IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

UNITED STATES OF AMERICA, Plaintiff, vs. DENTSPLY INTERNATIONAL, INC., Defendant.	Civil Action No. 99-005 (SLR)

EXPERT REPORT OF JERRY WIND, PRESIDENT, WIND ASSOCIATES

Dated: June 14, 2000

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DENTAL LAB TECHNICIANS' PREFERENCES AND TRADEOFFS AMONG COMPETITIVE MANUFACTURERS OF ARTIFICIAL TEETH

FEBRUARY 29, 1999

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I. QUALIFICATIONS, BACKGROUND AND OBJECTIVES

My qualifications, including a list of my publications and past testimony at trial and by deposition, are contained in my curriculum vitae, which is attached as Appendix H to this report. I am compensated at the rate of $750 per hour for my work in this case.

As I understand the issues in this case, Dentsply International is the leading producer of artificial teeth in the U.S. market. Estimates of its current share ranges from 65 to 80 percent of the U.S. market. Currently, Dentsply distributes its teeth through dealers, and if a dealer adds a competitive line of prefabricated artificial teeth, Dentsply severs its relationship with that dealer.

Other producers of artificial teeth, such as Vita and Ivoclar, have had a difficult time in penetrating the U.S. market. What is not known about this market is the role that the following marketing variables play in influencing dental laboratory technicians' choices of artificial teeth brands:

- Type of distribution – dealers versus direct distribution by manufacturer
- Price

The objective of this study that I have been asked by the United States to conduct, is to produce an appropriate representative sample and generate data that will provide a basis for establishing empirically the relative importance of these factors and a basis for estimating the expected share of Dentsply and its competitors under various scenarios of the above two marketing variables.

In addition to the data generated by the survey I conducted, which is incorporated into this report, I considered other documents including various documents generally describing the artificial tooth market, marketing and promotional materials for several brands of prefabricated artificial teeth, and the Complaint filed by the United States in this case.

II. RESEARCH APPROACH

A. Research Design

I designed and directed a study among dental laboratory technicians as a tradeoff conjoint study focusing on key variables associated with the product, distribution and price offerings of seven suppliers: Dentsply, Vita, Ivoclar, Myerson, Universal, Kenson and Justi.

The study is designed as a conjoint analysis study that generates the data providing a basis for various types of modeling including the PRIDEM and PRIDEL Models. The paper documenting these models is included in Appendix A attached to this report.

The study was designed as a TMT (Telephone recruitment, Mail follow-up and main Telephone interview) study.

B. Universe and Sample

Universe

The universe was defined as dental lab technicians responsible for the selection of plastic artificial teeth purchased by the lab for use in making dentures.

Sample

A representative national probability sample was selected from the universe of dental lab technicians responsible for the selection of plastic artificial teeth purchased by the lab for use in making dentures. The sample size included 274 respondents, one per laboratory.

The sampling procedure involved 3 phases:

(1) A national sample list of 10,000 dental laboratories was obtained from Survey Sampling, Inc. located in Fairfield, CT. Their business and professional lists are compiled from continuously updated yellow page listings, nationwide. The list of 10,000 laboratories was divided into 10 replicates of 1,000.

(2) Guideline Research, a New York-based national marketing research firm with whom I have worked on similar studies, received the 10 replicates and opened one replication at a time, with the instruction to start at the beginning of the first replicate and work through all the names in that replicate before beginning the second replicate. A total of 2,520 respondents were called to generate the final sample of respondents. A minimum of 3 dialing attempts was made for each number before eliminating that number from the sample.

II. RESEARCH APPROACH (con't)

(3) The respondents were screened to meet the following requirements:
Laboratory must fabricate dentures using plastic artificial teeth
Respondent must be responsible for selecting the plastic artificial teeth that the laboratory uses
Respondent had to be willing to participate (accept receipt of the packet)

The detailed screening results are included in Appendix G.

C. The Questionnaire

The main part of the questionnaire was Part B which consisted of a tradeoff exercise in which each respondent received 8 stimuli cards containing experimentally designed scenarios describing Dentsply and each of its competitors. Each competitor was named – Dentsply, Vita, Ivoclar, etc. The starting, or reference scenario – Exhibit 1 on the following page – showed base price and distribution for each supplier.[1] Subsequent experimentally designed scenarios varied price and distribution mode for the various brands to measure the respondent tradeoffs. For each scenario, the respondent was asked to allocate 100 points across the suppliers, reflecting his/her total plastic tooth purchases from each supplier over the next three months given the distribution and price conditions shown.

In addition, in Part A of the questionnaire, a selected set of respondent background characteristics (lab size, shares of current tooth suppliers, years in business, etc.) and preferences were collected.

Part A of the questionnaire and the instructions for responding to Part B are included in Appendix E.

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1 The reference scenario card showed Vita VITAPAN as being available from a local dealer, because for some labs this is technically accurate; however, as I understand the facts, this is not the existing market condition for the majority of labs in the United States, and was not at the time the data was collected. This was, accordingly, adjusted for during the analysis (as discussed in section F, page 12).

C141

Exhibit 1: Sample Scenario Card

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	24.18	Yes	Yes	No		8-10
Dentsply BIOBLEND IPN	26.34	Yes	Yes	No		11-13
Dentsply CLASSIC	3.90	Yes	Yes	No		14-16
Dentsply PORTRAIT IPN	26.28	Yes	Yes	No		17-19
Dentsply TRUBLEND SLM	27.78	Yes	Yes	No		20-22
Ivoclar SR VIVODENT PE	25.05	No	No	Yes		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	19.95	Yes	Yes	Yes		32-34
Universal VERILUX	24.40	Yes	Yes	Yes		35-37
Vita VITAPAN	29.01	Yes	No	Yes		38-40
				Total =	100 points	

[This is the reference (C141) card sent to all respondents]

D. The Stimuli

Each respondent received 8 Scenario cards. The top card in each set is the reference card, C-141; the remaining cards represent a block of 7 (shuffled) cards drawn from a block of the master design (Appendix B). Exhibit 1, shows C-141, the reference card. The 140 experimental cards (numbered from C-1 through C-140) appear in 20 blocks of 7 cards each; their designs appear in Appendix B – the master experimental design. Appendix C contains seven illustrative stimuli cards.

Pricing

The first 8 columns of the master experimental design contain the pricing information for the 8 primary brands; the 4 Dentsply brands - BIOFORM IPN, BIOBLEND IPN, PORTRAIT IPN, TRUBLEND SLM, and Ivoclar SR VIODENT PE, Myerson DURABLEND SPECIAL RESIN, Universal VERILUX and Vita VITAPAN, respectively. The prices for Dentsply CLASSIC, Justi BLEND and Kenson RESIN are fixed throughout the design at the prices shown in the reference scenario, Card C-141, in Exhibit 1. The experimental prices for the 8 primary brands are shown in Exhibit 2. As noted, there are four price levels for each primary brand. As noted above, the 3 secondary brands have fixed prices – the same as those shown in Exhibit 1.

Distributor Availability

Exhibit 3 shows the master coding for availability. There are 7 levels for this variable. Columns 9 through 13 of Appendix B show the availability codes for the active products. Column 9 is applicable for all of the five Dentsply brands' availability. Columns 10 through 13 of Appendix B show the availability coding for SR VIVODENT PE, DURABLEND SPECIAL RESIN, VERILUX and VITA, respectively. Justi BLEND and Kenson RESIN both received an availability coding of: Yes -- Yes -- Yes throughout all of the experimental cards.

Exhibit 2: Brands and prices

Dentsply Bioform IPN	(1) $19.44	(2) $21.76	(3) $24.18	(4) $26.60
Dentsply Bioblend IPN	(1) $21.07	(2) $23.71	(3) $26.34	(4) $28.97
Dentsply Portrait IPN	(1) $21.02	(2) $23.65	(3) $26.28	(4) $28.91
Dentsply Trublend SLM	(1) $22.22	(2) $25.00	(3) $27.78	(4) $30.56
Ivoclar SR Vivodent PE	(1) $20.04	(2) $22.55	(3) $25.05	(4) $27.56
Myerson Durablend Special Resin	(1) $15.96	(2) $17.96	(3) $19.95	(4) $21.95
Universal Verilux	(1) $19.52	(2) $21.96	(3) $24.40	(4) $26.84
Vita Vitapan	(1) $23.21	(2) $26.11	(3) $29.01	(4) $31.91

Denstply Classic	$ 3.90	Fixed
Justi Blend	$12.84	Fixed
Kenson Resin	$ 3.75	Fixed

Exhibit 3: The Availability Attributes

Design Level	Local Dealer	Mail-Order Dealer	Manufacturer Directly
1	Yes	Yes	Yes
2	Yes	Yes	No
3	Yes	No	Yes
4	Yes	No	No
5	No	Yes	Yes
6	No	Yes	No
7	No	No	Yes

E. Data Collection

The data collection was conducted at my direction by Guideline Research.

The data collection consisted of a TMT design in which respondents were screened by telephone (screener questionnaire is included in Appendix D). Following that, they were sent by priority mail 2 envelopes consisting of a questionnaire (Appendix E) and 8 stimulus cards (one of the 20 blocks of the master design outlined in Appendix B and illustrated in Appendix C). Four to five days later they received a second telephone call and instructions on how to complete the forms. They were asked to return the completed forms and the stimuli to Guideline Research.

The field instructions were prepared by Guideline Research and are included in Appendix F. Neither the interviewers nor the respondents were informed of the purpose or sponsor of the study.

The data generated by the responses to Parts A and B of the questionnaire is incorporated into this report and contained, respectively, in the computer files titled "dental.as1" and "dental.as2."

F. Data Analysis

One method that can be used to analyze the data produced by this survey is the PRIDEM/PRIDEL model developed by Paul Green and Abba Krieger (and described in Appendix A). This model enables the user to "parse out" the effect of each experimentally manipulated variable on respondents' tradeoffs across suppliers. Respondent background attributes from Part A of the questionnaire are included in the model in order to examine their segmentation effects.

The initial analysis focused on 3 scenarios:

(1) Base scenario: Current market conditions at the time the survey was designed and conducted, as reflected in the base stimulus card (C-141) with one exception: that Vita is not available from a local dealer (for the reasons noted in the section above describing the questionnaire).

(2) Scenario 2: Vita and Ivoclar are available from a local dealer and from the manufacturer directly but not from a mail order dealer, and the price variable will remain the same as the base scenario for Vita and Ivoclar (all price and distribution variables remain the same as the base scenario for each of the other brand/lines);

(3) Scenario 3: Vita and Ivoclar are available from all three distribution options: local dealer, mail order dealer, and from the manufacturer directly, and the price variable will remain the same as the base scenario for Vita and Ivoclar (all price and distribution variables remain the same as the base scenario for each of the other brand/lines).

III. RESULTS

The initial results produced by the PRIDEM/PRIDEL model for three key scenarios are included in Exhibit 4 on the following page.

This model allows for the calculation of expected share for any scenario based on the factors and levels included in the study (and listed in Exhibits 2 and 3).

Exhibit 4

Estimated Market Share Results for Ivoclar and Vita Under Three Scenarios

The Scenarios

	Scenario	Ivoclar Share	Ivoclar Relative Gain vs. Scenario 1	Vita Share	Vita Relative Gain vs. Scenario 1
1	Base Scenario Current market conditions as reflected in the base stimulus card (C-141) with one exception, that Vita is not available from a local dealer	5.05%	-----	3.37%	-----
2	Scenario 2 Vita and Ivoclar are assumed to be available from a local dealer and from the manufacturer directly but not from a mail order dealer; the price variable remains the same as the base scenario for Vita and Ivoclar (all price and distribution variables remain the same as the base scenario for each of the other brand/lines)	6.84%	35%	3.69%	9%
3	Scenario 3 Vita and Ivoclar are available from all three distribution options: local dealer, mail order dealer, and from the manufacturer directly; the price variable remains the same as the base scenario for Vita and Ivoclar (all price and distribution variables remain the same as the base scenario for each of the other brand/lines)	6.25%	24%	4.44%	32%

IV. CONCLUSIONS

This study, using conjoint analysis methodology, which is generally accepted and commonly used for assessing respondent's trade-offs among key marketing variables, was designed to generate data that allows analysis to:

(a) Establish empirically the relative importance of types of distribution and price in dental laboratory technicians' choices of artificial teeth brands

(b) Estimate the expected share of Dentsply and its competitors under various scenarios of the above two marketing variables

The survey was conducted at my direction according to generally accepted professional scientific standards for survey research used in litigation in order to assure the objectivity of the entire process.

The findings of the study using the PRIDEM/PRIDEL model as summarized in Exhibit 4 show that:

- In the base case reflecting generally prevailing market conditions at the time the survey was designed and conducted, in which Ivoclar and Vita are unavailable from local or mail order dealers, the expected share of
  - Ivoclar is 5.05%
  - Vita is 3.37%

- In a scenario in which Ivoclar and Vita are available from only local dealer and manufacturer, the share of
  - Ivoclar is 6.84%, an increase of 35%
  - Vita is 3.69%, an increase of 9%

IV. CONCLUSIONS (con't)

- In a scenario in which Ivoclar and Vita are available from all three distribution modes – manufacturer, mail order or local dealer, the share of
  - Ivoclar is 6.25%, an increase of 24% vs. the base case
  - Vita is 4.44%, an increase of 32% vs. the base case

Yoram Jerry Wind, Ph.D.

APPENDIX A

BACKGROUND ARTICLE ON THE PRIDEM AND PRIDEL MODELS

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Theory and Methodology

Modeling competitive pricing and market share: Anatomy of a decision support system *

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Abstract: Even with today's high emphasis on management decision support systems, relatively little has been published on the motivations, tribulations, and post mortems that generally accompany the development of such systems. This paper reports (in a mixture of narrative style and more formal model exposition) how a computerized decision support system for optimal price determination was developed, implemented, and finally applied to a broad range of industry problems.

Keywords: Pricing; demand analysis; conjoint analysis; multiattribute preference

1. Introduction

Product and service pricing is one of the oldest (and still very important) tools of the marketing executive. Each day business firms face questions like the following:

1. Competitor X has just increased its price by five percent. Should we match it, or stand pat?
2. How should we price our new product, which offers several technical advantages over current offerings?
3. How should we set prices among competing items in our current product line?

Answers to these questions are hard to find for at least two reasons. First, given a set of existing prices and market shares for products in a competing product class, it is often difficult to predict new shares accurately if one or more prices were to change. Second, it is difficult to predict how competitors will react to others' price changes.

Marketing researchers have dealt with the first question by proposing several new marketing research methods that show promise for augmenting information obtained from older approaches. Historically, the measurement of price-demand relationships has relied on statistical methods applied to either cross-sectional or time series data (e.g., Wittink, 1977). However, newer approaches, such as those based on laboratory studies (Pessemier, 1960), instore experiments (Doyle and Gidengil, 1977), test market simulation (Silk and Urban, 1978), and willingness-to-pay surveys (Monroe and Della Bitta, 1978) have received increased attention and, in some cases, commercial application.

Even more recently, conjoint-based methods (Mahajan, Green, and Goldberg, 1982; Louviere and Woodworth, 1983; Wyner, Benedetti, and Trapp, 1984) have considered explicitly designed competitive product profile descriptions. Respon-

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dents either pick their preferred choice from the set of alternatives, indicate their likelihood of choosing each option, or state their preferences for alternative allocations of a common resource across products or activities competing for that resource (Carroll, Green, and DeSarbo, 1979).

A prototypical procedure entailing tradeoff techniques is that proposed by Mahajan, Green, and Goldberg (MGG). Their survey data collection approach is a modification of one originally proposed by Jones (1975). Respondents are shown profile descriptions of P products, each with an associated brand name and price. Profiles are designed according to fractional factorials in which attributes and levels are idiosyncratic to each brand. Respondents allocate a constant sum (typically 100 points) across each stimulus option indicating the likelihood that they would choose each option, given the stated prices for each alternative. MGG employ a conditional logit model (Theil, 1969) to estimate parameter values that satisfy the following sum and range constraints:

1. The estimated probability of choosing some p-th brand ranges between zero and one.
2. The sum of the choice probabilities across all P brands (including an all-other-brands category, if appropriate) equals unity.

While MGG discuss how their approach might be used in actual business situations, they also add that their experience with applying the model to real-world problems is quite limited.

1.1. Inputs from the business world

As we mulled over the idea of adapting some of the conjoint methodology to the measurement and strategy issues related to optimal pricing, we sought the advice of several commercial marketing research firms. Gradually, a pattern emerged regarding their views about what managers would like to see in a price/demand model:

1. The approach should be able to utilize survey methods, similar to the kinds of buyer tradeoff data that are collected in applied conjoint studies.
2. The model should be able to consider not only the impact of price changes on market share but also the effect on share of non-price attribute changes on the part of any or all competitors.
3. The model should be able to make market share predictions at both the total market and individual market segment levels.
4. The model should be capable of examining interactions among different competitors' prices and non-price attribute levels.
5. The model should be 'decomposable' in the sense of allowing the client to focus attention on the behavior of a single product's share as a function of individual competitors' prices and non-price activities.
6. The model should be capable of being calibrated to actual starting (i.e., existing) market shares and prices.
7. The model should contain an 'optimizing' feature in which the user can find the best price for a given product, conditional on fixed prices for competitors and specified levels of all non-price attributes, self and competitors.
8. The model should be flexible enough to allow interpolation across discrete price points.
9. The model should be user friendly and, if possible, adaptable to a personal computer.

With these desiderata in mind, we set about the task of constructing a suitable data collection method, parameter estimation technique, and price optimizing routine.

1.2. Borrowing from the past

Fortunately, earlier work in componential segmentation (Green, Krieger, and Zelnio, 1989) led to the development of a conjoint model for forecasting buyers' likelihoods of purchase from information about product attribute preferences and buyer backgrounds (e.g., demographics, life styles, current brand usage, etc.). The PROSIT (PROduct SITuation) model contained a number of relevant features for the current effort, namely PROSIT's ability to estimate parameter values for both product attributes and buyer attributes, as well as selected two-way, within-set and between-set interactions.

Furthermore, PROSIT contained an optimizing feature wherein one could find the best product profile for a given market segment or the best segment for a given product.

In the PROSIT model, all parameters are estimated as though each predictive variable is categorical (i.e., predictors are treated as dummy variables in the spirit of conjoint analysis). The response variable is 'univariate' – typically, a buyer's subjective likelihood of choosing a specific brand or service supplier as a joint function of product profiles (for that brand and competitive brands) and respondent background variables.

In contrast, our present problem emphasized an underlying continuous variable (i.e., price) and entailed a 'multivariate' response, namely, the respondent's subjective likelihood of choosing each of P products as a function of their product attributes, their prices, and the buyer's background attributes. Still, the earlier PROSIT model seemed like a good place to start. On the plus side, it had been successfully applied in a variety of industrial applications (particularly in the pharmaceutical and computer industries) and had already been adapted for interactive, personal computer applications.

2. Decisions, decisions

At this point we had a starting point for the PRIce-DEMand model (PRIDEM). However, a number of decisions still had to be made on adapting the PROSIT model for pricing and, in particular, incorporating a multivariate response variable. PROSIT was estimated by OLS dummy variable regression. Its optimizer employed a heuristic for finding optimal combinations of product and/or segment attribute levels from the full Cartesian product set of attribute levels. In contrast, our current interest centered on price optimization, conditional on given settings of all other attributes.

2.1. Handling the price attribute

In keeping with conjoint methodology, it seemed appropriate to maintain the treatment of all attributes (including price) as categorical, encoded as dummy variables. From a pragmatic viewpoint this would allow us to use a portion of the same software already in place for fitting the PROSIT model. Second, we could avail ourselves of highly efficient, fractional factorial designs for setting up the product and price stimulus design that would estimate all main effects as well as selected two-way interactions. Moreover, these (orthogonal) designs are flexible enough to accommodate enough price levels (e.g., five to nine per brand) to approximate a continuous part-worth function rather closely.

Why not just select a polynomial (e.g., quadratic) to represent part worths for the price variable? One of the problems with this approach is that the resulting curve is sensitive to error. In fact, it is possible that the fitted curve could depart rather markedly from the actual responses associated with the experimentally designed price points. Clearly, with polynomial fitting there is no requirement that the curve 'go through' the response value observed at each discrete experimental price point.

In contrast, by using *splines* we could make sure that the response function passed through the knots (i.e., price points). Furthermore, we could make the function smooth between each pair of knots so that simple (classical) methods of optimization could be used to find the solution that maximized the sponsor's contribution to overhead and profit (conditional on fixed prices for competitive products).

Accordingly, we set up a computer routine for fitting one and two-dimensional splines where the knots represented the discrete price levels used in the original experimental design underlying the competitive product profiles. The Appendix describes this procedure.

2.2. Making the model multivariate

A second problem with the adaptation of PROSIT to PRIDEM was how to deal with the multivariate response variable. The PROSIT model is fit by ANOVA-like, OLS regression. If the original PROSIT response variable were quantal (e.g., 1 or 0) or if the response were each respondent's subjective likelihood of purchase on a 0 to 1.0 scale, no attempt was made in PROSIT to transform it to a logit (as was done in Mahajan, Green, and Goldberg, 1982).

Why not, then, set up a multinomial logit model with brand and product interactions, rather than fitting individual linear probability models and *then* finding market shares on a post hoc basis? We chose to maintain OLS fitting and the linear probability model for two reasons. First, the PROSIT model has a rather elaborate, built-in cross validation feature which we wished to retain for assessing the predictive accuracy of prices.

market segments, and non-price attributes on a single product's likelihood of purchase. This could be applied to each product, in turn, as a way to see if some part worth functions are poorly estimated.

Second, despite the theoretical attractiveness of the multinomial logit (see Mahajan, Green, and Goldberg, 1982), we noted that Brodie and De Kluyver (1984) have reported that linear probability models, with post hoc adjustment (to respect non-negativity and sum constraints), have fared as well as the more complex multinomial logit models in terms of empirical market share validation. (Still, it should be mentioned that the current structure of PRIDEM could be reformulated in terms of a multinomial logit.)

With these preliminary decisions made, it was then time to formulate the model.

3. The PRIDEM model

To motivate our description of the PRIDEM model, consider a situation in which a pharmaceutical firm wishes to increase the price of its antihypertensive drug, brand A. There are five other competing brands in the market niche of interest to brand A's producers: B, C, D, E, and F. The producers of brand A are able to estimate per-unit variable production/distribution costs for each of the six competitive brands.

In designing the marketing research survey, brand A's producers considered four price levels each for brands A, B and C, three levels each for D and E, and two levels for the more remote competitor, brand F. In addition, they selected one three-level non-price attribute describing brand A's dosage schedule: once daily, twice daily, or three times daily.

