual vocabulary, expressions, and even idiosyncrasies. Because in the area of package design research individual attitudes and values regarding a certain test pattern are highly important factors and may vary considerably, the second method is utilized here to give the reader a clear and direct impression of the author's voice and personality in interaction with standard methodology. Just as a package design organization's attitude toward problem solving is often an expression of the personality and philosophy of its director, so the research approach to investigation and solving of problems of evaluation is a direct reflection of the person who directs the program. Only the pro-

gram director's individual way of expressing his or her beliefs and insights is important in the treatment a certain body of knowledge receives.

This handbook is thus essentially the product of many minds and provides the reader with direct access to an impressive array of perceptions, experiences, and judgments of individuals whose credentials in this field are outstanding. Credit for this compendium of seasoned knowledge and expertise is shared by all members of the handbook's Board of Contributing Authors. All members are not only theorists but also practitioners of product and package design research.

To give our reader an opportunity to get to know the Board's members, we have provided detailed biographical backgrounds for each of the contributors whose chapters follow.

Because all segments of the marketing and research communities have shared equally in the creation of this volume, it is my hope that this handbook will become a standard reference work for marketing decisions both here and abroad and that its usefulness can be maintained and widened by future revisions that keep pace with the ever changing marketing environments.

WALTER STERN

Wilmette, Illinois
March 1981

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Introduction

Package Design Research: The State of the Art

Walter Stern

Today it is obvious to most experienced marketers that package design can detract from a marketing effort or contribute immeasurably to its success. For this reason, corporate packaging decisions are increasingly based on research rather than hunch or opinion. When millions of dollars are spent on new product introductions or line extensions, the marketing field needs facts to guide them, and so the use of package testing has in recent years increased at a vast rate. Yet not a single reference work is available to brief the users of this highly specialized area of consumer research.

When a leading manufacturer of chewing gums in the United States decided to introduce a new brand of sugarless gum, their brand went up against

well entrenched competitors with truly impressive market shares; it also was positioned to compete against the manufacturer's own brands. In most new product and package development projects, the decision to go to market follows years of expensive preparation and testing. In the case of the sugarless gum these tests took place not only in the laboratory but also in the European market—a route that is not unusual in the candy field. What is important in this context is that that research triggered the starting gun for staggering expenditures in advertising and promotional support that ran to over 10 million dollars in the first year alone.

When less than two years ago this country's most dominant tobacco prod-

ucts company decided to introduce the first of what eventually became a whole family of low-“tar” cigarettes positioned for richness of taste, the budget amounted to almost 40 million dollars, an investment based largely on the results of painstaking research into the product, its advertising, and its package.

A certain portion of that monumental budget was spent on package design research to evaluate, assess, and validate design decisions made during the conceptual stage, before test market, and prior to national market rollout. In a critical new product introduction such as this, in which impressive budgets are bet on product and package success, the designer’s experienced judgment or the packaging committee’s educated determinations are just not considered sufficiently reliable by corporate market management to justify financial commitments of such magnitude. When you roll your dice under the watchful eyes of a board of directors, the computer print-out is preferred over the gambler’s intuition.

However, while advertising research is by now a well documented science with an impressive array of published literature and reference material, and while the development of new products and product rejuvenation have for quite a few years been guided by well established research disciplines, the subject of package design research is simply too young for that kind of backup. Let me cite the following example.

A *Handbook on Market Research*, considered a veritable bible without which no brand manager would start his day at the office, was published several years ago, is revised every year, and runs to 1440 pages of 6 point type; 91 research consultants contributed chapters to that comprehensive reference volume. However, not a single chapter is devoted to package design research, which has, in this entire prolific coverage

of the state of the art of market research, been given the space of one single paragraph. The paragraph simply states that the field of package research is one that in recent years has grown in vast proportions; vast proportions notwithstanding, that’s it on package design research.

“Package research,” of course, has been practiced for over 40 years. But, in our terminology, package research is used for the process of testing a package’s physical performance characteristics, especially how well it performs its functional requirements during its entire distribution and use life. “Package design research,” however, operates in an entirely different area governed largely not by recording test instruments but by perceptions, emotions, and by the entire vague and largely uncharted area of the consumer’s psychological involvement with products and their packaging. Its testing methods and its analytical methodology are based not on physics, but on psychology and the behavioral sciences.

Package design research will not predict how well a package will do in the market. It will, however, examine precisely to what extent a certain design has succeeded in communicating the marketing objectives on which its marketing platform was based. It is an analytical instrument, not a crystal ball. Yet in spite of its trappings of impressive instrumentation and professional lingo, it is still at this stage largely an art rather than a science.

Two concepts serve as the basis for all package design research:

- 1 Consumers generally do not distinguish clearly between a product and its package, and many products are packages (and many packages are products).
- 2 Consumers relate emotionally not to the facts (the realities) of the products/packages they are involved with,

but rather to their "perceived reality."

Let me attempt to illuminate these two concepts with some examples.

There are a great number of items offered for retail sale that are quite obviously resisting categorization as either product or package. Consumers do not differentiate between razor blades and their plastic dispenser, between a solid room freshener and its housing, between a hair spray formulation, its propellant, and its aerosol dispenser. Portion control packaged marmelade is considered a different product from the same marmelade if packed in a conventional jar. An antiperspirant applied by a roll-on dispenser is considered a different product from the same formulation when applied as a spray.