A conjoint orthogonal design of 64 profile descriptions was set up. Each respondent received eight of the profile descriptions, drawn from the master design. For each description the respondent was asked to allocate 100 points across the six competitive brands so as to reflect the proportion of hypertensive patients for whom each drug would be prescribed, under the stated conditions. (Prior to this task each respondent similarly evaluated a base-case profile showing the current prices of each brand and brand A's current dosage level of three times daily.) Figure 1 shows an

CARD D25 I.D.# ________

Share of patients		Current price per day's therapy	+5%	+10%	+15%
	Brand A dosage twice/day	$1.97			
	Brand B	$1.88			
	Brand C				$2.12
	Brand D		$2.29		
	Brand E		$2.09		
	Brand F				$2.09
Total 100%					

Figure 1. Illustrative stimulus card

illustrative stimulus card for one of the experimental conditions.

Respondents were classified, a priori, by five segment attributes: specialty (cardiologists versus general practitioners); age (under 35, 35 and older); type of practice (solo versus group); current brand favorite (brand A versus others); and patient load, within specialty (above median versus below median). [1]

3.1. Preliminaries

In describing the PRIDEM model more formally, we first consider the question of estimating the market shares for each brand, as a function of manipulated product/price variables and respondent characteristics. Market shares are assumed to depend on three types of attributes: (a) market segment attributes; (b) non-price (e.g., product) attributes; and (c) price attributes. We let

$$l_1, l_2, \ldots, l_S$$

denote the number of levels associated with each of the S segment attributes. In the illustrative problem these attributes describe the decision makers, such as specialty (cardiologist, general practitioner), age (age under 35, 35 and over), and so on.

Similarly, we let

$$m_1, m_2, \ldots, m_T$$

denote the number of levels associated with each of the T non-price attributes. In the illustrative problem there is only one non-price attribute: dosage (once daily, twice daily, three times daily).

Finally, the market shares are also assumed to depend on the brands' prices. We assume $R \le P$ price attributes; this allows for the case in which a subset of size $P - R$ of the P brands does not vary with respect to price. We let

$$n_1, n_2, \ldots, n_R$$

denote the number of levels of each of the R price attributes. To simplify notation, we further assume that the brands are ordered, so that brand i refers to the brand whose price is varying in price attribute i. Associated with each level of each price attribute is an actual price (e.g., in dollars per day's therapy). Prices are denoted by:

$$\Pi_{rj} \quad r = 1, 2, \ldots, R; \; j = 1, 2, \ldots, n_r.$$

We shall use i, j, and k to subscript attribute levels in general.

3.2. Segment components

The segment attributes are used to define the universe over which the market shares are computed. We specify a segment by assigning selected attribute levels to the S segment attributes. We can combine segments by aggregation. More generally, we can construct any universe of interest by a set of non-negative segment weights,

$$w_{sj}, \quad s = 1, 2, \ldots, S; \; j = 1, 2, \ldots, l_s,$$

so that

$$\sum_{j=1}^{l_s} w_{sj} = 1 \quad \text{for } s = 1, 2, \ldots, S.$$

In particular, a given segment with levels $\{i_1, i_2, \ldots, i_S\}$ is captured by setting

$$w_{j,i_j} = 1 \quad \text{for } j = 1, 2, \ldots, S$$

and

$$w_{j,k} = 0; \quad \text{otherwise}.$$

Through the use of weighting coefficients PRIDEM can select a specific weighted universe across all attributes with (say) weights of 0.7 and 0.3 for cardiologist and GP, respectively, and weights of 0.2 and 0.8 for under 35 years and 35 years or older, respectively. Given the five two-level background descriptors, described above, we have a maximum of 32 distinct segments.

Later on, we shall describe how the 'optimal' price for each product is determined, given stated prices for all other brands. The optimal price will be defined by the value that maximizes contribution to overhead and profit, defined by the expression:

Industry sales units · (price − variable cost/unit of brand p) · (market share of brand p).

(In applying the computer-based PRIDEM model, industry sales are usually set, for convenience, at 1.0.)

[1] It should be noted that the approach does not require segment atributes to be dichotomous; however, the model implemented here assumes that all attributes are discrete.

3.3. Market share model

Associated with each brand p is an estimated market share

$f^{(p)}(k; j, w)$

where k is a vector (of length R) of prices, j is a vector (of length T) of levels for the non-price attributes, and w is S vectors (of respective lengths $I_1, I_2, \ldots, I_S$) denoting the universe of decision makers (i.e., the physicians).

The function $f^{(p)}$ is obtained by first fitting a main effects model to the raw response data (i.e., the likelihood of prescribing the p-th brand in question) where the predictors are the S segment attributes, the T non-price attributes, and the R price attributes, all expressed as dummy variables. Selected two-way interactions are then added to the model in a sequential, stagewise manner (Green and DeSarbo, 1979). As noted above, interactions can be either within segment, non-price, or price attributes, or between segment, non-price, or price attributes.

The fitting of main effects and interactions yields a set of regression-based functions $h^{(p)}$, $p = 1, 2, \ldots, P$, one for each product, as a preliminary step toward obtaining $f^{(p)}$. We first discuss how each $h^{(p)}$ is obtained and then how it is adjusted to find $f^{(p)}$. The model is described, in part, by its L interactions. As noted earlier, interaction l^* can be of several differing types:

$(q_{l_1^*}, q_{l_2^*})$ with $q_{l_2^*} \geq q_{l_1^*}$.

We have the combinations as shown in Table 1.

Attribute levels with associated interaction l^* are denoted by $(u_{l_1^*}, u_{l_2^*})$. For example, if $q_{11} = 2$, $q_{12} = 3$, $u_{11} = 3$, and $u_{12} = 4$, then the first interaction is between the third non-price attribute and the fourth price attribute.

Describing the formal regression model for estimating each individual product's $h^{(p)}$ is a bit messy because of the large variety of possible interaction terms. We define $h^{(p)}$ as

$$h^{(p)}(i, j, k) = A^{(p)} + \sum_{s=1}^{S} B_{s,i_s}^{(p)} + \sum_{t=1}^{T} C_{t,j_t}^{(p)} + \sum_{r=1}^{R} D_{r,k_r}^{(p)} + \sum_{l^*=1}^{L} E_{l^*}^{(p)}(i, j, k; q_{l_1^*}, q_{l_2^*}, u_{l_1^*}, u_{l_2^*}) \quad (1)$$

where

$A^{(p)}$ denotes the intercept term for product p's function,

$B_{s,i_s}^{(p)}$ denotes the main effect partworth for level i_s of segment attribute s,

$C_{t,j_t}^{(p)}$ denotes the main effect partworth for level j_t of non-price attribute t,

$D_{r,k_r}^{(p)}$ denotes the main effect partworth for level k_r of price attribute r, and

$E_{l^*}^{(p)}(i, j, k; q_{l_1^*}, q_{l_2^*}, u_{l_1^*}, u_{l_2^*})$ is an entry in the matrix associated with interaction l^*. The specific entry depends on i, j, k, $q_{l_1}^*$, $q_{l_2^*}$, $u_{l_1^*}$ and $u_{l_2^*}$

3.4. Base-case calibration

To calibrate each individual brand model, we adjust each $h^{(p)}$ obtained from the individual product regressions to a base-case profile. This is accomplished by finding $h^{(p)}$ for this profile and then multiplying all the parameters (A, B, C, D, E) by $b^{(p)}/h^{(p)}$ where $b^{(p)}$ is the given market share for the base-case profile.

Finally, we obtain the market share function $f^{(p)}$ from $h^{(p)}$ by normalizing the individual $h^{(p)}$ values by means of the function

$$f^{(p)}(k; j, w) = \frac{\sum_i w_i (h^{(p)}(i, j, k))^+}{\sum_{q=1}^{P} \left[\sum_i w_i (h^{(q)}(i, j, k))^+ \right]} \quad (2)$$

where $(x)^+ = \max(x, 0)$, $w_i = \Pi_{s=1}^{S} w_{s,i_s}$ and h has been previously adjusted to base-case market shares, as described above. Note that if $h^{(p)}(i, j, k) = 0$ for all p, then $f^{(p)}(k, j, w) \equiv 1/P$.

3.5. Additional remarks

As noted earlier, we fit each $h^{(p)}$ regression function as a simple linear probability model in

Table 1

$q_{l_1^*}$	$q_{l_2^*}$	Nature of interaction
1	1	Segment by segment attribute
1	2	Segment by non-price attribute
1	3	Segment by price attribute
2	2	Non-price by non-price attribute
2	3	Non-price by price attribute
3	3	Price by price attribute

which predicted values need not obey a 0–1 range constraint; simple OLS regression is employed. Similarly, $f^{(p)}$ is obtained by a normalizing procedure which simply insures that all of the individual $h^{(p)}$ predicted values are non-negative. (As described earlier, other procedures, including multinomial logit, could be used.)

It should also be pointed out that the sequential fitting of two-way interactions requires that attention be paid to the significance testing of additional terms. This is implemented by procedures described in Green and DeSarbo (1979). In addition, each individual $h^{(p)}$ model is cross-validated at each stage in the interaction fitting procedure. Cross-validated predictions are employed as the principal guide to the selection of appropriate interaction terms, once the main effects have been fitted.

4. Price interpolation and optimization

There are two remaining aspects of the model that are not explained fully by (1) for $h^{(p)}$. (Since the discussion below applies to all p, we now omit the superscript.) We first note from the preceding discussion that market shares can only be predicted at the price levels Π_{rj} associated with the price attributes. It is desirable to be able to interpolate, i.e., to predict market shares at prices Π_r, $r = 1, \ldots, R$, that are not limited to the original Π_{rj}. Second, we have not discussed how to find the optimal prices Π_r^*, $r = 1, \ldots, R$.

4.1. Interpolation procedure

The solutions to both of these problems depend upon the method of interpolation between successive price levels Π_{rj} and Π_{rj+1}. To this end, we assume that the weightings over segments and levels for non-price attributes are fixed, in any given run of the model. The function, h, can then be written as $h(\Pi_1, \ldots, \Pi_R)$ where $\Pi_1, \ldots, \Pi_R$ denotes prices for the R price attributes. Since we fit an additive model with interactions, we can write,

$$h(\Pi_1, \ldots, \Pi_R) = A + \sum_{r=1}^{R} g_r(\Pi_r) + \sum_{r \neq s} g_{rs}(\Pi_r, \Pi_s) \tag{3}$$

where A includes the intercept, and the main effects for segments and nonprice attributes and interactions that do *not* involve price attributes; g_r includes the main effect for price attribute r and all interactions involving the r-th price attribute with a segment attribute or a non-price attribute; g_{rs} refers to the interaction between the r-th and s-th price attributes (where $g_{rs} \equiv 0$ if this interaction does not appear in the model).

The function h is R-dimensional with known values on a lattice of points Π_{rj}, $r = 1, \ldots, R$, $j = 1, \ldots, n_r$. We could fit a spline (Greville, 1969; Rice, 1969) to h, treating the Π_{rj} as the knots; however, we would not be using all of the known information. Since g_r and g_{rs} are known at Π_{rj} and (Π_{rj}, Π_{sk}) we can fit one and two-dimensional splines respectively to these functions, thus determining h. The Appendix describes how this is done.

4.2. Finding the optimal value for price

From discussion in the previous sections (and the Appendix), we only need to consider Π_r between two knots. Hence,

$$h^{(p)}(\Pi_r) = \sum_{i=0}^{K} \beta_{pi} \Pi_r^i \quad \text{for } \Pi_{rj} \le \Pi_r \le \Pi_{rj+1} \tag{4}$$

where β_{pi} includes the assumed specified values for the prices of the remaining $p - 1$ products. Hence, the market share for product p is

$$M_p = \frac{\sum_{i=0}^{K} \beta_{pi} \Pi_r^i}{\sum_{j=1}^{P} \sum_{i=0}^{K} \beta_{ji} \Pi_r^i} \tag{5}$$

and the objective function, $M_p(\Pi_r - C_r)$, can be written as:

$$Z(\Pi_r) = \frac{\gamma_0 + \gamma_1 \Pi_r + \cdots + \gamma_K \Pi_r^K}{\delta_0 + \delta_1 \Pi_r + \cdots + \delta_K \Pi_r^K} (\Pi_r - C_r). \tag{6}$$

It is straightforward to solve (6) when $Z'(\Pi_r) = 0$, which is an equation of order $2K$, and compare these results to the values at the knots.

In particular, if $K = 1$, then

$$Z(\Pi_r) = \frac{(\gamma_0 + \gamma_1 \Pi_r)(\Pi_r - C_r)}{\delta_0 + \delta_1 \Pi_r}.$$

Hence,

$$Z'(\Pi_r) = \frac{(\delta_0 - \delta_1 \Pi_r)(\gamma_0 - 2\gamma_1 \Pi_r - C_r\gamma_1) - (\gamma_0 - \gamma_1 \Pi_r)(\Pi_r - C_r)\delta_1}{(\delta_0 - \delta_1 \Pi_r)^2}$$

$$= 0$$

$$\Rightarrow \Pi_r = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

where

$$a = \gamma_1 \delta_1, \quad b = 2\gamma_1 \delta_0,$$

$$c = (\gamma_0 - C_r \gamma_1)\delta_0 + C_r \gamma_0 \delta_1.$$

We find the two points such that $Z'(\Pi_r) = 0$ for $\Pi_{rj} \le \Pi_r \le \Pi_{rj+1}$ for $j = 0, 1, \ldots, n-1$. Finally, we compare Z at these two points, provided that the points are in the appropriate (Π_{rj}, Π_{rj+1}) to determine Π_r^*.

5. A real-world application

The PRIDEM model and decision support system have been implemented on both the main frame (Vax 8700) and the personal computer. A number of industrial applications have been made of PRIDEM over the past three years. We illustrate PRIDEM's application with an actual industry example involving two pharmaceutical companies' pricing strategies in the marketing of a diet supplement for use by hospital patients who have trouble swallowing traditional foodstuffs. (All data have been disguised to respect sponsor confidentiality.)

5.1. Study background

For several years, only one pharmaceutical firm, hereafter called Alpha, had been marketing a special diet supplement for hospital patients with esophagus ailments. The product was designed for drinking (through a straw); it contained a balanced set of nutrients. More recently, a second firm, hereafter called Beta, had developed its own diet supplement. Several of its product properties differed from those of Alpha as well as its marketing and pricing plans.

Prior to Beta's entry, Alpha's ongoing price for its diet supplement was \$41 per day per patient. Beta believed that Alpha's short run monopoly could be upset by penetration pricing; accordingly, Beta introduced its product at only \$38 per individual per day. The results were dramatic; in two years, Beta had penetrated the market to such an extent that the two firms' shares were 28% and 72%, respectively, for Alpha and Beta. At this point, Beta wondered whether its price was 'right' (in the sense of optimizing its contribution to overhead and profit) and what the implications might be if Alpha were to change its still-current price of \$41.

5.2. Designing the conjoint survey

A conjoint study was designed to obtain data for use in the PRIDEM model. First, Beta personnel discussed possible non-price attributes that could affect market shares independently (or possibly interactively with price). Four such attributes were identified:

1. Packaging for Alpha: 4-ounce can (current) versus 6-ounce can (prospective); Beta's dosage was already at 6 ounces per can.
2. Extended contract price guarantee for Alpha: NO (current) versus YES (prospective); Beta had no price guarantee.
3. Concentration of amino acids for Beta: low concentration (current) versus high concentration (prospective); Alpha's concentration was already slightly lower than Beta's current concentration.
4. Educational aids for Beta: NO (current) versus YES (prospective); Alpha already had educational aids.

In addition to the non-price attributes, Beta's management considered several possibilities for identifying market segments. Management settled on two primary segmentation bases:

1. Type of respondent (i.e., as an influence on which brand is purchased)
   a. nurses,
   b. doctors,
   c. hospital pharmacists..
2. Size of hospital
   a. Large (over 500 beds),
   b. small (fewer than 500 beds).

Finally, Beta management estimated that variable costs for producing and distributing the diet supplement were about equal between the two firms; they estimated these costs at $19 per individual per day.

A sample of 390 respondents was selected, according to the two stratifying criteria (profession and hospital size). All interviews were conducted by personal administration, following pre-arranged appointments. Respondents received honoraria for their participation.

The conjoint portion of the interview was based on a master orthogonal experimental design of 50 profile cards. Each profile card contained information on brand names, non-price attribute levels under each brand name, and prices per patient day. The prices were drawn from the following sets:

1. Alpha – $43, $41 (current), $34, $28, $21.
2. Beta – $41, $38 (current), $34, $28, $21.

Each respondent first received a 'base case' profile card, followed by five cards (balanced with respect to prices) from the overall orthogonal design. For each card, the respondent was asked to indicate what his/her recommendation would be to purchasing agents responsible for choosing the diet supplement supplier. Each respondent was asked to split 100 points (constant sum scale) between the two potential suppliers, reflecting their likelihood of recommending each.

Other background information, including the hospital's current use of diet supplements, respondent's role in the contract decision process, years of experience, etc., were also collected for cross-tabulation with the conjoint results.

6. Running the PRIDEM program

Figure 2 shows a portion of the PRIDEM computer run for the problem described above. Illustratively, we input the base-case prices (as a control) and note, of course, the same market shares as originally read in (e.g., Alpha's share is 0.28). We also observe that the contribution to overhead and profit per patient day is $6.16 and $13.68 for Alpha and Beta, respectively.

6.1. *Overall market analysis*

We next consider alternative pricing strategies, conditioned on the non-price attributes remaining at their original (current) levels. Suppose we wish to find Alpha's optimal price at base-case levels. We enter instructions accordingly and find from Figure 2 that its optimal price is $36.19, a decrease from its current level of $41. If Alpha were to reduce its price, with no retaliation from Beta, its share would increase ten percentage-points (from a share of 0.28 to 0.38). Overhead/profit contribution would increase from $6.16 to $6.53.

Next, we repeat the exercise for Beta, conditional on no change in Alpha price from its status quo of $41. In this case Beta's optimum entails an increase in its price to $41 (which then happens to be at parity with Alpha). Beta's share would decline from 0.72 to 0.65 but its contribution would increase from $13.68 to $14.26. [2]

Next, we consider a unilateral strategic change by Beta – one that both improves its non-price attribute levels (from their current levels to their prospective levels) *and* decreases its price from the original $38 level to $34. Given no retaliation from Alpha, the net effect is to increase Beta's share to 0.868 and its contribution to $13.03.

What should Alpha do if Beta drops to $34 and improves its non-price attributes? Assuming that Alpha's only short-run retaliation is price, the PRIDEM model finds that it should lower price from its starting level of $41 to $34 (at parity with Beta's new price).

Next, we consider a case in which Alpha stays at $41 but Beta really drives down its price (to $28). Moreover, both firms improve their respective non-price attributes to level 2 (prospective levels). The net effect of these actions is that Beta's share markedly increases to 0.933 but its contribution drops substantially (to $8.39).

6.2. *Selected segment analysis*

At this point we elect to stay with the same non-price parameters as described immediately above. But now we focus on a specific market segmenting variable-type of respondent: nurses, doctors, and pharmacists. PRIDEM shows that the effects on Beta's share differ by segment: 0.892 (nurses), 0.921 (doctors), and 0.982 (pharmacists). Their weighted average is 0.933, as noted above for the total market analysis.

[2] To conserve on space, the analyses to follow are not shown in Figure 2.

RUN PRIDEM	
INPUT THE NUMBER OF PRODUCTS	· Initial parameter inputs
2	
INPUT THE NO. OF SEG. PROD./PRICE. AND PRICE ATTRIBUTES	
2 6 2	
INPUT THE NO. OF LEVELS FOR SEGMENT ATTRIBUTES	
3 2	
INPUT THE NO. OF LEVELS FOR PRODUCT AND PRICE ATTRIBUTES	
2 2 2 2 5 5	
INDICATE THE FILE WITH THE SEGMENT WEIGHTS	· Segment weights file
PRIDEM.WTS	
INDICATE THE FILE WITH THE PRICE LEVELS	· File containing dollar price amounts
PRIDEM.PRI	
INPUT THE FILE NAME THAT DESCRIBES THE MODEL	· Input parameters for Alpha
ALPHA.INP	
INPUT 1 FOR TUKEY OR FOR TABLE	
2	
INDICATE THE NUMBER OF INTERACTION TERMS	
4	
INPUT THE FILE NAME THAT DESCRIBES THE MODEL	· Input parameters for Beta
BETA.INP	
INPUT 1 FOR TUKEY OR 2 FOR TABLE	
2	
INDICATE THE NUMBER OF INTERACTION TERMS	
4	
INPUT 1 IF THE PRICES ARE INCREASING, 0 IF DECREASING	
0	
INDICATE THE BASE-CASE MARKET SHARES	
28 72	
INDICATE THE BASE-CASE PROD. NON-PRICE ATT. LEVELS	· Initial non-price attribute settings
1 1 1 1	
INPUT THE BASE-CASE PRICES	· Initial price settings
41 38	
INPUT THE VARIABLE COSTS PER PRODUCT	· Initial costs
19 19	
INDICATE THE NEW-CASE NON-PRICE ATT. LEVELS	· Base-case confirmation analysis
1 1 1 1	
INPUT THE NEW-CASE PRODUCT PRICES	
41 38	
INPUT 1 FOR OVERALL, 2 FOR ATTRIBUTE, OR 3 FOR DETAILED ANALYSIS	· Total market analysis for base case
1	
THE MARKET SHARES ARE: 0.280 0.720	· Shares
THE PROFIT RETURNS ARE: 6.16 13.68	· Contributions to overhead/profit
INPUT 1 FOR AN OPTIMAL PRICE ANALYSIS, ELSE 0	
1	
INPUT THE PRODUCT	· Optimal Alpha price conditioned on Beta's price
1	
THE OPTIMAL PRICE =36.187	
THE MARKET SHARES ARE: 0.38 0.62	
THE PROFIT RETURNS ARE: 6.536 11.775	
INPUT 1 FOR AN OPTIMAL PRICE ANALYSIS. ELSE 0	
1	
INPUT THE PRODUCT	Optimal Beta price conditioned on Alpha's price
2	
THE OPTIMAL PRICE =41.000	
THE MARKET SHARES ARE: 0.35 0.65	
THE PROFIT RETURNS ARE: 7.743 14.257	
INPUT 1 FOR AN OPTIMAL PRICE ANALYSIS. ELSE 0	
0	

Figure 2. Illustrative run of PRIDEM (Main-frame version)

Table 2

Round	Price	
	Alpha	Beta
0	$41	$38
1	$36.19	$38
2	$36.19	$39.83

6.3. *Weighted segment analysis*

To round out the discussion, we also consider a weighted segment analysis for both type of respondent and hospital size. Illustratively, we assign weights of 0.5, 0.4, and 0.1 to nurses, doctors, and pharmacists, respectively. We assign weights of 0.8 and 0.2 to large and small hospitals, respectively.

The net result of this parameter setting is a Beta share of 0.909 and an associated contribution of $8.18. These outputs are each lower than their total market counterparts. [3]

6.4. *Dynamic changes*

Up to this point, our PRIDEM illustration did not explore sequential competitive retaliation. It is, however, a simple matter to use the program in such a way that in Round 1 Alpha initiates action; in Round 2 Beta answers in some fashion, and so on.

By way of illustration, a sequence of actions was implemented, based on starting conditions of $41 (Alpha) and $38 (Beta) with all non-price attributes at their current levels. We assume that Alpha starts out as the price "leader," Beta follows suit, and so on (and each tries to optimize its contribution, conditional on the other's prices). For two such rounds, the results are as can be seen in Table 2.

At the end of two rounds – initiation and response – the prices are $36.19 and 39.83, with shares (contributions) of 0.43 ($7.38) and 0.57 ($11.90) for Alpha and Beta, respectively. Of course, given the ability of Alpha and Beta to collude (if no external competitor were present and if total demand were completely inelastic). they could drive up the prices as much as they liked. (Hence, we do not consider further price changing rounds for this example.)

The idea of an external competitor *can* be incorporated into the PRIDEM model by including a $(P+1)$-st product with fixed prices and non-price attribute levels, and a starting share. Then, if Alpha and Beta tried to drive up their prices the external competitor would garner an increasing share of the market.

7. What have we learned?

How did the study's sponsor react to the PRIDEM model? As we have frequently found in applied studies using the model, the sponsor explored the possibilities for non-price attribute changes. In this example, Beta management added a price guarantee and educational aids. These non-price changes were accompanied by a Beta price *increase* to $41 (at parity with Alpha). As of six months after Beta's changes, Alpha had *not* retaliated with either non-price or price changes. While we are not privy to the financial consequences of Beta's strategy, to the best of our knowledge market share remained relatively stable over the six months' time period in question.

To date, the PRIDEM model has been used on several empirical applications, most frequently drawn from the pharmaceutical industry. The predictions made from the model have been cross-checked, where possible, with time-series analyses of historical price changes. As is well known, analyses of such 'natural experiments' are fraught with difficulty. However, in the cases analyzed, the results have been roughly concordant with those obtained from the model.

The main advantages of the PRIDEM model over that proposed by Mahajan, Green, and Goldberg (1982) are twofold. First, market segment responses can be estimated by means of main effects parameters and interactions with price *and* non-price attribute levels. Second, the present model solves for optimal prices, conditioned on fixed levels for price and non-price attributes of competitive products (using variable cost data estimated by the sponsoring firm's financial department). Moreover, use of the model, as a decision support system, is straightforwardly

[3] By applying weights of 1 and 0, one can find results for each of the six possible segment combinations of respondent profession by hospital size.

implemented by non-technical personnel on either a main-frame of personal computer.

There are several limitations to the model, as currently formulated and operationalized. First, the model deals with aggregated responses, where segment differences are measured by within- and between-set interactions. As Moore (1980) has illustrated, researcher-selected segmenting variables may not adequately capture full individual variation in attribute-level part worths. Second, the model does not make allowance for lack of respondent knowledge about actual prices; in some cases the model could overstate price sensitivity, since full comparative pricing information is shown to the respondents. Third, while the model can handle intra-product line pricing (in terms of within-firm competition), it does not consider joint production/distribution costs.

7.1. *Action / reaction sequence*

As briefly described earlier, PRIDEM enables the user to examine action/reaction sequences, albeit in a rather simple way that does not consider changes in buyer preferences or other kinds of new information that might be obtained between successive rounds of price changes.

Theoretical work by Hauser and Shugan (1983), Kumar and Sudharshan (1988) and Choi, DeSarbo, and Harker (1990) represent a very interesting topic to pursue in tandem with the measurement aspects of PRIDEM.

To date, management's reaction to PRIDEM's potential for formulating 'dynamic' (action/reaction) strategies has been less than enthusiastic. In our experience managers are much more concerned with the interplay of non-price *and* pricing strategies, with priority given to the former. Bearing in mind that competitive retaliation to non-price actions is typically more difficult and less immediate, this emphasis is understandable.

When managers do engage in action/reaction gaming, their interest usually does not extend to questions of long term equilibria but, rather, is focused on only two to three moves ahead. Again, we do not find these views naive and 'myopic'. Managers typically lack information regarding competitors' costs, motivations and intentions; moveover, they also face questionable assumptions regarding stability in buyers' perceptions and brand preferences over the time period under study.

7.2. *Conclusions*

These are important caveats and represent opportunities for further research. [4] Hence, we consider the model and its associated decision support system as an interim effort that can (and should) be expanded, consistent with making sure that future versions can be operationalized in terms of accessible buyer preferences and cost data. If we have learned anything from the development of PRIDEM, it is the important fact that useful models must pay due attention to the kinds of measurements and data inputs one hopes to be able to obtain from the environment (e.g., marketplace).

What has made PRIDEM work is the simple fact that conjoint data *can* be obtained in reasonably realistic ways from prospective buyers. Without this measurement linkage (and at the back end, a user-friendly computer system), PRIDEM could have easily joined the ranks of a large array of technically attractive models with few (or no) users.

Appendix

In this section we describe, in further detail, the spline fitting procedure that enabled us to interpolate between the discrete price points utilized in the experimental design.

A.1. *Fitting one-dimensional splines*

Let g be a function of one variable. Assume that we know the value of g at $\xi_0 \leq \cdots \leq \xi_n$ (i.e., at $n+1$ knots). We want to interpolate to find $g(x)$ smoothly; $\forall x \in [\xi_0, \xi_n]$. We approximate $g(x)$ by a p-dimensional polynomial in each interval $[\xi_{i-1}, \xi_i]$, $i = 1, \ldots, n$. Note that the

[4] For other illustrations of recent developments in pricing research, see DeSarbo et al. (1987), Nagle (1984), Rao (1984), and Robinson and Lakhani (1975).

meaning of the variables here (e.g., p below) is different from that used in the main text. That is,

$$g(x) = \sum_{j=0}^{p} \alpha_{ij} x^j \quad \text{for } \xi_{i-1} \le x \le \xi_i.$$

Let $g^{(k)}$ denote the k-th derivative of x. We know $g(\xi_{i-1})$ and $g(\xi_i)$; for smoothness we assume that $\lim_{x \uparrow \xi_{i-1}} g^{(k)}(x) = \lim_{x \downarrow \xi_{i-1}} g^{(k)}(x)$ for $k = 1, \ldots, p-1$. This gives us $p+1$ linear equations in $p+1$ unknowns and hence $\alpha_{i0}, \ldots, \alpha_{ip}$ are determined. Specifically, let $v_1 = g(\xi_{i-1})$, $v_2 = g(\xi_i)$ and $t_k = \lim_{x \uparrow \xi_{i-1}} g^{(k)}(x)$, $k = 1, \ldots, p-1$. Let $\boldsymbol{\alpha}_i = (\alpha_{i0}, \ldots, \alpha_{ip})$ and

$$X = \begin{bmatrix} 1 & \xi_{i-1} & \cdots & \xi_{i-1}^p \\ 1 & \xi_i & \cdots & \xi_i^p \\ 0 & 1 & \cdots & p\xi_{i-1}^{p-1} \\ & & & \vdots \\ 0 & 0 & \cdots & p!\xi_{i-1} \end{bmatrix}.$$

Then,

$$\boldsymbol{\alpha} X = \begin{bmatrix} v_1 \\ v_2 \\ t_1 \\ \vdots \\ t_{p-1} \end{bmatrix},$$

from which

$$\boldsymbol{\alpha} = X^{-1} \begin{bmatrix} v_1 \\ v_2 \\ t_1 \\ \vdots \\ t_{p-1} \end{bmatrix}.$$

All we need to specify exogenously is $g^{(1)}(\xi_0), \ldots, g^{(p-1)}(\xi_0)$.

Linear interpolation is a special case of the above. Solving for $(\alpha_{i0}, \alpha_{i1})$ yields

$$\alpha_{i1} = \frac{g(\xi_i) - g(\xi_{i-1})}{\xi_i - \xi_{i-1}}$$

and

$$\alpha_{i0} = g(\xi_{i-1}) - \xi_{i-1}\alpha_{i1}.$$

A.2. Fitting two-dimensional splines

Let g be a function of two variables. Assume that we know the value of g at the lattice of points (ξ_i, ξ_j'), $i = 1, \ldots, m$, $j = 1, \ldots, n$. We want to interpolate to find $g(x, y)$ smoothly for all x and y, $\xi_0 \le x \le \xi_m$ and $\xi_0' \le y \le \xi_n'$. We approximate $g(x, y)$ by a polynomial in each rectangle $\xi_{i-1} \le x \le \xi_i$, $\xi_{j-1}' \le y \le \xi_j'$. That is,

$$g(x, y) = \sum_{k=0}^{p} \sum_{l=0}^{p} \alpha_{ijkl} x^k y^l$$

$$\text{for } \xi_{i-1} \le x \le \xi_i \text{ and } \xi_{j-1}' \le y \le \xi_j'.$$

In a manner similar to the one-dimensional case, smoothness conditions and $t_{00} \equiv g(\xi_{i-1}, \xi_{j-1}')$, $t_{01} \equiv g(\xi_{i-1}, \xi_j')$, $t_{10} \equiv g(\xi_i, \xi_{j-1}')$, and $t_{11} \equiv g(\xi_i, \xi_j')$ determine the α_{ijkl}. In particular, let $p = 1$. Then $g(x, y) = \alpha_{ij00} + \alpha_{ij10}x + \alpha_{ij01}y + \alpha_{ij11}xy$. We then have four linear equations in four unknowns

$$t_{00} = \alpha_{ij00} + \alpha_{ij10}\xi_{i-1} + \alpha_{ij01}\xi_{j-1}' + \alpha_{ij11}\xi_{i-1}\xi_{j-1}',$$

$$t_{01} = \alpha_{ij00} + \alpha_{ij10}\xi_{i-1} + \alpha_{ij01}\xi_j' + \alpha_{ij11}\xi_{i-1}\xi_j',$$

$$t_{10} = \alpha_{ij00} + \alpha_{ij10}\xi_i + \alpha_{ij01}\xi_{j-1}' + \alpha_{ij11}\xi_i\xi_{j-1}',$$

and

$$t_{11} = \alpha_{ij00} + \alpha_{ij10}\xi_i + \alpha_{ij01}\xi_j' + \alpha_{ij11}\xi_i\xi_j'.$$

These four equations have the solution:

$$\alpha_{ij11} = \frac{t_{11} - t_{10} - t_{01} + t_{00}}{\xi_i\xi_j' - \xi_i\xi_{j-1}' - \xi_{i-1}\xi_j' + \xi_{i-1}\xi_{j-1}'},$$

$$\alpha_{ij10} = \frac{t_{10} - t_{00} - \alpha_{ij11}\xi_{j-1}'(\xi_i - \xi_{i-1})}{\xi_i - \xi_{i-1}},$$

$$\alpha_{ij01} = \frac{t_{01} - t_{00} - \alpha_{ij11}\xi_{i-1}(\xi_j' - \xi_{j-1}')}{\xi_j' - \xi_{j-1}'},$$

and

$$\alpha_{ij00} = t_{00} - \alpha_{ij10}\xi_{i-1} - \alpha_{ij01}\xi_{j-1}' - \alpha_{ij11}\xi_{i-1}\xi_{j-1}'.$$

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APPENDIX B

MASTER EXPERIMENTAL DESIGN CARDS Nos. 1 – 140

ARRANGED IN 20 BLOCKS OF 7 CARDS EACH

1	2	3	1	1	1	4	3	3	3	5	2	2	1
2	1	3	1	1	1	1	1	6	1	7	4	3	1
4	4	2	4	2	3	4	1	2	4	4	5	4	1
1	2	2	2	3	3	2	2	4	5	7	6	7	1
3	1	1	2	2	4	3	4	5	6	6	3	6	1
2	3	4	3	4	2	3	3	1	7	3	1	5	1
3	3	1	4	3	2	1	2	7	2	2	3	1	1
1	1	1	4	2	2	3	2	6	2	1	4	4	2
4	4	2	3	1	4	4	3	4	6	7	3	7	2
2	3	3	2	3	1	4	3	7	4	6	2	4	2
3	4	4	2	1	1	1	1	2	5	2	6	2	2
2	1	2	4	3	3	2	2	3	3	5	1	5	2
4	2	4	1	4	2	2	4	1	1	3	5	3	2
3	2	3	3	2	3	1	1	5	7	1	4	1	2
1	3	1	2	1	1	1	3	4	5	3	5	5	3
4	2	3	4	3	4	4	4	3	6	1	1	4	3
3	4	2	1	4	1	1	4	1	1	6	7	7	3
1	3	3	2	3	2	3	2	6	3	4	3	1	3
2	4	4	3	4	3	3	3	7	2	1	6	2	3
3	1	4	1	2	4	2	1	2	7	5	4	7	3
1	2	1	3	1	3	4	1	5	4	7	2	3	3
3	4	3	3	1	1	2	4	6	4	3	1	1	4
2	2	4	3	3	1	3	4	4	1	2	2	6	4
3	1	1	4	3	3	4	3	7	5	1	3	3	4
1	1	3	2	2	2	1	3	3	6	4	6	2	4
2	4	2	1	4	3	4	2	5	7	5	5	5	4
4	2	1	1	2	2	3	1	4	3	2	7	6	4
1	3	2	2	1	4	4	1	1	2	6	4	4	4
4	1	2	2	4	1	1	4	6	5	1	3	4	5
1	3	3	1	3	1	3	4	3	2	7	5	5	5
1	2	2	1	2	4	3	3	5	1	3	1	7	5
4	3	4	3	2	3	1	2	2	4	2	4	6	5
3	3	1	3	4	4	4	2	7	3	5	7	1	5
3	4	3	4	1	3	2	1	4	5	4	6	4	5

2	1	1	3	4	2	4	1	3	4	3	5	6	6
3	2	4	2	1	3	3	4	5	6	5	1	4	6
1	3	4	1	4	1	1	3	2	3	1	3	3	6
4	2	2	3	1	2	1	3	1	5	4	6	1	6
2	1	2	2	3	4	2	3	6	4	2	7	5	6
1	3	1	4	2	4	2	4	4	7	7	2	2	6
4	4	3	4	2	3	3	2	7	1	6	4	1	6
1	1	4	4	4	4	2	4	7	6	4	5	6	7
4	4	1	4	4	2	1	1	3	5	2	1	7	7
3	1	2	3	1	1	4	2	4	6	3	4	1	7
2	2	1	1	2	3	1	3	2	2	5	2	4	7
3	3	3	3	2	2	4	4	6	1	6	7	5	7
4	4	2	1	3	1	3	2	1	4	1	6	3	7
2	4	4	2	3	4	2	1	1	3	7	3	2	7
4	1	4	4	1	1	1	2	5	7	4	5	1	8
1	4	3	3	2	4	1	4	1	3	2	2	5	8
3	3	2	3	4	3	2	3	4	2	6	1	3	8
2	2	1	1	4	3	3	2	3	4	1	6	7	8
1	4	1	2	3	2	2	1	7	1	5	1	3	8
2	2	2	2	3	2	4	4	6	5	7	4	6	8
4	3	3	4	1	4	4	1	2	6	3	7	2	8
3	3	2	3	3	4	1	3	6	7	5	6	6	9
1	1	3	4	3	3	1	1	5	1	6	2	7	9
2	2	2	4	4	1	3	3	2	6	4	7	3	9
2	4	1	2	2	2	2	4	4	3	1	5	4	9
3	2	3	1	4	4	3	1	1	5	5	4	5	9
4	4	4	1	1	3	4	4	3	2	7	3	1	9
4	1	1	2	2	1	2	2	7	2	3	1	2	9
3	1	2	3	3	2	1	4	5	2	4	2	2	10
1	3	2	1	4	3	2	1	6	6	2	5	1	10
4	2	1	2	4	3	4	3	1	7	4	1	6	10
4	3	3	2	2	2	2	3	7	4	7	4	7	10
2	1	1	4	1	4	3	4	2	3	6	6	5	10
1	2	4	4	1	1	1	2	4	4	1	7	2	10

4	2	4	3	1	2	2	2	2	6	5	2	5	11
1	4	3	4	3	3	2	3	1	2	3	7	6	11
2	3	1	1	1	3	3	3	6	1	4	3	2	11
3	2	4	4	2	1	4	2	6	3	6	5	7	11
2	4	2	1	2	4	1	1	4	7	6	6	1	11
1	1	2	3	4	1	1	1	7	3	7	1	4	11
4	3	1	2	4	4	3	4	5	5	2	4	3	11
3	1	1	1	1	2	2	2	1	6	4	2	7	12
2	2	4	2	2	1	4	1	6	2	4	1	7	12
4	3	1	2	3	3	3	1	3	1	3	7	2	12
1	4	3	3	3	1	4	4	2	7	5	5	6	12
3	2	3	1	1	2	1	4	7	4	6	3	5	12
2	3	2	3	2	4	2	2	3	5	1	2	3	12
4	4	3	4	4	4	4	3	5	3	2	4	2	12
3	2	2	2	2	1	3	1	7	6	2	5	2	13
1	1	4	4	2	3	4	4	1	5	5	7	1	13
4	3	4	1	3	1	2	1	5	2	6	6	6	13
3	3	2	1	2	4	1	4	3	4	4	1	3	13
4	4	1	4	1	4	3	3	6	7	7	2	5	13
1	1	1	3	4	2	4	3	2	1	1	6	7	13
2	2	3	3	1	2	2	2	5	3	3	3	4	13
2	3	3	4	2	3	1	2	1	6	7	1	6	14
1	1	4	1	4	4	2	2	6	5	6	2	2	14
1	4	2	3	1	2	3	1	5	2	2	7	3	14
2	3	4	4	4	3	4	4	4	2	3	3	7	14
4	3	2	2	1	2	3	4	7	7	5	6	4	14
3	2	3	2	3	4	2	3	2	1	1	5	1	14
3	1	1	1	3	1	4	3	4	4	4	4	5	14
3	4	3	2	4	3	3	4	2	7	3	2	7	15
1	1	4	2	1	4	3	3	4	4	2	1	1	15
2	4	3	1	3	4	4	2	7	5	4	7	3	15
3	3	1	4	4	1	4	2	5	3	7	6	4	15
1	2	2	3	2	1	2	1	3	7	4	3	6	15
2	3	2	4	1	2	1	4	1	1	5	4	2	15

Appendix B (con't)

MASTER EXPERIMENTAL DESIGN CARDS Nos. 1 – 140,

ARRANGED IN 20 BLOCKS OF 7 CARDS EACH

4	1	3	1	3	1	2	3	1	7	2	3	4	16
2	4	1	3	2	1	4	4	6	6	5	6	3	16
3	4	2	2	1	4	4	2	5	1	1	2	6	16
4	2	2	4	4	2	2	3	4	4	6	2	1	16
3	2	4	2	4	4	1	1	3	2	7	7	5	16
1	3	4	3	3	3	3	4	7	3	4	4	7	16
2	1	3	1	1	2	3	2	2	5	7	1	6	16
1	2	3	4	4	2	1	2	6	7	3	6	3	17
1	4	1	2	4	1	2	4	2	2	4	4	5	17
3	3	4	3	1	3	2	3	3	1	2	5	4	17
4	2	1	3	3	4	3	2	1	5	6	5	2	17
4	1	2	1	1	3	2	4	7	3	1	7	6	17
2	1	4	4	3	4	3	1	4	4	5	3	7	17
2	4	1	1	2	2	1	3	5	6	7	7	1	17
2	2	3	1	1	4	1	2	7	2	2	5	7	18
1	3	4	1	2	2	4	1	5	5	1	1	5	18
4	1	3	3	4	1	3	2	4	1	7	7	4	18
4	4	1	3	3	3	1	4	2	6	6	1	2	18
2	2	1	4	3	1	2	4	3	7	2	4	1	18
3	1	4	2	2	3	4	3	1	3	3	6	3	18
3	4	2	4	4	2	3	1	6	4	5	3	6	18
3	4	4	1	3	2	4	2	4	7	2	1	2	19
1	4	1	2	1	3	1	2	3	3	6	4	6	19
4	3	3	3	2	1	2	3	5	5	5	3	7	19
2	3	3	2	4	1	3	1	1	6	1	2	1	19
1	2	1	1	3	4	1	4	6	4	3	7	4	19
3	1	2	4	2	2	3	3	2	2	7	5	3	19
4	2	4	4	4	4	2	1	7	1	4	6	5	19
2	4	4	4	2	1	1	3	7	5	3	2	6	20
4	1	3	2	4	4	1	2	4	2	5	5	3	20
3	3	1	4	1	1	2	1	1	7	1	7	7	20
1	2	2	2	2	3	4	2	2	1	2	3	5	20
4	3	2	1	3	2	4	1	2	3	3	2	1	20
2	1	3	3	4	3	2	4	5	4	7	6	2	20
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix C

ILLLUSTRATIVE STIMULI CARDS

C001

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	19.44	Yes	No	Yes		8-10
Dentsply BIOBLEND IPN	23.71	Yes	No	Yes		11-13
Dentsply CLASSIC	3.90	Yes	No	Yes		14-16
Dentsply PORTRAIT IPN	26.28	Yes	No	Yes		17-19
Dentsply TRUBLEND SLM	22.22	Yes	No	Yes		20-22
Ivoclar SR VIVODENT PE	20.04	Yes	No	Yes		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	15.96	No	Yes	Yes		32-34
Universal VERILUX	26.84	Yes	Yes	No		35-37
Vita VITAPAN	29.01	Yes	Yes	No		38-40
				Total =	100 points	

C002

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	21.76	No	Yes	No		8-10
Dentsply BIOBLEND IPN	21.07	No	Yes	No		11-13
Dentsply CLASSIC	3.90	No	Yes	No		14-16
Dentsply PORTRAIT IPN	26.28	No	Yes	No		17-19
Dentsply TRUBLEND SLM	22.22	No	Yes	No		20-22
Ivoclar SR VIVODENT PE	20.04	Yes	Yes	Yes		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	15.96	No	No	Yes		32-34
Universal VERILUX	19.52	Yes	No	No		35-37
Vita VITAPAN	23.21	Yes	No	Yes		38-40
				Total =	100 points	

C003

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	26.60	Yes	Yes	No		8-10
Dentsply BIOBLEND IPN	28.97	Yes	Yes	No		11-13
Dentsply CLASSIC	3.90	Yes	Yes	No		14-16
Dentsply PORTRAIT IPN	23.65	Yes	Yes	No		17-19
Dentsply TRUBLEND SLM	30.56	Yes	Yes	No		20-22
Ivoclar SR VIVODENT PE	22.55	Yes	No	No		23-25
Justi BLEND	12.84 f	Yes	Yes	Yes		26-28
Kenson RESIN	3.75 f	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	19.95	Yes	No	No		32-34
Universal VERILUX	26.84	No	Yes	Yes		35-37
Vita VITAPAN	23.21	Yes	No	No		38-40
				Total =	100 points	

C004

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	19.44	Yes	No	No		8-10
Dentsply BIOBLEND IPN	23.71	Yes	No	No		11-13
Dentsply CLASSIC	3.90	Yes	No	No		14-16
Dentsply PORTRAIT IPN	23.65	Yes	No	No		17-19
Dentsply TRUBLEND SLM	25.00	Yes	No	No		20-22
Ivoclar SR VIVODENT PE	25.05	No	Yes	Yes		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75 f	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	19.95 f	No	No	Yes		32-34
Universal VERILUX	21.96	No	Yes	No		35-37
Vita VITAPAN	26.11	No	No	Yes		38-40
				Total =	100 points	

C005

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	24.18	No	Yes	Yes		8-10
Dentsply BIOBLEND IPN	21.07	No	Yes	Yes		11-13
Dentsply CLASSIC	3.90	No	Yes	Yes		14-16
Dentsply PORTRAIT IPN	21.02	No	Yes	Yes		17-19
Dentsply TRUBLEND SLM	25.00	No	Yes	Yes		20-22
Ivoclar SR VIVODENT PE	22.55	No	Yes	No		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	21.95	No	Yes	No		32-34
Universal VERILUX	24.40	Yes	No	Yes		35-37
Vita VITAPAN	31.91	No	Yes	No		38-40
				Total =	100 points	

C006

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	21.76	Yes	Yes	Yes		8-10
Dentsply BIOBLEND IPN	26.34	Yes	Yes	Yes		11-13
Dentsply CLASSIC	3.90	Yes	Yes	Yes		14-16
Dentsply PORTRAIT IPN	28.91	Yes	Yes	Yes		17-19
Dentsply TRUBLEND SLM	27.78	Yes	Yes	Yes		20-22
Ivoclar SR VIVODENT PE	27.56	No	No	Yes		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	17.96	Yes	No	Yes		32-34
Universal VERILUX	24.40	Yes	Yes	Yes		35-37
Vita VITAPAN	29.01	No	Yes	Yes		38-40
				Total =	100 points	

C007

5-7

(1) Plastic Teeth BRAND/LINE	(2) Anterior Card (1 x 6) PRICE IN $	(3) Available From			(4) Your Response: SHARE OF PURCHASES (PERCENT)	
		LOCAL DEALER	MAIL-ORDER DEALER	MANUFACTURER DIRECTLY		
Dentsply BIOFORM IPN	24.18	No	No	Yes		8-10
Dentsply BIOBLEND IPN	26.34	No	No	Yes		11-13
Dentsply CLASSIC	3.90	No	No	Yes		14-16
Dentsply PORTRAIT IPN	21.02	No	No	Yes		17-19
Dentsply TRUBLEND SLM	30.56	No	No	Yes		20-22
Ivoclar SR VIVODENT PE	25.05	Yes	Yes	No		23-25
Justi BLEND	12.84	Yes	Yes	Yes		26-28
Kenson RESIN	3.75	Yes	Yes	Yes		29-31
Myerson DURABLEND SPECIAL RESIN	17.96	Yes	Yes	No		32-34
Universal VERILUX	19.52	Yes	No	Yes		35-37
Vita VITAPAN	26.11	Yes	Yes	Yes		38-40
				Total =	100 points	

Appendix D

THE SCREENER

When Speaking To The Respondent

Hello, my name is _______ and I represent Guideline Research Corporation, a nationwide market research organization located in New York City. We have been in business for over twenty-five years conducting research studies among both consumers and the dental profession.