These are some of the more obvious examples. But this tendency of the consumer to consider the product and its package an integral entity goes a great deal further.

A West Coast university's school of marketing recently conducted a number of taste panel experiments which tried to rank five national brands of beer by such quality ingredients as blandness or heartiness; light or heavy feel; sweet, tart, or bitter taste; body; color; and after-taste. Respondents on the taste panel poured their beers out of bottles merely marked by a letter of the alphabet for distinction. A definite ranking sequence was established in which brand B was rated tops and brand A was at the very bottom of desirability.

The test was repeated four weeks later with results that duplicated those of the first test. It was thus a totally reliable taste analysis except for one puzzling factor. When the test was repeated a third time, but with bottles labeled with typed brand names such as Schlitz, Budweiser, and Pabst, the taste rating was rearranged to the point that

now A was tops and C at the bottom of the group of five.

The point illustrating the consumer's tendency to perceive package and product as one, however, emerged in the final test when the panel, for the first time, was confronted by the products in their conventional retail packaging. In test after test, product C was rated tops in quality; D was at the low end of the scale. Why?

The experiment demonstrated impressively the intimate relationship between the package and the manner in which its product is perceived or experienced. Not, of course, just the graphics, the structure, the material, or the functions of the package, but all experienced communications elements that surround it: its advertising umbrella, its promotional aura, where it has been seen, how the consumer was introduced to it, how his or her peers relate to it—all these elements determine the consumer's product perception.

In a frequently quoted example, a major toiletry marketer had come to a final decision on the design of a new roll-on deodorant label; the only thing to be settled was the color scheme of that label, and three final contenders were to be evaluated. The three were applied to containers distributed for in-home trial. The rationale: we are sending you for tryout three slightly different formulations of a new deodorant; please evaluate them for effectiveness, fragrance, and ease of use.

An overwhelming percentage of the users voted for the product whose label was executed in color scheme B. It dried almost immediately after application; it had a pleasant but unobtrusive fragrance; it effectively protected the wearer from underarm odor and wetness for up to 12 hours. Color scheme C of the identical product did not fare as well. There was much criticism of the strong aroma of the product, and its effective

antiperspirant action lasted for only a few hours.

Color scheme A? Well, color scheme A almost involved the company in a series of lawsuits because a number of users had developed an irritating under-arm rash—three had actually visited a dermatologist for a professional prognosis.

However, regardless of label color schemes, there was only one product, one formulation, one scent, one strength involved in these three tests. Here we are entering the mystifying realm of what I would like to call “perceived reality.”

A truck driver pulls his 18-wheeler up to a roadside bar and grill, kills the ignition, climbs stiffly down from his cab, and enters the alcohol dispensing premises. He walks up to the bar, is welcomed cheerfully by his professional brotherhood, and orders a beer. He is soon an indistinguishable member of that solid fraternity and feels the desire to light a cigarette. He pulls out a pack, lights up, passes the pack around. At least he tries to, but everybody has withdrawn from his vicinity and he suddenly feels an icy exclusion from the friendly crowd. His brand is Eve.

Eve is a slim cigarette made from a blend of tobaccos strikingly similar to that of many other brands on the market, with similar average moisture content and similar tobacco aggregate residues. Yet the package contributes a personality to that product that is so distinctly unique in its positioning that its implications on the poor trucker's personality are devastating. The reality: just another cigarette. The perceived reality: a totally feminine product.

Now let's reverse the example; let's consider a brand with a wholesomely masculine personality—one any truck driver would be proud to pull out of his shirt pocket, for instance, Marlboro. Supposing in our reversed example the mothers' bridge club gathers around the

coffee table for their final pretournament session and one of them pulls a pack of Marlboros from her purse. What happens? Why, nothing at all, why should anything happen?

Package design research truth number 1: People react to a product's perceived reality rather than to its actual, factual attributes. Truth number 2: Don't ever jump to conclusions in package design.

Let us look at one more example of perceived reality and the way it is supported (or even created) by its packaging: We are looking at two cans of cat food. Both contain 6 ounces of product (tuna). The guaranteed analysis of protein, crude fat, crude fiber, moisture, and ash content is identical on both. The two most prevalent ingredients in both are tuna and water. Both contain the same group of vitamin supplements, and thus both seem to offer complete and balanced nutrition for cats. Cats, as a matter of fact, don't distinguish between the two, because cats go by realities.

But consumers don't. One can is marketed by a leading pet food producer. It sports a six-color, process illustrated label, and its brand name is endorsed by a corporate logo that stands for widely acclaimed achievements in animal nutrition experimentation and product development. The other is a generic brand of a large supermarket chain; its label is printed in two-color line art, and it sells for over 50% less than its more ambitious companion product. What are the perceived realities brought out by package design research?

Briefly, the imagery played back by tests that we will describe in detail in the following indicates that inflationary pressures and the possibility of saving over \$100 per year by buying the generic brand are powerful persuaders toward buying the cheaper brand, especially because Puss does not know the difference. But the consumer who does so does not