Please be assured that we are not selling anything. Any answers we get will be kept strictly confidential and will be reported only when grouped with the answers of the other participating dental laboratories. For your participation, we would send you a check for $20.

A. But first, does your laboratory fabricate dentures using plastic artificial teeth?

Yes .... 1 ➔ ***Continue***
No .... 2 ➔ ***Explain to respondent that he doesn't qualify for interview. Record in box below. Erase and re-use screener.***

Terminate Q. A: Lab Doesn't Fabricate Dentures Using Plastic Artificial Teeth

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	(15,16)
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	

B1. Are you the person responsible for selecting the plastic artificial teeth your laboratory will use?

Yes .... 1 ➔ ***(Ask Q. B2)***
No .... 2 ➔ ***(Ask to speak to person responsible for selecting the teeth the laboratory uses, if he is unavailable, leave your 800 number, asking him to call back at his earliest convenient.)***

If respondent does not qualify and no other respondent name is obtained as the person responsible for selecting the plastic artificial teeth the laboratory uses, explain to respondent that he doesn't qualify for interview. Record in box below. Erase and re-use screener.

Terminate Q. B1: Not Responsible for Selecting Plastic Artificial Teeth Laboratory Uses/ Name of Person Responsible Not Obtainable

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	(17,18)
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	

B2. Including you, if you too are a technician, how many laboratory technicians does your laboratory employ at this location?

____________ (19-21)

C. We would like to send you two envelopes. One will be marked envelope A and can be opened as soon as you receive it, or at your convenience. This envelope contains a few questions regarding your labs' purchase and use of plastic artificial teeth. It should take only about 10 minutes to fill out. Please answer these questions before the time arrives for a phone call from Guideline Research.

If you like, you can glance through Envelope B. However, please do not answer any of the questions in Envelope B until you receive our phone call. Upon completion of the contents of both envelopes, the interviewer will verify your name and address so we can mail you the check for $20, as our gift to you for your participation in our survey.

Again, all of your answers will remain confidential and will be used for tabulation purposes only.

D. ***If qualified but refuses, record in box below.***

Terminate Q. D: Qualified Refusals

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	(22,23)
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	

24-79R
80-1

Appendix E

THE QUESTIONNAIRE

Guideline
Research Corporation
3 West 35th Street. New York. N.Y. 10001
(212) 947-5140
Fax (212) 629-0061

June, 1998

Dear Respondent:

We at Guideline Research are very pleased that you have agreed to participate in our national survey of dental laboratories regarding their purchase and use of plastic artificial teeth.

Please note that two envelopes are enclosed. Envelope "A" can be opened right now, or at your convenience. This envelope contains a few questions regarding your lab's purchase and use of plastic artificial teeth. It should take only about 10 minutes to fill out. Please answer these questions *before* the time arrives for your phone call from Guideline Research.

If you like, you can glance through Envelope "B". However, please do not answer any of the questions until you receive our phone call. Upon receipt of your completed materials from Envelope "A" and Envelope "B", we will send you a check for $20 as a thank you for your participation.

Thanks again for all of your help. All of your answers will remain confidential and will be used for tabulation purposes only.

Sincerely,

Larry Adams

Larry Adams
Research Coordinator

GUIDELINE RESEARCH CORPORATION
3 West 35th Street
New York, NY 10001

JOB #U09-018

June, 1998

4-5R

General Background Information About Your Dental Laboratory

1. Where is your dental laboratory located:

   City/Town ______________________

   State ______________________ (6-7)

2. Which of the following statements best describes your dental lab? ***(Please check one box)*** (8)

   My lab is independently owned ....☐ -1
   My lab is owned by a lab chain ....☐ -2

3. Is your lab affiliated with a lab products purchasing group?

   Yes ....☐ -1 No ....☐ -2 (9)

4. How many of your technicians fabricate dentures?

   ________ ***Number of technicians***
   (10-12)

   How far away (in miles) is the nearest artificial teeth dealer from your lab.

   ________ ***Miles (approximately)***
   (13-16)

6. How far away (in miles) is the dealer from whom you purchase most of your artificial teeth.

   ________ ***Miles (approximately)***
   (17-20)

7. How often do you obtain artificial teeth from a dealer on the same day that you order them? ***(Please check one box)***

   Never.........................☐ -1 Sometimes................☐ -3 (21)
   Seldom.......................☐ -2 Almost always...........☐ -4

8. How often do you receive personal visits from dealer sales representatives? ***(Please check box)***

   More than once a week ....☐ -1 (22)
   More than once a month but no more than once a week ....☐ -2
   More than once every 3 months but no more than once a month..☐ -3
   No more than once every 3 months....................................☐ -4
   Never..☐ -5

`. Please consider the following brands and lines of artificial teeth. Which column best describes your awareness/use of them?

23-24R

Name Of Brand Line	Never heard of it -1-	Have heard of but not used -2-	Have used at least once in the past -3-	Have used at least once in the last 12 months -4-	Used regularly over past 6 months -5-	
Dentsply						
Bioform IPN	☐	☐	☐	☐	☐	(25)
Bioblend IPN	☐	☐	☐	☐	☐	(26)
Classic	☐	☐	☐	☐	☐	(27)
Portrait IPN	☐	☐	☐	☐	☐	(28)
Trublend SLM	☐	☐	☐	☐	☐	(29)
Vita						
Vitapan	☐	☐	☐	☐	☐	(30)
Ivoclar						
Vivodent PE	☐	☐	☐	☐	☐	(31)
Universal						
Verilux	☐	☐	☐	☐	☐	(32)
Myerson						
Durablend Special Resin	☐	☐	☐	☐	☐	(33)
Kenson						
Resin	☐	☐	☐	☐	☐	(34)
Justi						
Blend	☐	☐	☐	☐	☐	(35)

)a. Please indicate in column (a) below the percentage in dollars each listed or other artificial tooth line accounted for of the total amount of plastic artificial teeth your lab used in the past six months. ***(Total should add to 100%)***

10b. Please indicate in column (b) below the percentage in dollars each listed or other artificial tooth line accounts for of your total current stock. ***(Total should add to 100%)***

10c. Please indicate in column (c) below the average dollar value over the last 6 months of each listed or other artificial tooth line you have on consignment, if any.

	a.) % (in $) of teeth used in last 6 months	b.) % (in $) of teeth currently stocked	c.) Average $ value of teeth on consignment over last 6 months
<u>Dentsply</u>			
Bioform IPN	______ (36-37)	______ (64-65)	______ (18-21)
Bioblend IPN	______ (38-39)	______ (66-67)	______ (22-25)
Classic	______ (40-41)	______ (68-69)	______ (26-29)
Portrait IPN	______ (42-43)	______ (70-71)	______ (30-33)
Trublend SLM	______ (44-45)	______ (72-73)	______ (34-37)
<u>Vita</u>			
Vitapan	______ (46-47)	______ (74-75)	______ (38-41)
<u>Ivoclar</u>			
Vivodent PE	______ (48-49)	______ (76-77)	______ (42-45)
<u>Universal</u>			
Verilux	______ (50-51)	______ (78-79)	______ (46-49)
		80-2 | 4-5R	
<u>Myerson</u>			
Durablend Special Resin	______ (52-53)	______ (6-7)	______ (50-53)
<u>Kenson</u>			
Resin	______ (54-55)	______ (8-9)	______ (54-57)
<u>Justi</u>			
Blend	______ (56-57)	______ (10-11)	______ (58-61)
Other (Please Specify)			
______________	______ (58-59)	______ (12-13)	______ (62-65))
______________	______ (60-61)	______ (14-15)	______ (66-69)
______________	______ (62-63)	______ (16-17)	______ (70-73)
TOTAL	100%	100%	

1. Please estimate the percentage of cases where the **dentist** (rather than the tab technician) selects the brand/line of artificial tooth.

   ________ % of cases where dentist selects
   (74-75)

12. Please estimate the percentage of cases where the **dentist** (rather than the lab technician) selects the precise:

    Mold ________ % specified by dentist
    (76-77)

    Shade ________ % specified by dentist
    (78-79)

80-3

B. Brand/Line Attribute Importance

In your selection of a particular artificial tooth brand and line, how important are the following attributes? Please circle the number that comes closest to describing each attribute, ranging from ...

10 - indicating extremely important, down to
1 - indicating not at all important

4-5R

Brand/Line Manufacturer...	Extremely Important									Not At All Important	
Provides technical assistance and product support	10	9	8	7	6	5	4	3	2	1	(6)
Has lenient policy for returns/exchanges of broken sets	10	9	8	7	6	5	4	3	2	1	(7)
Offers a wide range of tooth lines (offers teeth in premium, mid-range, and economy segments)	10	9	8	7	6	5	4	3	2	1	(8)
Offers a wide variety and range of tooth shapes and/or sizes	10	9	8	7	6	5	4	3	2	1	(9)
Offers a wide variety and range of tooth shades	10	9	8	7	6	5	4	3	2	1	(10)
Has Vita-shaded teeth	10	9	8	7	6	5	4	3	2	1	(11)
Has an accurate shade system/ shade guide	10	9	8	7	6	5	4	3	2	1	(12)
Offers teeth in American rather than European molds	10	9	8	7	6	5	4	3	2	1	(13)
Offers teeth that are highly aesthetic	10	9	8	7	6	5	4	3	2	1	(14)
Offers teeth that are highly wear resistant	10	9	8	7	6	5	4	3	2	1	(15)
Offers teeth that are highly stain resistant	10	9	8	7	6	5	4	3	2	1	(16)
Offers teeth that have a functional occlusal design	10	9	8	7	6	5	4	3	2	1	(17)
Offers teeth that are easy for lab technicians to set up	10	9	8	7	6	5	4	3	2	1	(18)

C. Dealer Attribute Importance

In your selection of a particular dental supply dealer from whom to buy teeth, how important are the following attributes? Please circle the number that comes closest to describing the importance of each dealer attribute, ranging from ...

10 - indicating extremely important, down to
1 - indicating not at all important

Dealer...	Extremely Important 10	9	8	7	6	5	4	3	2	Not At All Important 1	
Has a local inventory of a comprehensive stock of teeth (in wide variety of shades, molds, and sizes)	10	9	8	7	6	5	4	3	2	1	(19)
Has same day availability of teeth	10	9	8	7	6	5	4	3	2	1	(20)
Sells a wide range of lab products (other than teeth)	10	9	8	7	6	5	4	3	2	1	(21)
Has a wide variety of manufacturers/ brands of any given product	10	9	8	7	6	5	4	3	2	1	(22)
ills orders promptly and accurately	10	9	8	7	6	5	4	3	2	1	(23)
Provides personal visits from dealer sales representatives	10	9	8	7	6	5	4	3	2	1	(24)
Provides consignment or other financing arrangement	10	9	8	7	6	5	4	3	2	1	(25)
Provides inventory management and restocking (including for consignment stocks)	10	9	8	7	6	5	4	3	2	1	(26)
Handles returns and exchanges of broken sets	10	9	8	7	6	5	4	3	2	1	(27)
Provides technical assistance and product support (by sales representatives and/ or tooth counter personnel)	10	9	8	7	6	5	4	3	2	1	(28)
Has dealer sales representatives or tooth counter personnel with whom you have an established relationship	10	9	8	7	6	5	4	3	2	1	(29)

30-79R	80-4

Instructions For Responding To Materials In Envelope B

Thanks very much for your continued participation in our survey. The envelope (Envelope B) contains eight cards. Please look at these cards now. Each card describes a possible business scenario. Please start with the top card, labeled in the upper, right-hand corner as C-141. As you'll note, the first column of this card lists eleven brand/LINE names of plastic artificial teeth (the other seven cards list the same eleven brand/LINE names).

Column 2 shows the approximate current price in dollars (not including any shipping cost), of an anterior 1 by 6 card. (As you go through all eight cards, you'll note that these prices may change from card to card.)

Column 3 shows three kinds of distribution availability: local dealer, mail-order dealer (a dealer that ships teeth from a non-local location), and direct from the manufacturer. A given manufacturer may have some combination of distribution availability, e.g., yes, yes, no. Considering brand/LINE differences, price differences, and distribution availability differences, we'd like you to allocate 100 points across the eleven brands

In such a way as to reflect the share of your total plastic teeth business volume (in units) that you would place with each of these brand/LINES over the next three months, given the information shown on the card.

You can assign ZERO points to one or more suppliers if you feel that you would place no orders with them during the next three months. However, please make sure that the TOTAL number of assigned points add to 100.

As you have finished your point allocation for the first card, please read off to me your point allocation to each supplier (including ZERO points if that's applicable). (Interviewer: check that total is 100.)

Now let's proceed to the next card. Each card will be different from the rest in one or more respects -- price or type of distribution availability. For each of the scenarios, please indicate your point allocation under each set of conditions.

Appendix F

FIELD INSTRUCTIONS

Guideline
Research Corporation

3 West 35th Street, New York, N.Y. 10001
(212) 947-5140
Fax (212) 629-0061

#U09-018
Dental Laboratory Study
June 1998

Dear Supervisor:

Enclosed are the following materials for our "Dental Laboratory Study":

- Screeners (white)
- 2nd Call Instructions Sheet
- Envelope A (Pre-Stuffed)
- Envelope B (Pre-Stuffed)
- Business Reply Envelope
- Respondent Cover Letter
- US Priority Mailing Envelopes
- Practice Interviews
- Progress Report Sheet
- Validation Listing Sheet
- Airbill to return work
- Sample (sent via Modem)

OVERVIEW/STUDY DESIGN

This is a Phone Mail Phone WATS study. All recruiting and interviewing is to be conducted during local business hours using the sample provided.

All respondents will be recruited via phone then mailed a packet via US Priority mail, then called again on the phone approximately 4-5 days after the mailing. At the time of the second call the respondents will be instructed on how to complete the forms in Envelope B and to return the contents of Envelope A and Envelope B back to GRC.

SCHEDULE

Recruiting

Brief and Begin: ------------------------------ Friday, June 19
Progress Report: ------------------------------ Daily by 10:00 AM

End Recruiting: ------------------------------ Monday, July 13

2nd Calls

Brief and Begin ------------------------------ Wednesday, June 24th
Progress Report ------------------------------ Daily by 10:00 AM
End Second Calls ------------------------------ Wednesday, July 22nd

INTERVIEWING HOURS

Interviewing should be scheduled during local business hours.

QUOTA

You are to recruit 500 respondents who agree to participate.

You are to mail packets to all 500 respondents who were recruited.

You are to call back all 500 respondents who were recruited and a packet mailed out to.

ELIGIBILITY REQUIREMENTS

In order to qualify for this study, respondents must meet the following requirements:

- Laboratory must fabricate dentures using plastic artificial teeth (Q.A)
- Respondent must be responsible for selecting the plastic artificial teeth the laboratory uses (Q.B1)
- Laboratory must fabricate dentures using plastic artificial teeth (Q.B1)
- Respondent must be willing to participate (accept receipt of the packet) (Q.C)
- Respondent must have completed contents of Envelope A and Completed 2nd Call.

SAMPLE

We have provided you with a national sample of 10,000 numbers.

Please only open 1 replicate at a time. You are to start at the beginning of the first replicate and work through all the names in that replicate before beginning the second replicate. Each sample sheet should be used as your call record sheet to document every dialing attempt made to each potential respondent. A minimum of 3 dialing attempts must be made for each number.

MATERIALS

There is one version of the Screener (white). Note: All the screeners have been pre-numbered. This number is your reference number when mailing the Envelope B and the Business Reply Envelope

There is one version of the 2nd Call Instruction Sheet which is Labeled "Instructions For Responding To Materials In Envelope B".

There is one version of the Respondent Cover Letter. Every respondent will receive a copy of this letter.

There is one version of Envelope A. All respondents will receive Envelope A. Envelope A contains a self administered questionnaire

There are 20 versions of Envelope B. The envelopes have been bundled by block # from 1-20. Each bundle has 25 envelopes. Each respondent will receive one Envelope B. Envelope B contains 8 cards. The block # of Envelope B that the respondent receives will depend on the respondent Id #. Therefore, it is important that the envelopes stay in the bundle order provided. See chart below.

There are 500 large pre-numbered Business Reply envelopes. Each respondent must receive the corresponding envelope which matches the Id # on the front page of the screener, this is to ensure that we are able to identify the respondent when they return the materials back to us.

We have provided you with US Priority envelopes which will be used to mail all the specific materials (cover letter, Envelope A, Envelope B, and the Business Reply Envelope.

ID/ENVELOPE ASSIGNMENT

Screener /Respondent ID #	Envelope B Block #	Business Reply Envelope
001-025	1	001-025 (Specific #)
026-050	2	026-050 (Specific #)
051-075	3	051-075 (Specific #)
076-100	4	076-100 (Specific #)
101-125	5	101-125 (Specific #)
126-150	6	126-150 (Specific #)
151-175	7	151-175 (Specific #)
176-200	8	176-200 (Specific #
201-225	9	201-225 (Specific #)
226-250	10	226-250 (Specific #)
251-275	11	251-275 (Specific #)
276-300	12	276-300 (Specific #)
301-325	13	301-325 (Specific #)
326-350	14	326-350 (Specific #)
351-375	15	351-375 (Specific #)
376-400	16	376-400 (Specific #)
401-425	17	401-425 (Specific #)
426-450	18	426-450 (Specific #)
451-475	19	451-475 (Specific #)
476-500	20	476-500 (Specific #)

Example 1: If you are using a screener pre-numbered 020, you must send this respondent Envelope B Block 1 with Business Reply Envelope pre-numbered 020 along with all the other materials (cover letter and Envelope A).

Example 2: If you are using screener pre-numbered 422, you must send this respondent Envelope B Block 17 with Business Reply Envelope pre-numbered 422 along with all the other materials (cover letter and Envelope A).

BRIEFING

A personal briefing must be held before any interviewing begins. All personnel working on this study must attend. If more than one briefing is required, the same supervisor that was present at the first briefing must conduct all subsequent briefings. All interviewers working on this study are to do a practice interview.

Most questions which appear on the main questionnaire are clear and straightforward and need no further explanation. Interviewers must read and follow all instructions and skip patterns as indicated on the questionnaire. Interviewers must read and thoroughly understand all questionnaire interviewing procedures before working on this study.

At the briefing, stress the following points:

- Screening criteria/respondent eligibility
- Ask to speak to the person named on the list OR the person responsible for selecting the teeth the laboratory uses.
- **At the pre-recruit phase the interviewers must record for each respondent the number of attempts it took to obtain a completed interview. Note: This must be recorded on the front page of the screener in the space indicated.**
- **Record date of when the package is mailed.**
- **Schedule callback appointments 4-5 days after the package is mailed**
- **At the 2nd call phase the interviewer must record for each respondent the number of attempts it took to obtain a completed interview. Note: This information must be recorded on the top of page 2.**
- Record whether the respondent was Recruited and 2nd call completed or Recruit Only on the front page of the Screener.
- 2nd Call – The interviewer will not be taking down any information. They will only explain to the respondent how to complete the materials in Envelope B.
- Carefully following all instructions indicated on the questionnaire
- Completing all respondent information

PROGRESS REPORTS

Enclosed are Progress Report Sheets for your convenience. Accurate cumulative reports are to be received by us as indicated on the "Schedule" section. We are to RECEIVE them by 10:00 AM OUR TIME.

- **FAX #212-947-6294 (Preferred). Do not use a cover sheet, just fill in all the required information on the Progress Report Sheet. Be sure to write your city and contact name on each sheet of the report.**

If you prefer you can call in your report in the evening at 800-223-5306 and leave your report on our answering machine. Be sure to give your city and job number when doing so. In New York State, use 212-947-5140.

VALIDATION SHEETS

- List only ONE interviewer's work on a sheet.
- Fill out all required respondent information, interviewer name, city and quota group.
- Write listings in black ink only.
- **Do NOT xerox additional screeners without contacting GRC for instructions as to how to number these additional screeners.**
- Be careful about indicating correct area codes.
- Supervisors are NOT to conduct telephone validations. You must, however, monitor or do on-site validation for at least 10% of each interviewer's work and note validated work on Validation Form.

EDITING

Edit 100% of the work. Use blue pencil (not red), please. Editor's initials must appear on the top right corner of the Screener.

RETURNING WORK

Return work as per schedule.

- Bundle together all completed Recruits and 2nd Call Completed by interviewer with that interviewer's Validation Sheet(s) on top.
- Bundle together all "Recruits Only" which contain a record of terminations.
- Return all practice interviews.
- Enclose Master/Final Progress Report Forms.
- Return Sample.

SHIPMENT/CHARGES

- Use the blank airbills provided as they contain our account # and address
- All shipments are to be charged to our Federal Express Account #0100-0112-9 unless otherwise specified
- Do not insure
- Indicate Job #U08-018 on airbill for all shipments
- Important

  Since GRC does not want to incur additional shipping charges, make sure that all items specified above are included with your completed questionnaires, unless otherwise specified. If you "forget" we will have to deduct the additional shipping charges from your bill.

BILLING

Submit all bills under separate cover to the attention of our Accounting Department.

Thank you for your help with this survey.

Sincerely,

Nelly Valentin
Field Director

Guideline Research
3 West 35th Street
New York, NY 10001

Job #U09-018
Dental Laboratory Study
June, 1998

Interviewer's Instructions

Interviewer's Name:______________________________ Date:__________

Briefing Supervisor:______________________________

OVERVIEW/STUDY DESIGN

This is Phone Mail Phone WATS study. All recruiting and interviewing is to be conducted during local business hours using the sample provided.

All respondents will be recruited via phone then mailed a packet via US Priority mail, then called again on the phone approximately 4-5 days after the mailing. At the time of the second call the respondents will be instructed on how to complete the forms in Envelope B and to return the contents of Envelope A and Envelope B back to GRC.

ELIGIBILITY REQUIREMENTS

In order to qualify for this study, respondents must meet the following requirements:

- Laboratory must fabricate dentures using plastic artificial teeth (Q.A)
- Respondent must be responsible for selecting the plastic artificial teeth the laboratory uses (Q.B1)
- Respondent must be willing to participate (accept receipt of the packet) (Q.C)
- Respondent must have completed contents of Envelope A and Completed 2nd Call.

RECRUITING PHASE

SCREENER QUESTION BY QUESTION INSTRUCTIONS

Ask to speak to the person recorded on the sample OR the person responsible for selecting the teeth the laboratory will use.

When speaking to the receptionist read the introduction verbatim. If the receptionist indicates that the selected respondent is not available, leave your 800 number, asking him to call back at his earliest convenience, or you may interview another qualified person in the same office if the first respondent is not available. **You may not interview two respondents from the same office.**

If the receptionist indicates that this dental laboratory will not participate, terminate, circle the next available number in the termination box.

When speaking to the selected respondent read the introduction verbatim.

Q.A: If "yes" ask Q.B1. If "no" terminate. This location does not qualify for this study.

Q.B1: If "yes" continue. If "no" ask to speak to the person responsible for selecting the teeth the laboratory uses, if he is unavailable, leave the 800 number, asking him to call back at his earliest convenience, otherwise terminate.

Q.B2: Record the number of laboratory technicians employed at this facility.

Q.C: Read verbatim. Explain to the respondent that they will be receiving a packet via US Priority mail. The packet contains two envelopes. The envelope labeled "A" must be completed as soon as they receive it. They are to be instructed not to do anything with the envelope labeled "B" until they receive a call from you which will occur approximately 4-5 days after they have received the package. Inform the respondent that they will receive $20.00 if they complete the contents of Envelope A, receive a 2nd call and complete the contents of Envelope B, and return the contents of both A and B in the Business Reply Envelope provided.

If the respondents refuses, terminate, circle next available number in the termination box. If the respondents agrees schedule a callback appointment approximately 4-5 days from when the package is to be mailed. Record date and time of call in the space provided.

Record all respondent information on the front page of the screener.
Important: Record the total number of attempts needed to obtain this completed recruit in the space indicated on the front page of the screener.

MAILING PHASE

All packets are to be mailed out the same day the respondents are recruited.

You are to record the date of when the packet was mailed on the front page of the Screener.

You are to type up one label to adhere to the mailing envelope.

Each respondent will be receiving 4 items:

- Cover Letter
- Envelope A---Common To All Respondents
- Envelope B---Customize by Respondents ---Check with Supervisor
- Business Reply Envelope---Customize by Respondent---Check with Supervisor

2ND CALL PHASE

At the scheduled time each respondent will receive a 2nd call. The purpose of this second call is to verify receipt of the package and to provide the respondent with instructions on how to complete the contents of Envelope B.

There is no questionnaire to be administered by you in this phase of the study, the only instrument that you will be using is the "Instruction For Responding To Materials In Envelope B" sheet.
You are to read the sheet verbatim. Be sure you are familiar with the forms before you get on the telephone with the respondents.

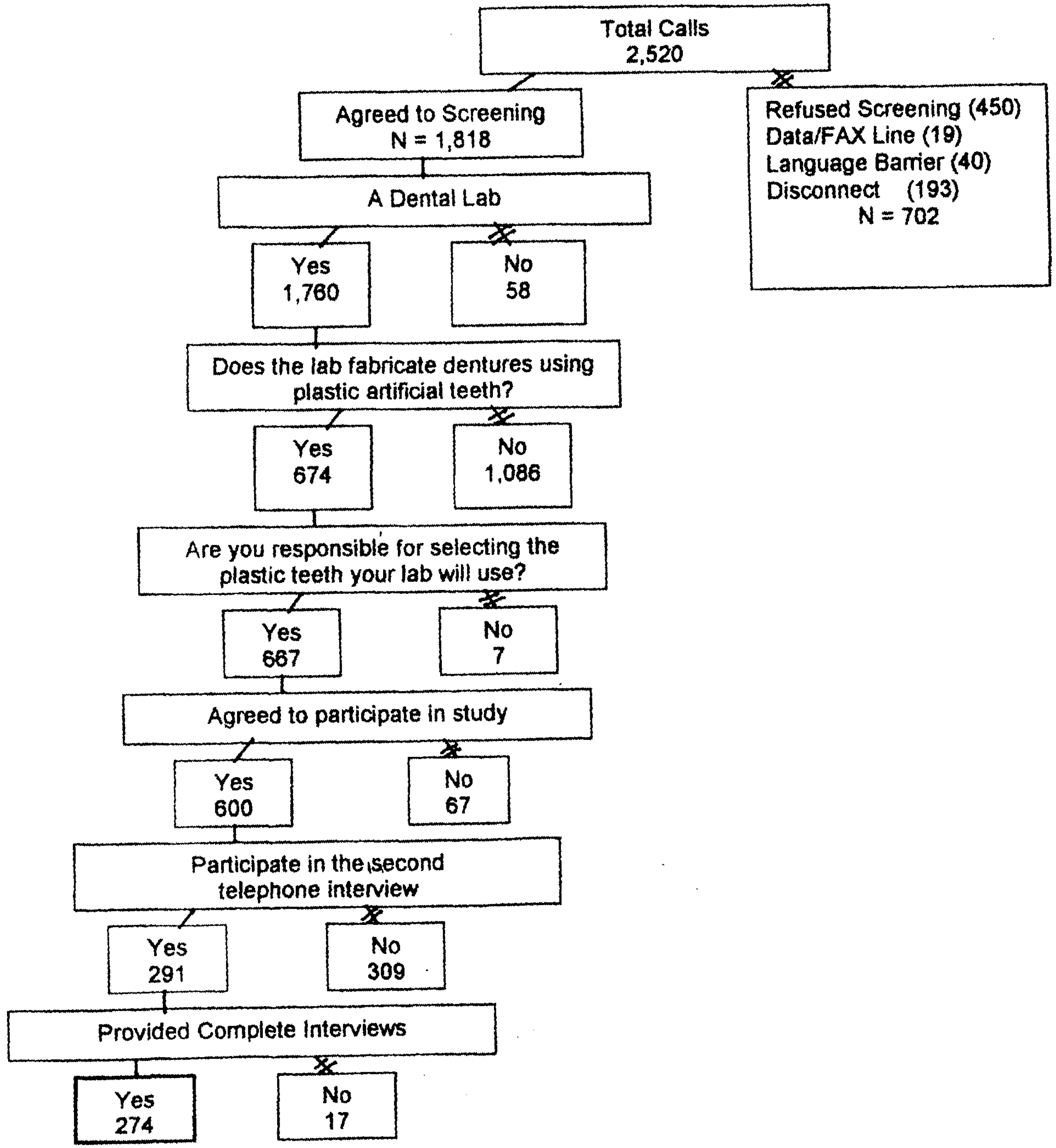
Note: On the second paragraph from the bottom of the instruction sheet it refers to "Read off to me...." You are not recording anything, you are simply making sure that the respondent has correctly allocated 100 points across all supplier on each page.

After the respondent understands the process of filling out the forms, instruct them to return both the contents of Envelope A and B, the respondent should be told not to include Envelope A and Envelope B but only their contents, that is the self administered questionnaire and the 8 cards, in the provided Business Reply Envelope.

Remind the respondent that they will receive their $ 20.00 check only after GRC receives their completed packet.

IMPORTANT:
Record the total number of attempts needed to obtain this completed 2nd call in the space indicated on the top of the 2nd page of the screener. Be sure to circle Recruited/2nd Call Completed on the front page of the screener.

Appendix G
The Screening Results



Appendix H

CURRICULUM VITAE

YORAM (JERRY) WIND

Jerry Wind is The Lauder Professor and Professor of Marketing at the Wharton School of the University of Pennsylvania. He is the founding director of the Wharton "think tank", The SEI Center for Advanced Studies in Management. The Center's mission is to assure through research and development the quality of management research and education and its relevance to the needs of management practice and society in the 21st century. Currently he leads Wharton's Information Management Initiatives (IMI) and the faculty committee that develops the Master in Electronic Business program. From 1983 to 1988, he was the founding director of the Joseph H. Lauder Institute of Management and International Studies, and from 1980 to 1983 the founding director of the Wharton Center for International Management Studies. Dr. Wind chaired the Wharton committees that designed the Wharton Executive MBA Program (1974), the new MBA curriculum (1991), and the School's globalization strategy (1995-1997). He also started the Wharton International Forum (1987) and served as the chairman of its faculty council until 1998. Dr. Wind joined the Wharton staff in 1967, upon receipt of his doctorate from Stanford University.

Dr. Wind is one of the most cited authors in marketing. He is a regular contributor to the professional marketing literature, which has included 15 books and over 200 papers, articles, and monographs encompassing the areas of marketing strategy, marketing research, new product and market development, consumer and industrial buying behavior, and international marketing. His most recent book, **Driving Change**, that focuses on how corporations can prepare themselves for the next millennium, has already received wide acclaim. He has lectured in faculty seminars and executive programs in over 50 universities worldwide.

Dr. Wind has served as editor-in-chief of the JOURNAL OF MARKETING, on the policy boards of the JOURNAL OF CONSUMER RESEARCH and MARKETING SCIENCE, and has been on the editorial boards of all major marketing journals. He recently served as guest editor of special issues of MARKETING SCIENCE (1996) on Empirical Generalization in Marketing (with Frank Bass), JMR (1997) on Innovation in New Product Development: Best Practice in Research, Modeling, and Applications, and MARKETING RESEARCH (1993) on The State of the Art in Quantitative Research.

Dr. Wind has served as a consultant to many Fortune 500 firms and a number of non-U.S. multinationals in the financial services, pharmaceuticals, information, and consumer packaged goods industries. His current clients include Bristol-Myers Squibb, SEI Investments, Edward Jones, Price Waterhouse Coopers and General Instrument. His consulting focuses on both overall global corporate and business strategy as well as marketing strategy and especially the development of new products and services. In addition, he has served as an expert witness in various legal cases.

Dr. Wind is a trustee of the Philadelphia Museum of Art, a co-founder of NETT – New Educational Technological Transformations, a member of the board of Enhance Financial Services Corporation, and CASA. He is a former director of Contel Corporation and a number of entrepreneurial ventures.

Dr. Wind is an active member of the major marketing and management science professional associations, a former academic trustee of the Marketing Science Institute, and a member of a number of its steering committees (currently he chairs the MSI task force on e-commerce valuation). He is also a former chairman of the College of Marketing of the Institute of Management Science and a previous member of the Board of Directors of the Philadelphia AMA Chapter. He is one of the founders of the new Israeli university – The Interdisciplinary Center for the Study of Business, Law and Technology and chairman of its international advisory board and academic council. He is also a member of the board of a number of Wharton's research centers and the Lauder Institute.

Dr. Wind is the recipient of various awards, including the prestigious Charles Coolidge Parlin Award (1985), the AMA/Irwin Distinguished Educator Award (1993), the Paul D. Converse Award (1996), and the first Faculty Impact Award by Wharton Alumni (1993). He was elected as the 1984 member of the Attitude Research Hall of Fame and has won a number of research awards, including two Alpha Kappa Psi Foundation awards.

October 26, 1999

ACADEMIC EXPERIENCE

EDUCATION

Stanford University, Graduate School of Business. Ph.D. (Marketing), 9/64-12/66.

Stanford University, International Center for Advancement of Management Education, Certificate in Marketing Management. 9/63-6/64.

The Hebrew University, Jerusalem, School of Economics and Social Sciences, M.A. (Business Administration and Political Science), 9/60-6/63; B. Soc. Sci. (Economics and Political Science), 9/58-6/61.

UNIVERSITY POSITIONS

A. University of Pennsylvania, The Wharton School

Faculty Positions:
The Lauder Professor, 1983-
Professor of Marketing, 1973-
Associate Professor of Marketing, 1970-73
Assistant Professor of Marketing and International Business, 1967-70

Selected Administrative Positions:
Founding Director, The SEI Center for Advanced Studies in Management, 1988-
Founding Director, The Joseph H. Lauder Institute of Management and International Studies, 1983-88
Founding Director, the 1st Title VI National Resource Center in International Management Studies, 1985-88
Founding Director, The Wharton Center for International Management Studies, 1980-1983

Secondary Faculty Appointments:
Member of the Graduate Group in International Studies (School of Arts & Sciences), 1984-1998
Member of the OR Group, 1979-84 and the OR affiliated faculty, 1984-89
Senior Fellow of the Leonard Davis Institute, 1977-1980
Secondary Appointment as Professor of Management, 1981-1984
Member of the Extended Faculty of the Social Systems Sciences Dept. 1981-1986

B. Other Universities

Erasmus University (The Netherlands) The first visiting Unilever-Erasmus Professorship, Spring 1993

University of Tokyo (Japan) The first Hakuhodo Visiting Professorship, Spring 1992 and 1993

University of New South Wales (Australia) The first visiting Hoover Foundation Professor, 6/77

University of California at Berkeley, School of Business Administration Visiting Professor, Fall 1975

University of Tel Aviv, The Leon Recanati Graduate School of Business Administration, Visiting Senior Lecturer, 9/68-8/69

Stanford University, Graduate School of Business, Research Assistant, 6/65-10/66

The Hebrew University Jerusalem, Teaching Assistant in the Departments of Political Science and Business Administration, 9/61-6/63

PUBLICATIONS

I. BOOKS

Leveraging Japan: Marketing to the New Asia, with George Fields and Hotako Katahira (San Francisco: Josse Bass), forthcoming 1999.

**Driving Change*, with Jeremy Main (New York: The Free Press), 1997.

The Silverlake Project, with Roy A. Bauer, Emilio Collar, Victor Tang and Patrick R. Houston. (New York: Oxford University Press), January, 1992.

**Product Policy: Concepts, Methods and Strategies* (Reading, MA: Addison-Wesley), 1982. Reviewed JM Summer 1981.

**Marketing and Product Planning* (in Spanish) (Mexico: Expansion). This book is based in part on sections from *Product Policy* which was selected by the editors of Expansion as the "Book of the Year" 1979.

Multi-Attribute Decisions in Marketing: A Measurement Approach, with Paul E. Green (and contributions by Douglas Carroll). (Hinsdale, IL: The Dryden Press), 1973.

Organizational Buying Behavior, with Frederick E. Webster, Jr. (Englewood Cliffs, NJ: Prentice Hall, Foundations of Marketing Series), 1972. Translated to Portuguese (Editor, Atlas, Sao Paulo, Brazil, 1975). Reviewed JMR August, 1974.

Market Segmentation, with Ronald E. Frank and William F. Massy (Englewood Cliffs, NJ: Prentice Hall, International Series in Management), 1972. Reviewed JMR, November, 1972; August, 1974.

Advertising Measurement and Decision Making, with Homer Dalby and Irwin Gross (Boston, MA: Allyn & Bacon), 1968.

Industrial Buying and Creative Marketing. Publication of the Marketing Science Institute (Boston, MA: Allyn & Bacon), 1967. Contributed two chapters; co-authored with Patrick J. Robinson three chapters; and participated in the overall organization and preparation of the book.

**Industrial Buying Behavior: Source Loyalty in the Purchase of Industrial Components*. Unpublished Ph.D. dissertation, Stanford University, December, 1966.

II. EDITED BOOKS

Digital Marketing, with Vijay Mahajan, forthcoming, 2000.

New Product Diffusion Models, with Vijay Mahajan and Eitan Muller, The IC^2 Institute's Econometric & Management Sciences Series (Kluwer Academic Publishers), forthcoming 1999.

Innovation Diffusion Models of New Product Acceptance, with Vijay Mahajan, The IC^2 Institute's Econometric & Management Sciences Series (Cambridge, MA: Ballinger Publishing Co.), 1986.

**New Product Forecasting: Models and Applications*, with Vijay Mahajan and Richard Cardozo. (Lexington, MA: Lexington Books), 1981.

**Advances in Organizational Buying Research: The Case of Acquisition of Scientific and Technical Information*, with Robert J. Thomas (Washington, D.C.: National Science Foundation), 1979.

**Moving A Head with Attitude Research: Proceedings of the Seventh Attitude Research Conference*. Edited with Marshall Greenberg. (Chicago, IL: American Marketing Association), 1977. Designed, organized, and edited this book of eight invited position papers and eighteen application papers.

* = Senior author

Behavioral Models of Market Analysis: Foundations for Marketing Action, edited with Francesco Nicosia (Hinsdale, IL: The Dryden Press), 1977. Co-planned, edited, and organized the volume of original papers.

III. ARTICLES, CONTRIBUTED CHAPTERS, PAPERS IN PROCEEDINGS, AND WORKING PAPERS

The papers in this section are classified into ten areas:

A. Portfolio analysis and strategy
B. Integration of marketing perspective in corporate strategy
C. Marketing and product strategy
D. Research on industrial buying behavior
E. Research on consumer behavior
F. Marketing research and modeling
G. International marketing
H. Publications related to international management education and the Lauder Institute
I. Publications related to management practice and education in the 21st Century
J. Entries in Dictionaries and Encyclopedias

A number of papers can fit in more than one category. The division is, therefore, quite arbitrary and based primarily on the target audience of the paper.

A. Portfolio Analysis and Strategy

1.* "Product Portfolio: A New Approach to the Product Mix Decision", in Ronald C. Churhan, ed., *Combined Proceedings AMA*, August, 1974, pp. 60-464.

2.|* "Planning Product Line Strategy: A Matrix Approach", with Henry Claycamp, *Journal of Marketing*, 40. January 1976, pp. 2-9.

3a.|* "An Analytic Hierarchy Process for the Allocation of Resources Within a Target Product/Market/Distribution Portfolio", with Daniel Gross, in D.B. Montgomery and D.R. Wittink, eds., *Proceedings of the ORSA/TIMS Conference on Marketing Measurement and Analysis*, Stanford, CA, March, 1979. Sections of this paper were later incorporated in a paper by Wind and Saaty, "Marketing Applications of the Analytic Hierarchy Process", Management Science 26, July 1980, pp. 641-658.

3b.|* "Marketing Applications of the Analytic Hierarchy Process", with Thomas L. Saaty, *Management Science*, 26. July 1980, pp. 641-658.

4.|* "Designing Product and Business Portfolios", with Vijay Mahajan, *Harvard Business Review*, Vol. 59, No. 1, Jan-Feb, 1981, pp. 155-165. Based on a paper, "Measurement Issues in Portfolio Analysis", presented at the Second Market Measurement and Analysis Conference, University of Texas, Austin; March 1980.

5. "Stochastic Dominance Rules for Product Portfolio Analysis", with Vijay Mahajan and John W. Bradford. *Marketing Planning Models*, Special Issue of TIMS Studies in the Management Sciences, 1981. pp. 161-183.

6.|* "International Portfolio Analysis and Strategy: The Challenge of the 80's", with Susan P. Douglas, *Journal of International Business Studies*, Fall, 1981. pp. 69-82.

7.| "A Model for the Analysis of Asymmetric Data in Marketing Research", with Richard Harshman and Paul E. Green, *Marketing Science*, Vol. 1, No. 2, Spring, 1982.pp. 205-242.

8.|* "Empirical Comparison of Standardized Portfolio Models", with Vijay Mahajan and Donald Swire, *Journal of Marketing*, Vol. 47, Spring, 1983. pp. 89-99. This article is based on a paper presented

| = Article published in refereed journal
* = Senior author

at the 1981 conference on Analytical Approaches to Product and Marketing Planning.

9.| "A Risk Return Approach to Product Portfolio Strategy", with Richard Cardozo, *Long Range Planning*, Vol. 18, No. 2, 1985. pp. 77-85.

10. "Integrating Financial Portfolio Analysis with product Portfolio Models", with Vijay Mahajan, in H. Thomas & D. Gardner, (eds.) *Strategic Marketing and Management.* (NY: J. Wiley & Sons, 1985), pp. 193-212.

11.| "Corporate Growth Through Synergy: Concept, Measurement and Applications", with Vijay Mahajan, Wharton School Working Paper, 1985.

12.| "Business Synergy Does Not Always Pay Off", with Vijay Mahajan, *Long Range Planning*, Vol. 21, No. 1, February 1988, pp. 59-65.

B. Marketing Strategy and Integration of Marketing Perspective in Corporate Strategy

1.* "A Research Program for a Marketing Guided Approach to Mergers and Acquisitions", in N. Beckwith et al., *1979 Educator's Conference Proceedings* (Chicago, IL: AMA), 1979, pp. 207-256.

2.* "Marketing Oriented Strategic Planning Models", in R.L. Schultz and A. A. Zoltners, eds., *Marketing Decision Models*, (New York: Elsevier, North Holland), 1980, pp. 207-250.

3.* "Marketing and the Other Business Functions", in J. Sheth, ed., *Research in Marketing*, Vol. 5, 1980, pp. 237-264.

4.|* "Marketing and Corporate Strategy", in *The Wharton Magazine*, Summer 1982, pp. 38-45. Based on "Marketing and Corporate Strategy: Problems and Perspectives", The 13th Annual Albert Wesley Frey Lecture, Graduate School of Business, University of Pittsburgh, 1981.

5. "Marketing Strategy," with Thomas Robertson in Kenneth J. Albert, (ed.), *The Strategic Management Handbook*, (New York: McGraw Hill, 1982), Chapter 11, pp. 11-3C11-22

6.| "Marketing Strategy: New Directions for Theory & Research," with Thomas Robertson, *Journal of Marketing,* Spring, 1983. pp. 12-25.

7. "Analytic Hierarchy Process for Generation & Evaluation of Marketing Mix Strategies", with E. Dunn, in *Contemporary Views on Marketing Practice*, Gary Frazier and Jagdish Sheth (eds.), proceeding of the Stellner Symposium on Theories of Marketing Practice, Lexington Books, 1987, pp. 111-131.

8.* "Marketing for Top Executives: Problems and Prospects", Wharton School Working Paper, 1985.

9.* "Models for Marketing Planning and Decision Making", in Victor P. Buell, ed., *Handbook of Modern Marketing* 2nd Edition, 1985. Chapter 49, pp.

10.* "Expanding the Role of the Board of Directors", Wharton School Working Paper, 1986.

11.* "A Marketing Perspective for Competitive Strategy", in Harold E. Glass (ed.), *Handbook of Business Strategy, 1988/1989 Yearbook* (Boston: Warren, Gorham and LaMont), 1988, pp. 285-291. Based on a paper presented at an international conference on Competitive Analysis at the University of Groningen, October 1986.

12.|* "An AHP-Based Approach to the Design and Evaluation of a Marketing-Driven Business and Corporate Strategy", *Mathematical Modeling*, Vol. 9, No. 3-5, pp. 285-291, 1987.

| = Article published in refereed journal
* = Senior author

13.* "Effective Competitive Strategies: A Marketing Perspective", *Achieving Excellence in Managing*, transcript of the SIA Regional Conference, March 25-26, 1986, pp. 62-80.

14.|* "Financial Services: Increasing Your Marketing Productivity and Profitability", *The Journal of Services Marketing*, Vol. 1, No. 2, Fall 1987, pp. 5-18.

15.* "Targeting Global Markets: Guidelines to Meet the Marketing Challenge", *Directions,* 1989, publication of Contel Corp.

16.* "Inducing Creativity and Innovation in Large Bureaucracies: Lessons from Marketing", in *Proceedings of the RGK Foundation, 4th International Conference on Creative and Innovative Management*, 1993.

17.* "Growth Strategies," Wharton School Working Paper, 1996.

18.* "Preemptive Strategies," in G. Day and D. Reibstein (eds.), *Wharton on Dynamic Competitive Strategy*, New York: John Wiley & Sons, Inc., 1997.

19.* "Segmentation: Accomplishments, Issues and Challenges of the Global Information Age," in J. Hess and K. Monroe (eds.), *Proceedings of the 14th Paul D. Converse Award Symposium*, AMA, 1998.

20.* "Marketing Strategy in the Global Information Age," *The Financial Times*, pp. 131-150, *Mastering Marketing* Series, 1998.

21.* "Customerization: The Second Revolution in Mass Customization," with Arvind Rangaswamy, Wharton School Working Paper, 1999.

22. "Digital Marketing," with Vijay Mahajan, in Wind and Mahajan, eds., *Digital Marketing,* The IC^2 Institute's Econometric & Management Sciences Series (Kluwer Academic Publishers), forthcoming, 1999.

C. Marketing and Product Strategy

1.| "Innovation in Marketing: Organizational Behavior Perspective", with Kenneth E. Knight, *California Management Review*, 11. Fall 1968, pp. 67-78.

2.|* "Management and Change", with Bent Stidsen and Kenneth E. Knight, *Manpower and Applied Psychology*, 2. Winter 1968, pp. 38-46.

3. "The Marketing Concept Revisited", with Thomas Schutte, Wharton School Working Paper, January 1968.

4.|* "Innovation As Marketing Orientation", *Business Economics* (Hebrew), 36. December, 1969, pp. 5-11.

5.|* "A Marketing Approach to the Salesman Function", *Organization and Administration* (Hebrew), 15. September 1969, pp. 26-33.

6.|* "The Stepchildren of Marketing: Organizational and International Customers", *The Wharton Quarterly*, 7. Fall 1972, pp. 43-46.

7.* "A Note on the Operationalization of the Product Life Cycle Concept", Wharton School Working Paper, July 1974.

8. "Consumer Attitudes as Guidelines for the Evaluation of a New Distribution System", with Frank J. Cacchione, Jr., and Daniel Gross in Y. Wind and M. Greenberg, (eds.) *Moving A Head With Attitude Research.* (Chicago, IL: AMA), 1977, pp. 139-143.

| = Article published in refereed journal
* = Senior author

9.* "On the Use of Attitude Research in Product Policy", with Tyzoon Tyebjee, in Y. Wind and M. Greenberg, (eds.), *Moving A Head With Attitude Research*. (Chicago, IL: AMA), 1977, pp. 147-156.

10.* "The Perception of the Firm's Competitive Position", in F. Nicosia and Y. Wind, (eds.), *Behavioral Models of Market Analysis: Foundations for Marketing Action*. (Hinsdale, IL: The Dryden Press, 1977). pp. 163-181.

11.|* "Toward a Change in the Focus of Marketing Analysis: From a Single Brand to an Assortment of Brands", *Journal of Marketing*, October 1977, pp. 12-13.

12.* "On the Multi-Dimensionality of Market Share", with Peter T. FitzRoy, Wharton School Working Paper, April 1979.

13.* "Product-Marketing Planning Models: Concepts, Techniques, and Needed Development", in Allan D. Shocker, (ed.), *Analytic Approaches to Product and Marketing Planning* (Cambridge, MA: MSI), 1979. pp. 39-66.

14.|* "Going to Market: New Twists for Some Old Tricks", *The Wharton Magazine*, 4. Spring, 1980, pp. 34-39. Based on "Product Positioning and Market Segmentation Marketing and Corporate Perspectives", Wharton School Working Paper, 1979.

15.|* "Market Share: Concepts, Findings, and Directions for Future Research", with Vijay Mahajan, *Review of Marketing*, and K. Roering, (eds.), Chicago: AMA, 1981, pp. 31-42.

16.|* "Product Innovation Management: The Required Breakthrough", *Journal of Product Innovation Management*, vol. 1, 1984.

17.* "The Contribution of Research to Product Management and New Product Development", *ESOMAR Congress Proceedings*, August 1983, pp. 1-15.

18.* "The Marketing Challenge", address given upon receipt of the Charles Coolidge Parlin Award, 1985. Wharton School Working Paper. Excerpts appeared in *The Marketing News* August 1985.

19.|* "Marketing Hype: A New Perspective for New Product Research and Introduction", with Vijay Mahajan, *The Journal of Product Innovation Management*, Vol. 4, No. 1, pp. 43-49, March 1987.

20.|* "New Product Development Process: A Perspective for Reexamination", with Vijay Mahajan, *The Journal of Product Innovation Management*, Dec. 1988, No. 5: pp. 304-310. Reprinted in *IEEE Engineering Management Review*, 1990.

21.* "Positioning Analysis and Strategy", in G. Day, B. Weitz and R. Wensley (eds.), *The Interface of Marketing and Strategy*, JAI Press 1990.

22.* "Salespeople as Marketing Strategists", with Douglas Hill, Wharton School Working Paper, June 1988.

23.* "Innovative Distribution: The Neglected Dimension in Business Strategy", Wharton School Working Paper, August 1988.

24.|* "Getting a Read on Market-Defined Value", Journal of Pricing Management, Vol. 1, No. 1, Winter 1990, pp. 5-14.

25.* "A New Approach to the Determination and Allocation of the R&D Budget", Wharton School Working Paper, 1990.

26.* "A New Approach for Screening New Products and Service Concepts: Application to Financial Services," with Hoonyoung Lee and Raymond Burke, August 1992.

| = Article published in refereed journal
* = Senior author

27.* "New Product Models: Practice, Shortcomings and Desired Improvements" with Vijay Mahajan, March 1991.

28. "New Product Success in the Japanese Consumer Goods Market" with Hotaka Katahira and Makoto Mizuno, Wharton School Working paper, 1993.

29.|* "Introduction to the special issue: Empirical generalizations in marketing," with Frank Bass and Yoram Wind in *Marketing Science* special issue on *Empirical Generalizations in Marketing*, Volume 14, Number 3, Part 2, 1995.

30.|* "Issues and Opportunities in New Product Development: An Introduction to the Special Issue," *JMR* special issue on *Innovation in New Product Development: "Best Practice" in Research, Modeling and Applications*, with Vijay Mahajan, February, 1997, pp. 1-12.

31.* *Innovation as Determinant of Firms Financial Performance: The View of the Financial Analyst*, with Ed Nifssen and Bernend Wierenga (manuscript under review).

32. "Got Affect? Moving Positioning Beyond Features and Benefits" with Vijay Mahajan, Wharton School working paper July 1999.

D. Research on Industrial Buying Behavior

1.|* "The Determinants of Vendor Selection: An Evaluation Function Approach", with Paul E. Green and Patrick J. Robinson. *Journal of Purchasing*, 4. August 1968, pp. 29-41.

2.|* "Applying the Behavioral Theory of the Firm to Industrial Buying Decisions", *The Economic and Business Bulletin*, 20. Spring 1968, pp. 22-28.

3.* "Integrating Attitude Measures in a Study of Industrial Buying Behavior", in Lee Adler and Irving Crespi, (eds.), *Attitude Research on the Rocks.* (Chicago, IL: American Marketing Association, 1968), pp. 58-77.

4.* "Mathematical Analysis of Perception and Preferences for Industrial Marketing", in K. Cox and B.M. Enis, (eds.), *A New Measure of Responsibility for Marketing.* Proceedings of the International Marketing Conference of the American Marketing Association, June 1968, pp. 284-294.

5. "Generalized Simulation of the Industrial Buying Process", with Patrick J. Robinson, Marketing Science Institute Working Paper P-46-2, June 1968.

6.* "Simulating the Industrial Buying Process", with Patrick J. Robinson, in R.L. King, (ed.), *Marketing and the New Science of Planning.* Proceedings of the American Marketing Association, August 1968 Conference, pp. 441-448.

7.|* "Computer Simulation: Marketing Management Tool", with Patrick J. Robinson, *Computer Operations*, 3. January-February 1969, pp. 42-47.

8.|* "Industrial Source Loyalty," *Journal of Marketing Research*, 7. November 1970, pp. 450-457.

9.* "A Reward Balance Model of Buying Behavior in Organizations", in George Fisk, (ed.), *New Essays in Marketing Theory.* (Boston, MA: Allyn & Bacon, 1971), pp. 206-217.

10.* "Industrial Marketing Research", with Richard Cardozo. Paper presented at the AMA Workshop on Industrial Buying Behavior, Berkeley, California, April 1971.

11.| "A General Model for Understanding Organizational Buying Behavior", with Frederick E. Webster, *Journal of Marketing*, 36. April 1972, pp. 12-19.

| = Article published in refereed journal
* = Senior author

12.|* "On the Study of Industrial Buying Behavior: Current Practices and Future Trends", with Frederick E. Webster, *Industrial Marketing Management*, 1. July 1972, pp. 411-416.

13.|* "Industrial Buying as Organizational Behavior: A Guideline for Research Strategy", with Frederick E. Webster, *Journal of Purchasing*, 8. August 1972, pp. 5-16.

14.* "Segmenting Media Buyers", with Steve Silver, *Journal of Advertising Research*, 8. December 1973, pp. 33-38.

15.* "The Industrial Customer", with Elmer Lotshaw, in Stuart H. Britt, (ed.), *Marketing Handbook*. (The Dartnell Corp., 1973), pp. 781-792.

16.* "Recent Approaches to the Study of Organizational Buying Behavior", in T.V. Greer, (ed.), *Increasing Marketing Productivity*. Proceedings of the American Marketing Association April 1973 Conference, pp. 203-206.

17.|* "Industrial Marketing Segmentation", with Richard N. Cardozo, *Industrial Marketing Management*, 3. March 1974, pp. 153-165. (Also appeared in the French *Encyclopedie de Marketing*, 1978).

18. "Marketing Research in the Design of STI Systems: Case Study", with John F. Grashof, in R. Mason and J. Kreps, Jr., (eds.), *Information Services: Economics, Management, and Technology* (Boulder, CO: Westview Press), 1981, pp. 73-84.

19.|* "Emerging Models of Organizational Buying Processes", with Francesco M. Nicosia, *Industrial Marketing Management*, 6. 1977, pp. 353-369. Also in Nicosia and Wind, (eds.), *Behavioral Models of Market Analysis: Foundations for Marketing Action* (Hinsdale, IL: The Dryden Press), 1977, pp. 96-120.

20.* "Information Requirements on Buying and Usage of STI Services", in *Current Research on Scientific and Technical Information Transfer*. (New York: J. Norton Publishers, 1977), A Micropapers Edition.

21.|* "Market Based Guidelines for Design of Industrial Products", with John F. Grashof and Joel D. Goldhar, *Journal of Marketing*, 24. July 1978, pp. 27-37.

22.|* "The Boundaries of Buying Decision Centers", *Journal of Purchasing and Materials Management, 14. Summer 1978, pp. 23-29.*

23.* "Organizational Buying Center: A Research Agenda", in Thomas V. Bonoma and Gerald Zaltman, (eds.), *Organizational Buying Behavior*. (Chicago, IL: American Marketing Association, 1978), pp. 67-76.

24.|* "Organizational Buying Behavior", *Annual Review of Marketing* 1. 1978, pp. 160-193.

25.* "Problems and Prospects in the Segmentation of the STI Market", with Robert Thomas in William R. King and Gerald Zaltman, (eds.), *Marketing Scientific and Technical Information*. (Boulder CO: Westview Press, 1979), pp. 67-76.

26.* "Industrial Market Segmentation Under Conditions of Intra-Organizational Heterogeneity", in Yoram Wind and Robert Thomas, (eds.), *Advances in Organizational Buying Behavior*. (Washington, D.C.: NSF, 1979).

27.| "Organizational Psychographics and Innovativeness", with Thomas S. Robertson, *Journal of Consumer Research*, June 1980, pp. 24-31.

28.|* "Conceptual and Methodological Issues in Organizational Buying Behavior", with Robert J. Thomas, *European Journal of Marketing*, Vol. 14. 1980, pp. 239-263.

| = Article published in refereed journal
* = Senior author

29.|* "The Linking Pin Role of Organizational Buying Centers", with Thomas S. Robertson. Special Issue of *Journal of Business Research*, Vol. 10, No. 2, 1981, pp. 169-184.

30.| "Organizational Cosmopoliteness and Innovativeness", with Thomas S. Robertson, *Academy of Management Journal*, 26. June 1983, pp. 332-338.

31. "Toward Empirical Generalizations on Industrial Market Segmentation", with Robert J. Thomas in R. Spekman and D. Wilson, (eds.), *Issues in Industrial Marketing: A View to the Future* (Chicago: AMA), 1982, pp. 1-19.

32.| "Decision Analysis of High Risk Patient Referral", with Douglas Richardson and Steven G. Gabbe, *Obstetrics and Gynecology*, vol. 63, number 4. April 1984, pp. 496-501.

33. "The Changing Industrial Market: Implications for Research", in *A Strategic Approach to Business Marketing*, Robert Spekman and David Wilson (eds.), Chicago: American Marketing Association, 1985, pp.67-78.

34.* "Segmenting Industrial Markets", with Robert J. Thomas, in Arch Woodside (ed.), *Advances in Business Marketing and Purchasing*. Jay Press Inc. 1994, pp. 59-82.

35.* "Strategy-Driven Industrial Marketing Research", with Robert J. Thomas, *Annual Review of Marketing*, V. Zeithaml (ed.), Chicago: AMA, 1991, pp. 411-454.

36.* "The Buygrid Model: 30 Years Later," with Robert Thomas, Wharton School Working Paper, 1998.

E. Research on Consumer Behavior

1.| "Inter-Product Household Loyalty to Brands", with Ronald E. Frank, *Journal of Marketing Research*, 6. November 1969, pp. 434-435.

2.* "Incongruency of Socioeconomic Variables and Buying Behavior", in P.R. McDonald, (ed.), *Marketing Involvement in Society and the Economy*. Proceedings of the American Marketing Association, August 1969 Conference, pp. 362-367.

3.|* "Models of Customer Behavior", *Organization and Administration* (Hebrew), 16. May 1970, pp. 3-13.

4.* "The Application of Multidimensional Scaling in Segmentation Research." Paper presented at the First Annual Meeting of the Association for Consumer Research, Amherst, MA, August 1970.

5. "Prediction Experiments Utilizing Perceptual and Preference Judgment", with Paul E. Green. Paper presented at the Second Annual Meeting of the American Institute for Decision Sciences, Dallas, TX, November 1970.

6.* "Life Style Analysis: A New Approach", in Fred C. Allvin, (ed.), *Marketing in Motion*. Proceedings of the 54th International Marketing Congress of the American Marketing Association, April 1971, pp. 303-305.

7. "Intentions to Buy as Predictors of Buying Behavior", with Susan P. Douglas, in D. Gardner, (ed.), *Proceedings of the Second Annual Conference of the Association for Consumer Research*, Maryland, 1971, pp. 331-343.

8.| "Benefit Bundle Analysis", with Paul E. Green and Arun K. Jain, *Journal of Advertising Research*, 11. April 1972, pp. 31-36.

9.| "Subjective Evaluation Models and Conjoint Measurement", with Paul E. Green and Frank Carmone, *Behavioral Science*, 18. May 1972, pp. 288-299.

| = Article published in refereed journal
* = Senior author

10.| "A Note on the Measurement of Social-Psychological Belief Systems", with Paul E. Green and Arun K. Jain, *Journal of Marketing Research*, 9. May 1972, pp. 204-208.

11. "Experiments in the Multidimensional Psychophysics of Taste and Semantic Description ", with Paul E. Green. The paper was awarded first prize in the 1972 Research Design Competition of the American Psychological Association, Division 23, July 1972.

12. "Consumer Menu Preference: An Application of Additive Conjoint Measurement", with Paul E. Green and Arun K. Jain, in M. Venkatesan, (ed.), *Proceedings of Third Annual Conference of the Association for Consumer Research,* Chicago, IL, 1972, pp. 304-315.

13.| "Preference Measurement of Item Collections", with Paul E. Green and Arun K. Jain, *Journal of Marketing Research*, 9. November 1972, pp. 371-377.

14.* "On the Teaching of Consumer Behavior: A Managerial Approach." Paper presented at the AMA August 1972 Conference Houston, TX.

15.| "Analyzing Free Response Data in Marketing Research", with Paul E. Green and Arun K. Jain, *Journal of Marketing Research*, 10. February 1973, pp. 45-52.

16. "Consumer Evaluation of Discount Cards: A Conceptual Model and Experimental Test", with Paul E. Green and Frank Carmone, *Journal of Retailing,* 49. Spring 1973,pp. 10-22.

17. "Benefit Congruence Analysis", with Paul E. Green and Arun K. Jain. Paper presented at the 1974 Southeast AIDS Conference.

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VIII. CASE STUDIES

- During the academic year 1962-63, I wrote a number of marketing cases at the Hebrew University, Jerusalem (Israel). One of these cases, The Ozi Ballpoint Pen III, was published in Harper W. Boyd, Jr. et al., (eds.), *Marketing Management: Cases from the Emerging Countries* (Reading, MA: Addison-Wesley Publishing Company), 1966.
- During the academic year 1968-69, several marketing cases were written under my supervision at the Leon Recanati Graduate School of Business Administration, Tel Aviv University.

CONSULTING EXPERIENCE

A. Marketing, Business Strategy, and Marketing Research Consulting

1. Current Regular Clients

- Bristol-Myers Squibb: Since 1997. Marketing Strategy consulting.
- Edward Jones & Co.: Since 1984. Marketing and Business Strategy consulting.
- General Instrument: Since 1998. Business Strategy consulting.
- Li & Fung: Since 1998. Business Strategy consulting.
- PriceWaterhouse Coopers LLP: Since 1996. Marketing and Corporate Strategy consulting.
- SEI Investments: Since 1986. Marketing, Business and Corporate Strategy consulting.
- Standard & Poors: Since 1997. Marketing Strategy consulting.

2. Illustrative Consulting Activities With Other Clients

A. Information Industry

- AT & T & the Bell companies: Occasional consultant to various units, including:
  - AT&T Technologies Inc. – Design a market segmentation program (1986)\
  - AT&T – Review and Design of Portfolio System (1981-82)
  - Bell Atlantic – Marketing & pricing strategy (1983)
  - Bell Canada – Design of a segmentation study and product portfolio (1979-80)
- Geometric Data: Segmentation/positioning studies (1981-82)
- IBM:
  - ABS Division: Developing a procedure for Integrating Marketing and R&D 1988-89
  - ES Division, Marketing Strategy and Segmentation (1991-93)
- Newsweek, Inc.: Marketing consulting (1979-80)
- Northern Telecom: Value Pricing and Business Strategy Consulting (1993-95)
- RCA, Government Communications Systems: Design of a research program to assess the market response to new Electronic Mail System (1978-79)
- Xerox: Marketing consulting to a design integration program (coordinated by Jay Doblin Associates) and design of a market segmentation project (1982-83)

B. Financial Services

- Chase Manhattan Bank:: Process for evaluation of mergers and acquisitions and design of segmentation studies (1978-79)
- CitiBank: Statistical consulting (1980); marketing strategy consulting 1996-7
- Colonial Penn Group: Design and evaluation of most of the firm's research activities and general consulting to marketing and top management (1973-80)
- E. F. Hutton: Design and implementation of a marketing planning system and various marketing research projects (1979-1984)
- Reliance Insurance Companies: Marketing research consulting (1980-81)

C. Health Care

- Merck, Sharp, and Dome: General marketing research consulting (1981)
- Merck & Co.: Marketing Strategy and Marketing Research and Modeling (1991-96)
- Pfizer, Inc.: 1975-90. Design and analysis of most of the marketing research projects of Pfizer Laboratories and Roerig. Occasional marketing strategy consultant to the Hospital Products Group (1984-1986) and Pfizer Pharmaceuticals (1987-1990).
- SmithKline Beckman: Marketing strategy development for TAGAMET (1987-8); evaluation of strategy implementation (1989)
- SmithKline Clinical Laboratories: Marketing planning (1984)
- Sterling Drug, Inc.: Development of marketing driven portfolio of R&D projects (1986-91); Pricing study for innovative new product (1991-92)
- Upjohn: Strategic planning consulting (1981)
- West Jersey Health System: Marketing and Business Strategy (1985)

D. Transportation

- Air Canada: Market segmentation, positioning and new product development (1973)
- Chrysler: Modeling the advertising budget (1978), advising regarding the analysis of customer satisfaction process (1995-97)
- Conrail: Design of a positioning/segmentation study (1978-79)

E. Consumer Goods

- Eastman Kodak: New product research approaches (1978)
- R.J. Reynolds Tobacco Co.: Evaluation and design of a new product development system (1979-80)
- S.B. Thomas: Marketing and research consultant (1979-80)
- Simplicity Patterns, Inc.: Develop a business plan (1982)

F. Industrial Products and Services

- Exxon Chemicals: Marketing and Business Strategy (1985-86)
- International Harvester: Designing a market segmentation process (1980)
- John Fluke Manufacturing Co., Inc.): Marketing and corporate strategy (1985-1988)
- Stauffer Chemicals: General marketing consulting (1980)

G. Retailing

- Sears Roebuck & Company: Advertising and marketing strategy (1972-73)
- Wickes, plc: U.K. Marketing and Business Strategy Consulting (1988-96).

H. Professional Service Firms

- Applied Communication Research (1974-76)
- BBD&O (on an occasional basis, 1974-85)

- Cunningham and Walsh, Inc. (1978)
- DMB&B (1993)
- Doyle Dane Bernbach: Evaluation of a campaign claim (1980)
- Gahagan Research Associates, Inc. (selected projects, 1972-78)
- Hakuhodo. Marketing Strategy for the 21st Century (1992-95)
- IMS America (1997-)
- Market Research Corporation of America (MRCA) (1975-1987)
- McConnel Advertising (Montreal), (1974)
- Medicus (1989-1997)
- Morgan, Lewis & Bockius: Development of Business Strategy (1992-94)
- MS&L: Marketing consulting (1995-97)
- National Analysts (1975-76)
- Oxtoby-Smith (selected projects, 1972-78)
- Professional Marketing Research, Inc. (1977-78)
- Robinson Associates (1969-75)
- Whittlesey and Partners (1972-73)
- Y & R (1989)

B. Directorship

- CASA – Complex Adaptive Systems Applications (1999-)
- Enhance Financial Services (1997-)

- Access Technologies Group, co-founder and chairman (1992-96)
- Contel Corporation, member of the Board of Directors (1988-91)
- Dover Regional Bank Shares, member of Board of Trustees (1986-90)
- Shooting Stars, Inc., member of the Board of Directors (1986-90)
- Reality Technologies, Inc. (1988-90)
- The Cortlandt Group, Inc., Co-founder and Chairman of the Board of Directors, (1979-86)

C. Expert Witness: Marketing and Marketing Research Consulting in Legal Cases

- Alschuler, Grossman and Pines: Packard Bell vs. Compaq, 1996
- Arent, Fox, Kitner, Plotkin & Kahn: Marketing research consulting re: Estee Lauder, 1987
- Arnold, Whiite and Dunkee: The Clorox Co. vs. Dow Brands Inc. re: Smart Scrub v. Soft Scrub, 1995
- Baker & McKenzie:
  - (a) G.D. Searle & Co. and subsidiaries litigation in the U.S. Tax Court, 1982
  - (b) American Republic Insurance Co. vs. Americare Inc. and American Dental Centers P.C., 1988
- Berle, Kass and Case: Evaluation of public attitude re: Burlington County Bridge Commission, 1992
- The Calorie Control Council vs. FTC re: the Saccharin case, 1979
- Covington and Burling:
  - (a) The Proprietary Association vs. FTC re: over-the-counter (antacids) drugs, 1979
  - (b) FTC Staff Report on cigarette advertising investigation 1981-83 including appearance before congressional committee in hearing on H. R. 1824: "The Comprehensive Smoking Prevention Education Act"
  - (c) International Telecharge Inc. vs. AT&T, 1992- 94
  - (d) Dream Team Collectibles vs. NBA Properties (regarding Dream Team), 1996
- Cravath Swain and Moore: Amertech Corporation, *et. Al.* v. Lucent Technologies Corporation [Arbitration], 1997
- Crude Oil Resellers vs. U.S. Department of Energy Economic Regulatory Administration re: the proposed crude oil reseller price regulations, 1979, including presentation at public hearing
- Darby and Darby. Proctor & Gamble vs. Colgate, Palmolive, and Y&R re: China advertising, 1997

- Dechert Price & Rhoads:
  a) The Mutual Assurance Co. vs. American Council of Life Insurance and Health Insurance Association of America (re: The Green Tree), 1983-84
  b) INC vs. Manhattan, Inc., 1985
  c) Tunis Brothers Co. vs. Ford Motor Credit Co., 1988
  d) Allerest vs. Alleract, 1988-90
  e) Campbell Soup Co. vs. Conagra, Inc. (Various deceptive advertising cases) 1991-96
- Department of Justice, Antitrust Division: Consulting in a number of cases since 1996, including Microsoft Network, ski resorts, and dental supplies
- Dilworth, Paxson, Kalish, Levy and Kauffman: Prince Castle vs. Le-Jo Enterprises, 1977-78
- Gibson, Dunn, & Crutcher:
  a) Pfizer, Inc. vs. International Rectifier Corp., 1982-83
  b) Thompson vs. General Nutrition Corp., 1985
  c) New Vector vs. Metro Mobile, 1986;1992
  d) Air Passenger CRS Antitrust Litigation vs. American Airlines, 1987-90
  e) Quintons/Mahurkar vs. Shiley
  f) McCaffrey vs. Pfizer re: Plax, 1990
  g) The Travel Difference vs. The Time Mirror Co. (LA Times), 1992
  h) Toyota regarding class action defense of the "destination charge" on Monronery Stickers, 1995-6; 1999-
  i) Hewlett-Packard vs. Nu-Kote Int. Inc., Anti-trust, 1998-99
- Gold, Farrel & Marks: Miramax Film Corp. vs. Columbia Pictures Entertainment, regarding *I Know What You Did Last Summer* (1997)
- Goodwin, Proctor and Hoar: FTC vs. New Balance (regarding "made in USA"), 1995-1996 [FTC Hearing] and consulting 1998
- Hapgood, Calimafole, Kalil, Blaustein & Judlowe: Merrill Lynch vs. Paine Webber (re. RMA), 1985
- Heller, Ehrman, White, and McAuliffe: Apple Computer Securities Litigation, 1985-86.
- Herling, Lindeman, Goldstein and Siegal: Roli Boli vs. Pizza Hut, 1997
- Hill, Betts, and Nash: Fender Musical Instruments Inc. vs. E.S.P. Co., 1985
- Howrey & Simon.
  (a) Sands, Taylor and Wood vs. The Quaker Oats Co. re: Thirst-Aid, 1987
  (b) Syntex, Inc. vs. Schering-Plough Healthcare Products, Inc. re: Femcare, 1992
  (c) Anheuser Busch vs. Labbatt (regarding Ice Beer), 1994-1995
  (d) Anheuser Busch vs. Samuel Adams, 1995
- IT&T Continental Baking vs. FTC re. Fresh Horizons advertising, 1977-78
- Jenner & Block:
  (a) General Dynamics vs. AT&T. re: Antitrust litigation, 1987-90
  (b) AT&T vs. MCI Re: Telemarketing Practices 1990
- Kaye, Scholer, Fierman, Hays & Handler: Automated Bread Dist. Corp. vs. General Foods Corp. (Re: Freihofer Baking Co.), 1991-92
- Kenyon & Kenyon:
  (a) Mead Data Control, Inc. vs. Toyota Motor Sales, U.S. re: Lexis vs. Lexus, 1988
  (b) Hiram Walker and Sons vs. White Rock Distilleriesi re: Kapala-Kahlua
  (c) America Online vs. AT&T Corp. (Re: ATT&T's "You Have Mail"), 1999
- Kirkland and Ellis
  (a) Time Inc. vs. Peterson Publishing Co. re: Teen vs. Teen People, 1997-98
  (b) Brach and Brock vs. James River re: Royals candies, 1998-99
  (c) Hermes vs. Lederer, re: the Kelly Handbag, 1998-99
- Kleinfeld, Kaplan and Becker: regarding Iron-Kids= Bread Package, 1991
- Lee, Toomey, and Kent Pfizer Pharmaceuticals vs. the IRS, 1978-79
- Lempres & Wulfsberg and Kutak, Rock, & Campbell: Evaluation of Expert Reports, re: International Pharmaceutical Products, Inc., 1985-90
- Liddy, Sullivan, Galway, and Begler:
  (a) Coopervision, Inc. vs. CTL, Inc. (re: Permatint), 1985
  (b) Johnson & Johnson, Inc. vs. Oral-B Laboratories (re: Minute-Gel), 1987
  (c) Soft Sheen's Care Free Curl vs. Revlon's I of Nature (Trademark), 1986-1987.
  (d) Oral-B Laboratories, Inc. vs. Johnson & Johnson, Inc. (re: Reach Advertising), 1986-

- Lowenstein, Sandler: Princeton Economics Group vs. AT&T (regarding class action defense of spirit), 1994-95
- Mitchell, Silberberg & Knupp, Stella Foods vs. Cacique IC, re: Ranchero, 1997-99
- Morgan, Lewis and Bockius: Scott paper defense in the Turnabout Marketing Case, 1983
- Morison, Cohen, Siner, and Weinstein, Hertz v. Avis, 1994.
- Pattishall, McAuliffe, Newbury, Hilliard, & Geraldson:
  a) S.C. Johnson and Son, Inc. vs. Carter Wallace ("Edge" vs. "Rise"), 1983
  b) Anheuser Busch vs. Stroh Brewery Co. and vs. Miller and Heillman, (re: LA beer), 1984-85
  c) S. C. Johnson & Son Inc., re: L'envie, 1986-7.
  d) Shelby Motor vs. Ford, 1988.
  e) GFA Brands Inc. and Fitness Foods Inc. vs. Canbra Foods Ltd. and Campbell Mithun/Esty, Inc. re Heartlight, 1990-91.
  f) AT&T vs. MCI (various deceptive advertising cases) 1991-
  g) Walt. Disney vs. Good Times, 1993
  h) Car Freshener Corp. vs. S.C. Johnson and Son, Inc. (re:Glade Plug Ins Air Freshener Design), 1994
  i) International Telecharge, Inc. vs. AT&T, 1992-94
  j) S.C. Johnson and Son, Inc. vs. Avon (regarding Skin So Soft) 1996
  k) GTE Card Services Inc. vs. AT&T, 1996
  l) SunAmerica Corp. vs. Sun Life Assurance Co. of Canada 1993-95, 1997-98 [W.H. Covington and Burling]
  m) Blue Cross Blue Shield vs. American Medical Association, regarding CPT, 1998
  n) Encyclopedia Britannica, Inc. vs. Britannica Home Fashions, Inc., 1999
- Paul, Weiss, Rifkin, Wheaton and Grasser:
  (a) Revlon vs. L'OREAL re: Colour Endure Commercials 1995
  (b) Revlon vs. Cover Girl self renewing lipstick advertising, 1996 [NAD]
- Pepper, Hamilton and Scheetz:
  (a) Del Monte Corp. vs. Sunkist Growers, Inc. Arbitration, 1990-91
  (b) Sun Oil Company defense against class action certification, 1997
- Pennie & Edmonds IT&T Continental Baking (C&C Cola): defense against Coca Cola re: C&C Cola, 1978
- Pillsbury, Madison & Sutro: Consulting re:
  (a) Thrifty Rent-A-Car vs. Elder, 1991-92
  (b) Green Giant American Mixtures, 1994
  (c) Chrysler Corp. vs. Replacement Sheet Metalparts Distributors, 1992-3
- Rogers and Wells [and the Italian Trade Commission], re: Italian pasta dumping case, 1996
- Sidley and Austin:
  (a) Industrial Gas litigation, 1986
  (b) Land O'Lakes, Inc. vs. Bakers Franchise Ltd., 1987
  (c) Ultramar, Inc. vs. CITGO Petroleum Corporation, 1997
  (d) AT&T vs. US West Communications, re: US West advertising, 1998
- Sills, Cummis, Zuckerman, Radin, Tischman, Epstein and Gross: E.R. Squibb and Sons, Inc. vs. Stuart Pharmaceuticals, 1991.
- Skadden, Arps, Meagher, & Flom:
  (a) American Home Products vs. Beecham re: Delicare commercials, 1986
  (b) Tambrands, Inc. vs. Warner-Lambert Co. re: EPT commercials, 1986-1987
  (c) Beecham Inc. vs. Yankelovich, Clancy, Shulman and Saatchi & Saatchi Holdings, Inc., re: projections for Delicare, 1986-8
  (d) American Express vs. MasterCard re: Goldcard, 1988
  (e) Challenge to the networks by Sterling Drug re: Bristol Myers Tribuffered Bufferin commercials, 1988
  (f) Challenge by Dow Brands, Inc. of the TV advertisement for Reynolds Metals Company's "SURE-SEAL" food storage bags, 1989
  (g) Anheuser-Busch Company vs. Coors Brewing Company (various deceptive advertising cases) 1991- 93
  (h) R.H. Donnelley vs. Sprint Publishing and Adv. Inc., re: Sprint Yellow Pages, 1996
  (i) Anheuser Busch vs. Boston Beer (regarding A-B advertising) [NAD], 1997
- Sullivan & Cromwell: Remington Rand Corp. vs. Amsterdam-Rotterdam Bank N.V., 1991

- Van Hagey & Bogan, Ltd.: Consulting re: The Quaker Oats Co, 1991
- Weil, Gotshal and Manges:
  - (a) Johnson & Johnson vs. SmithKline Beecham, Re: Tums Advertising, 1991
  - (b) Schering-Plough Healthcare Products vs. Johnson and Johnson, Inc. (regarding Neutrogena Chemical-Free Sun Block), 1996
- White & Case: Trovan Ltd. and Electronic Identification Devises vs. Pfizer Inc., (re: Trovan's trademark) 1999
- Whiteman, Breed, Abbott & Morgan:
  - (a) Pepsi Cola Company: Defense against Coca Cola Co. re: The Pepsi Challenge, 1978; 1981;1995
  - (b) Burger King Comparative Advertising Campaigns vs. McDonald's and Wendy's, since 1982

D. Illustrative Marketing Research Projects conducted for:

1. Air Canada (1973)*
2. American Cyanamid (1972-73)*
3. Atlantic Richfield Company (1971-72)*
4. Bankers Trust Company (1973-4)*
5. Bell Telephone Company of Pennsylvania (1974;1977)
6. BBD&O (1974-82)
7. Bissell, Inc. (1969-71)*
8. Bristol Myers Squibb (1998-)
9. Brown & Williamson Tobacco Corp. (1978-79)
10. Bureau of Newspaper Advertising (1974)*
11. CBS (1972)
12. Campbell Soup Company (1972-73)*
13. Chrysler (via BBD&O) (1975-78)
14. Clorox Company (1975-76)
15. Colonial Penn Group, Inc. (1973-79)
16. Commercial Union Assurance Companies (1974-75)
17. Connecticut Bank and Trust Company (1972)*
18. Downe Publishing, Inc. (1972-73)
19. Eastman Kodak Company (1973)*
20. E.F. Hutton (1981-84)
21. Edward D. Jones (1985-87)
22. First Pennsylvania Banking and Trust Company (1971-72; 1974-75)*
23. General Electric (via BBD&O 1977) (1982)
24. General Foods Corporation: the Jell-O and Kool-Aid divisions and various departments of the corporate product development division (1969-72)*
25. Geometric Data (1981)
26. International Air Transport Association (1973-75)*
27. International Harvester Credit Corporation (1973-74)*
28. International Harvester Company (1975)
29. IT&T Continental Baking Company (1972-78;1982)
30. Lever Brothers Company (1971-73)*
31. Marriott Corp. (1982)
32. Modern Medicine (1970)*
33. MRCA (1975-87)
34. Pacific Bell (1981-82)
35. Pepsi Cola (181)
36. Pfizer Pharmaceuticals, Inc. (1975-)
37. Pillsbury (1975)
38. Pioneer Electronics of America (1978)
39. RCA Computer Division (1972)*
40. Sears Roebuck & Company (1972-73)*
41. SEI Investments (1988-)
42. Singer (1973)
43. SmithKline and French (1971)*

44. Snelling and Snelling, Inc. (1973-74)
45. Sterling Drugs (1985-86; 1990-1992)
46. Stroh Brewery Company (1970)*
47. Sun Oil Company (1972)*
48. Syntex Laboratories, Inc., (1976-77)
49. Twentieth Century Fox (via the Data Group, Inc.) (1972)
50. UNICOM (1973)
51. U.S. Dept. of Commerce, Office of Telecommunications (1972)
52. The Wool Bureau, Inc. (1975)
53. Western Airlines (via BBD&O) (1979)

The research projects designed and conducted for these firms covered variety of consumer and industrial marketing problems including product positioning and market segmentation, new product development, generation and evaluation of new products, and promotional concepts. Projects with * were conducted via Robinson Associates

D. Evaluate the Marketing Research Programs and Design New Research Procedures for:

1. IT&T Continental Baking: copy and concept testing, segmentation studies (1972-78)
2. Brown and Williamson: copy and concept testing (1978-79)
3. Colonial Penn: all aspects of research (1973-80)
4. Pfizer Pharmaceuticals: image studies, new product selection models, etc. (1975-1990)
5. R.J. Reynolds Tobacco: new product development system (1979-80)

E. Illustrative Intra-Company Marketing Strategy (and Marketing Research) Workshops:

1. American Medical International (1978)
2. Amoco Fabrics Co. (1984; 1988)
3. ARA (1983)
4. Associacion Mexicana de Ejecutivos en Planeacion (1979)
5. Atlantic Richfield Company (1971)
6. AT&T (1972-78)
7. BBD&O (1974-83)
8. Bell Atlantic (1983)
9. Bell Canada (1980)
10. Black and Decker (1981)
11. Bristol Myers Squibb (1998)
12. The Bunge Group (1982)
13. Campbell Soup (1972)
14. Career Futures, Inc. (1975)
15. Certain-Teed Corporation (1983)
16. The Clorox Company (1975)
17. Colonial Penn Group (1975-80)
18. Computer Science Corporation (1975)
19. Contel (1989)
20. Di Giorgio Corp (1980-1981)
21. Edward D. Jones & Co. (1983)
22. E.F. Hutton (1979-)
23. Ethicon, Inc. (1979)
24. The Executive Forum (1979)
25. General Foods (1970)
26. Gray Advertising, Inc. (1977)
27. IBM – Applied Business Systems (1988)
28. International Harvester (1974-75)
29. Intermountain Health Care, Inc. (1978)
30. Los Angeles Times (1993)
31. Machinist Publishing Co., Ltd., Japan (1977)
32. Miles Laboratories Ltd., Canada (1973)

33. MRCA (1978)
34. New York Telephone Company (1976)
35. Pfizer Pharmaceutical, Inc. (1975-87)
36. Phillips Petroleum Company (1992-1993)
37. The Pillsbury Company (1976)
38. Rhodia, Brazil (1979)
39. Schlachman Research, U.K. (1975)
40. SEI Corporation (1990-)
41. SmithKline & French (1970)
42. Spectra-Physics (1983)
43. Standard & Poors (1998)
44. Syntex Laboratories, Inc. (1976)
45. 3M's Marketing Council(1986)
46. Tektronix, Inc. (1978)
47. Unilever, U.K. (1975)
48. Union Mutual (1981)
49. Wyeth International Ltd. (1980)
50. Xerox (1981)

G. Selected International Consulting

1. Li & Fung, Hong Kong: Business Strategy (1998 –)
2. Wickes, plc., UK: Marketing and business consulting (1988-96)
3. Hakuhodo, Japan: Design of a 21st Century Advertising Agency (1993-97)
4. McKinsey, Milan: New Developments in Marketing Strategy, Research, and Modeling (1988)
5. Sunstar, Japan: Marketing and Business Strategy (1985)
6. Bunge Group, Brazil: Marketing planning (1982-6)
7. Meridian Group U.K.: Marketing and Business Strategy (1985-6)
8. P.E. Consulting Group, South Africa: Strategic planning & Marketing Consulting and Conducting ExecutiveSeminars (1982)
9. Bell Canada, Canada: Market Segmentation Study (1979-81)
10. Cooperative de Seguros de Vida, Puerto Rico: Design of a marketing planning system (1980)
11. Discount Bank, Israel: Marketing planning (1980)
12. Bank Leumi Ltd., Israel: Marketing planning (1978)
13. Fuji electric, Japan: Design of a management planning process (1977)
14. Koor Industries, Israel: Designing and organizing the marketing function for the corporation's 34 companies (1968-69)

H. Consulting to Government Agencies

1. U.S. AIR FORCE: Evaluation of the Air Force resource allocation procedure (1980-81)
2. CANADIAN GOVERNMENT: Industry, Trade & Commerce Design and execution of a study for evaluation of the U.S. market potential for selected Canadian medical diagnostic and therapeutic products (1980-81)
3. U.S. PATENT AND TRADEMARK OFFICE: Designing a strategic planning system (1981)
4. NASA: Evaluation of NASA's IAC's 1976 advertising campaign and recommendations for its future advertising and marketing strategy (1977)
5. ISRAEL DEFENSE MINISTRY: Analyze and evaluate the marketing system of the Administered Areas (Arab territory prior to the 6-Day War). The findings and recommendations of this study were submitted in classified report to the Israeli Defense Ministry (1968-69)

I. Consulting to Research Organizations

1. Institute of Business and Economic Research, University of California, Berkeley. Consultant on the Coping Behavior (an empirical study of the consumer-technology interface) project, sponsored by the National R&D Assessment Program, NSF. (1976-81)
2. Pennsylvania Science and Engineering Foundation, Temple University/Applied Communication Research, Inc. Research consultant for design, analysis, and evaluation of an NSF (Office of Science

Information Services) sponsored project concerning the design and evaluation of experiments for the marketing of scientific and technical information services. (1974-77)

3. EDUCOM: Inter-university Communications Council, Inc. Participant in an interdisciplinary seminar to identify and measure special interest audiences for public television. (1974)
4. The John and Mary R. Markle Foundation.
5. Participated in a workshop for design of "Quality Ratings of TV Programs." (1979)
6. Participated in the design of a study on special interest audiences. (1975)
7. Marketing Science Institute Consultant from February,1967 to December,1968. Conduct and plan research projects primarily in the areas of industrial buying behavior, advertising, and international marketing.
8. Marketing Science Institute U.S. Department of Agriculture Study Group on Marketing Performance Principle investigator, March to December,1968. Developed a model for the evaluation of the performance of the U.S. marketing system.
9. Management Science Center University of Pennsylvania Senior staff member September,1967 to July, 1968.
10. Engaged in the development of a marketing model for Anheuser-Busch.

UNIVERSITY ACTIVITIES

University of Pennsylvania, The Wharton School

A. Program Development

1. The Master-in-e-Business. Initiator and Chair of the Committee to design the new degree program (1999)
2. The Advanced Management Program (AMP) Design Team (1998).
3. Wharton's Information Management Initiatives (1998-). Founder and co-chair of its faculty council.
4. The Revised MBA Curriculum (1990-1991). Chaired the committee that developed the new curriculum.
5. The SEI Center for Advanced Studies in Management, founding Director. Develop and direct all Center activities and chair its faculty council, 1988-.
6. The Joseph H. Lauder Institute of Management and International Studies, founding Director and chairman of its faculty council. Designed and directed all the Institute's programs, including the establishment of the Institute MBA/MA program which admitted its first class of 50 students in May, 1984, February 1983-July 1988.
7. Wharton International Forum. Initiated and designed the original program and chairman of its faculty council, 1987-1998.
8. Wharton Ph.D. with M.A. in International Studies. Initiated the joint program, 1988.
9. Wharton Center for International Management Studies (renamed in 1988 as the Wurster Center), founding director. Designed and directed all the Center's activities aimed at the stimulation of international research at Wharton and the internationalization of the faculty and programs, 1980-83.
10. The Wharton/SIA (Security Industry Association) Marketing Program. Initiated and designed the program which held sessions on April 1982 and November 1982.
11. The Wharton Recanati Multinational Marketing and Management Program, Co-founder, 1978.
12. The Wharton Executive MBA (WEMBA) program, chaired the committee that developed the program, 1974.
13. Marketing Programs, participated in the redesign of the marketing MBA programs, 1970; Ph.D. 1971; and Undergraduate, 1973 and 1981; including the initiation of The Wharton Dual MBA Major in Marketing/Multinational Enterprise.

B. **Courses Developed and Taught**

a. Developed (courses developed by me are indicated by an *), modified and taught courses and seminars in:
   - Marketing Management (MBA)
   - Consumer Behavior* (MBA and Ph.D.)
   - Marketing Research (MBA and Evening School)
   - Product Policy* (MBA)
   - Communication Processes in Marketing* (MBA)
   - Planning Marketing Strategy Projects (MBA)
   - Advertising Management (MBA)
   - International Marketing* (MBA)
   - Research Seminar (MBA and Undergraduate)
   - Health Care Marketing* (MBA)
   - Marketing Strategy (WEMBA*, MBA)
   - Industrial Marketing* (MBA)
   - Promotion Policy (MBA)
   - Integrating Marketing and Operations* (MBA) [developed jointly with P. Kleindorfer]
   - Marketing Methods and Applications for Business Consulting* (MBA) [developed jointly with P. Green]
   - Channel Management (MBA)
   - Multinational Management

b. Course head: MBA advanced study project (1967-68, 1974-79), Marketing Management for non-majors (1967-68, 1970-71), the MBA Core Marketing Management Course (1970-71, 1971-72), Marketing Strategy Seminar (1974-75)

c. Guest lecturer in various departments of the Wharton School including the Multinational Enterprise Unit, the Leonard Davis Institute of Health Economics, the Management Department, Management of the Arts Program, Decision Science, Public Policy and Management.

C. **Committee Responsibility:**

1. Marketing Department Committees:

- Recruiting/Personnel Committee, 1971 to present. Chairman Recruiting Committee, 1978-79; 1981-83; 1987-88.
- Curriculum Committee, Member of Committee and Chairman of a number of its subcommittees 1967-78, and 1996-98. Chairman of the committee 1970-71,1973-75, 1976-78, and 1980.
- Ph.D. Program Coordinator, 1972-75. Doctoral Committee, 1988-1989.
- External Boards/Affairs Committee, 1987/88; Chair 1988-89.
- Member and Chairman of various departmental Committees, including all the department's advisory committees since 1971, Marketing Fund Committee since 1983, and its Long Range Planning Committee, 1970/71.
- Senior Faculty Recruiting, Chairman 1995-97.

2. Wharton School Committees:

- Member of the Dean's Advisory Council (since its inception in 1983)
- Member of the Strategic Planning Steering Committee, 1999-
- Member of the Committee to prepare the strategy for "Management, Leadership, and Organizational Priority" area of the University's Agenda for Excellence, 1998
- Chairman of the Graduate Curriculum Committee focusing on a critical examination of the MBA program and its appropriateness for preparing the leaders of the 21st century enterprises. The Committee developed the new MBA curriculum which was tested in 1991/92 and 1992/93 and which was fully implemented starting in 1993/94.

- Initiated and organized the Management Education Council – the vehicle for corporate support and funding of the new MBA curriculum, 1992-
- The Wharton International Committee: Chairman, 1978-81, 82/83, 1995-97. [The 1995-97 committee developed the Wharton globalization strategy.] Member: 1967/8, 1983-87, 1989-1991.
- Member of Board of Directors of the following Wharton Centers:
  The SEI Center for Advanced Studies in Management, 1988-.
  Risk and Decision Process Center, 1984-.
  The Lauder Institute (Founder) 1983-
  The Manufacturing and Logistics Forum, 1992-
  The Wharton/PIMS Research Center (Co Founder), 1985-8
  U.S. Japan Management Studies Center, 1989-92
  Wharton Emerging Economics Program, 1992-95
  The Wharton Center of International Management Studies (Founder), 1981-83
- Member of the Advisory Committee on Faculty Personnel, 1976-78; 1984-85; 1987-89; 1994-95.
- Dean's Planning Task Force (1986).
- Member of the School's Executive Education Policy Committee, 1987/88-88/9.
- Member or chairman of a number of Chair Search Committees, including seven chairs in Marketing (1985, 1987, 1988-90, 1992, and 1997), Entrepreneurship (1984-85, 1997-8), International Management (1984-85), Operations Management (1986), the chair and director of the US-Japan Center (1988-91), the chair in Managerial Economics (1989), the chair in Information Technology (1996-97), and the chair in Electronic Commerce (1999).
- Member of the (ad hoc) Committee to Review Various Units and Departments:
  The Real Estate Center, 1988
  Social Systems Science, 1985-87
  U.S. Japan Center, 1985-86
  Multinational Enterprise Unit, 1977-78
- Member of the School's Faculty Personnel Committees of:
  The Health Care Systems Unit, 1974/75.
  The Multinational Enterprise Unit, 1978/79.
- Member of the Committee on Academic Freedom, 1977/78.
- Chairman of the Advisory Committee for the Wharton Executive MBA Program, 1974/75.
- Chairman of the Wharton School Doctoral Admissions Committee, 1974/75.
- Graduate Academic Standards Committee, 1969/70 – 1971/72. Chairman of its subcommittee for the evaluation and redesign of the school's grading system.
- A number of Ad Hoc Committees and task forces for the:
  - development of a core Ph.D. Behavioral Science Course, 1972/73,
  - redesign of the International Business program, 1971,
  - review of the Economic Offerings for Business and Applied Economic doctoral students, 1970/71,
  - development of a Continuing Education Program in Health Care Administration, November 1971-October 1973.
- Evening School Committee, 1972/73.
- Behavioral Lab Planning and Implementation Committee, 1989/90.
- Senior Faculty Committee to Review the Global Presence strategy (Summer 1997).

D. Doctoral Dissertations Supervised

Bent Stidsen (1972); Yehoshua Buch (1972); Kathy Villani (1973); Rene Y. Darmon (1973); Arun K. Maheshwari (1973); Chris Hetzel (1973) winner of the AMA Doctoral Dissertation Competition; Arun K. Jain Honorable mention at the AMA Doctoral Dissertation Competition; Joel Huber (1974); Irwin D. Reid (1975); Chris Buss (1979) winner of the AMA Doctoral Dissertation Competition; Robert J. Thomas (1980) Winner of the Academy of Marketing Doctoral Dissertation Competition; Cynthia Fraser (1980); Joel Steckel (1981) Honorable Mention AMA Doctoral Dissertation Competition; John Deighton (1983); Rajeev Kohli (1984); Oliver Heil (1988); Kamel Jedidi (1988); Bari Harlam (1989); Kris Helsen (1990); Nino Buran (1991); Hoon Young Lee (1992); Rajeev K. Tyagi (1994); Amy Kallianpar (1998).

E. Addresses to Alumni Club and Other Groups Regarding The Joseph H. Lauder Institute

Addresses to alumni clubs and other groups on the changing needs for management education and the University's response B The Joseph H. Lauder Institute.

1. **Alumni Clubs addressed include:**
   - Dallas (December 1984)
   - Cleveland (April 1986)
   - Hong Kong (July 1985)
   - London (May 1984)
   - Long Island (January 1984, March 1986)
   - Milan (October 1987)
   - Philadelphia (January 1984, January 1986)
   - Paris (December 1983)
   - San Francisco (November 1983)
   - Taipei (July 1985)
   - Tokyo (June 1985)
   - Toronto (August 1987)

2. **University Groups:**
   - Board of Directors of the Association of Alumnae, March 1984
   - The Vice Provost Advisory Board, February 1984
   - Wharton Board of Overseers, January 1984, 1997
   - Trustees (October 1983, January 1984)

3. **Other Groups (partial list):**
   - University of Pennsylvania Trustee Committee on Academic Policy (January, 1988).
   - 40th National Conference of the Council on International Education Exchange, San Francisco (November, 1987)
   - Title VI Center Lauder conference on International Studies and Foreign Language for Management. Philadelphia (May 1986)
   - University of Pennsylvania Alumni (Alumni day, Philadelphia, May 1985)
   - Delaware Valley Faculty Exchange Program on International Business and Languag Studies (December 1984)
   - AIESEC-Northeast regional conference (October 1984)
   - Deans of 50 schools in an AACSB seminar on Internationalizing the Business Curriculum (March 1984)

4. **Presentations to alumni groups and others regarding the Management 2000 project, the SEI Center for Advanced Studies in Management, and the revised MBA curriculu**
   - Wharton-Recanati Program, 1993
   - International Forum, 1993
   - Erasmus University – Faculty and Administration, 1993
   - Marketing Advisory Board Meeting, 1993
   - Board of Directors of the Wharton Alumni Association, September 1988; Ma

- The Wharton Board of Overseers, April 1988
- Wharton Advanced Management Program Participants, 1990, 91
- The Wharton Graduate Advisory Board 1990
- Wharton's European Advisory Board 1991
- Alumni attending the May 1991 Alumni Reunions
- The SEI Center Board of Directors 1990-91
- The Joseph H. Lauder Institute Board of Governors 1991
- College of Business Administration, University of Texas at Austin C Advisory Board and Faculty, February 1992
- INSEAD Faculty and Administration, February 1992
- Security Industry Institute, 40th Anniversary Program, Wharton, March 1992

5. **Presentations regarding Wharton's Globalization Strategy**

- Dean's Advisory Board, February 1997
- Wharton Board of Overseers, March 1997
- Wharton Graduate Executive Board, March 1997
- Wharton Executive Education Advisory Board, May 1997
- European Advisory Board 1997

6. **Presentations regarding Wharton's <u>Information Management Initiatives (IMI)</u>**

- Dean's Faculty Lunch, April 1998
- Various Wharton Departments, 1998-1999

University of Pennsylvania – University Committees:

- Faculty Senate Committee on Administration, 1995-98.
- Chair, Subcommittee of the Faculty Senate Committee on Faculty Teaching Evaluations, 1997-98.
- Chairman of Special Presidential Committee on Borderless Education, 1997-98.
- Provost's Task Force on the University of the Global Information Age, 1996-97.
- Faculty Editorial Board, University of Pennsylvania Press, 1996-97.
- Member of the Provost's Committee on Information Science and Technology, 1996-97.
- Member of the Provost's Committee on Distance Learning, 1996-97.
- Chairman of a new university committee focusing on innovative revenue generation, 1992/93 and 1993/94. Members include the President, Provost, Chairman of the Board of Trustees, 3 deans, 3 trustees, and 3 faculty members.
- Member of the Provost International Council, 1990-2
  Chairman of a Subcommittee for the Evaluation of the University Office of International Programs, 1990-91 and of a Subcommittee to Evaluate the University's Off-Campus Programs, 1991-92.
- Member of the Provost Task Force on International Programs (1992/93; 1993/94).
- Member of the Commission for the 250th Anniversary Celebration of University of Pennsylvania (1987-90)
- Advisory Board of the PBS series on The Global Economy, 1990
- University of Pennsylvania correspondent for PBS program on Geo-economy, moderated by Ted Koppel, May 1990
- Chairman of the Faculty Council of the Joseph H. Lauder Institute, 1983-1988.
- Member of the Board of Directors of the Joseph H. Lauder Institute, 1983 to present.
- Member of the Advisory Board of the office of International Programs, 1980 to present.
- Chairman, the Wharton Dean Search Committee, (selected Russ Palmer)1982/83.
- The Senate Committee on the Economic Status of the Faculty, 1978/79 (member); 1979/80 (chairman).
- Member of the FAS – Wharton Committee, 1975-77.
- Member of the University's Committee on Research, 1977/78. Chairman of its subcommittee for evaluation of the University's Policy and Conduct of Research Programs.

- Member of the subcommittee of the University's Academic Planning Committee for the Measurement of Academic Performance, 1972/73.

The Interdisciplinary Center (IDC), Herzliya, Israel

- Co-founder (1994)
- Chairman of its International Advisory Board, 1994 –
- Chairman of the Faculty Appointment and Academic Council 1998-99
- Delivered the first Graduation Address, October, 1998
- Delivered the first Zoltan Wind lecture, 1996
- Delivered the first graduation address of the Wharton Marketing Communication Program, March 1999
- Regular lectures in various courses, faculty seminars, and public addresses since 1995
- Initiator and program chair of the President's Forum

Other Universities

1. **Courses Taught**

   - Erasmus University (The Netherlands) – A variety of courses on marketing strategy and marketing science (1993).
   - University of Tokyo (Japan) – marketing science (1992).
   - University of New South Wales (Australia) – Doctoral Seminar in Marketing (1977).
   - University of California at Berkeley – Product Policy, Doctoral Seminar (1975).
   - University of Tel Aviv (Israel) – Consumer Behavior, Marketing Seminar (1968).

2. **Faculty Review**

   - Occasional evaluator of faculty publications for:
     Columbia University, Harvard University, Massachusetts Institute of Technology, New York University, Pennsylvania State University, Stanford University, Tel Aviv University, University of California at Los Angeles and at Berkeley, University of Chicago, University of Georgia, University of Illinois, University of Pittsburgh, University of Rochester, University of Southern California, University of Texas, Yale, and others.

3. **Other Activities**

   - Rice University – member of the external review committee, 1996
   - University of Santa Clara – member of a Site Review Team for the evaluation of the school's marketing department, 1981
   - University of Tel Aviv – Initiator and organizer of the school's faculty colloquium, working paper series, planned and organized a number of the school's executive development programs and various other activities, 1968/69
   - The Technion, Israel Institute of Technology – Outside examiner at the Graduate Division of the Technion – The Israel Institute of Technology, Haifa, 1969.

OTHER PROFESSIONAL ACTIVITIES

A. Development of Research Programs

1. The SEI Center's research program on Creating a 21st Century Enterprise. (1990 -)
2. Established the Value of Marketing program. (1993 -)
3. Initiated with Frank Bass the Empirical Generalizations in Marketing program. (1993 - 95)
4. Co-founded with Greg Farrington the Virtual University Lab program (1995 – 97)
5. Initiated the "Computers and Art" program for the ENIAC at 50 celebration
6. Co-developed with Bob Holland the SEI Center's George Harvey Program on Value Creation Through Diversity (1996 -)
7. Co-founded with Paul Kleindorfer the Information Management Initiatives Research Program (1998 -)

B. Editorial Activities

1. Initiator and co-editor with Paul Kleindorfer of the *Wharton on Management in the Global Information Age* series. The first volume is on *Digital Marketing* by Wind and Mahajan. Other volumes are in planning. 1998- .

2. Initiator and editor of the Wharton Executive Library (published by Oxford University Press), 1984-1987. The series was aimed at familiarizing top management with recent developments in the various management disciplines. Books published include:
   - Gerard Adams, *The Business Forecasting Revolution, Nation-Industry-Firm*, 1986.
   - Leonard M. Lodish, *The Advertising and Promotion Challenge, Vaguely Right or Precisely Wrong?*, 1986.
   - David Solomons, *Making Accounting Policy: The Quest for Credibility in Financial Reporting*, 1986
   - James C. Emery, *Management Information Systems: The Critical Strategic Resource*, 1987.

3. Initiator and editor of the Scientific Press Computer Based Marketing Series. 1984-90. The series offers short books on specialized marketing topics with accompanying PC software. Books published include:
   - Paul E. Green, *CAPPA Electronic Questionnaire Display and Analysis*, 1986
   - Gary Lilien, *Marketing Mix Analysis with Lotus 1-2-3*, 1987
   - John Hauser, *Applying Marketing Management: Four PC Simulations*, 1987
   - Darral G. Clarke, *Marketing Analysis and Decision Making: Text and Cases with Lotus 1-2-3*, 1987.
   - Gary Lilien, *Marketing Management: Analytical Exercise with Lotus 1-2-3*, 1988.

4. Editor-in-Chief, *The Journal of Marketing* 1978-1981 (Vol. 43-45)

5. Area Editor, *Marketing Science*, 1981-83 (Vol. 1-2)

6. Advisory Editor of the Addison-Wesley Marketing Series, 1974-1981. Books published under my editorship include:

   - G. David Hughes, *Marketing Management*, 1978.
   - James Bettman, *An Information Processing Theory of Consumer Choice*, 1979.
   - Richard N. Cardozo, *Product Policy: Cases & Concepts*, 1979.
   - F.E. Brown, *Marketing Research: A Structure for Decision Making*, 1980.

7. Member of the Editorial Boards of:

- *Journal of Interactive Marketing*, 1998 -
- *Journal of Segmentation in Marketing*, 1997 -
- *Journal of Pricing Management*, 1989 -
- *Journal of High Technology Management and Market Research*, 1988 -
- *Advances in Business Marketing and Purchasing*, 1987 - 1992
- *Journal of Global Marketing*, 1986 -
- *Journal of Product Innovation Management*, 1982 -
- *Journal of Organizational Behavior and Statistics*, 1983 -
- *The Journal of Consumer Research*, 1973 - 1984
- *Annual Review of Marketing*, 1980 - 1982
- *Journal of Marketing*, 1971 - 1978
- *Journal of Marketing Research*, 1978 - 1981
- *Journal of Business Research*, 1974 - 1977
- *Computer Operations*, 1968 - 1970

8. Occasional reviewer for:

- *Journal of Marketing*
- *Management Science*
- *Operations Research*
- *Decision Sciences*
- *IEEE Transactions on Engineering Management*
- *The Wharton Quarterly*
- *The Journal of Economics and Business*
- *Public Opinion Quarterly*
- *Journal of Management Studies*

9. Screening editor, *Journal of Consumer Research*, 1973 - 74.

10. A judge of competitive research papers submitted to the National Conference of The AMA Academic (August) Conference in - Minnesota (1971), Houston (1972), Washington (1973), Portland (1974), Rochester (1975), Memphis (1976), Chicago (1980), Chicago (1984).

11. A judge of Ph.D. dissertations submitted to the AMA Doctoral Dissertation Competition, 1974, 1976, 1977, 1981, 1982, 1983. And the MSI Dissertation, and other award competitions 1984, 1985, 1990 –

12. Reviewer of papers submitted to the Market Measurement and Analysis Conference (now renamed Marketing Science Conference) since 1981.

13. Occasional reviewer of applications for research grants for the Social Science Research Council (London, England) since 1972; and the National Science Foundation, Division of Science Information and Advanced Productivity Research and Technology, since 1977.

14. Reviewer of manuscripts for a number of publishers and universities, including the MacMillan Company, the Center for Research of the College of Business Administration of Pennsylvania State University, the Graduate School of Business, Columbia University, Prentice Hall, Jose Ba and others.

C. Offices Held in Professional Associations

AMA

1. Member of the Board of Directors, The Philadelphia Chapter of the AMA, 1979-83.
2. Program Chairman of:
   a) The 1977 AMA Doctoral Consortium Philadelphia, August 1977.
   b) The 1975/76 AMA Attitude Research Conference, Hilton Head, SC, February 1976.
   c) The National Educators AMA Conference, Washington, D.C., August 1973.
3. Member of a number of AMA councils including the Advisory Council of the National Marketing Honorary Society of the AMA - Alpha Mu Alpha, 1980/81 and the Educational Policy Council, 1977/78.

TIMS

1. Chairman, 1974/75; Chairman Elect, 1973/74; and Vice Chairman, 1971/72 of the Institute of Management Science College of Marketing.
2. Program Chairman of:
   a) Marketing track on "Marketing Science for Increased Competitiveness of Firms and Countries", 1988 Washington, D.C., TIMS/ORSA Conference.
   b) The 1981 Market Measurement and Analysis Conference (with Vijay Mahajan)
   c) The Delaware Valley Chapter, 1967/68.
3. Member of the Program Committees of the Market Measurement and Analysis Conference: University of Texas, 1980; New York University, 1981; and the Marketing Science Conference: University of Chicago, 1983; Vanderbilt University, 1985; University of Texas at Dallas, 1986; Centre HEC-ISA, Jouy-en-Josas, France, 1987; Washington University, 1988.
4. Member of the Advisory Board of Marketing Science, 1983 -

IAM – The International Academy of Management

1. Program chairman, the Americas Conference, 1994, 1998
2. Vice Chancellor for the Americas, 1995 -

MSI – Marketing Science Institute

1. Chair of a task force on e-business evaluation (part of the Metrics program), 1999.
2. Academic Trustee (1989-95)
3. Member of the Academic Advisory Council (1983-87)
4. Member of a number of steering groups, including
   - Marketing Strategies Steering Group, 1983-87
   - The International Advisory Steering Committee (1985-87)
   - Information Technology Steering Committee (1990-92).

Other

1. World Management Council. Member of the Academic Advisory Board (1988-).
2. Member of the interdisciplinary task force (organized by AMA) for the design of the *Journal of Consumer Research*, (October 1971-July 1972). Founding member of the Policy Board of the *Journal of Consumer Research*, 1972-1983; Chairman of the Board 1977/78; Chairman of the 1976 and 1981 Editor Search Committees.
3. Member of the Philadelphia's International City Steering Committee, 1983-1985, 1987-1988.
4. Member of the Publication Committee of AAPOR, 1973/74.
5. Member of Program Committee of 1979 ACR Conference.

D. Planning and Organizing Professional Programs at the University

1. Redesigned and directed the executive program, "Winning in the Next Millenium," Dec. 1998.

2. Initiated "The Impact of Computers and Information Technology on Management: 1946, 1996, 2001," May 13-14, 1996 program for the ENIAC at 50 celebration (1994 -)
3. Initiated the "Computers and Art" program for the ENIAC at 50 celebration (1994 -)
4. Participated in the original design of the Wharton – AT&T Marketing Management Program. Taught in the 1973, '75 -'80 programs.
5. Developed, organized and taught a Marketing Research Seminar for U.P. Clinical Scholars Group (February - May 1975 and February - April 1976).
6. Planned and taught the marketing management section of a number of advanced management programs of the University of Pennsylvania:
   - Dean Witter - Wharton Account Executive Program, 1986.
   - Securities Industry Association Program, annually since 1982
   - Advanced Management Program for Overseas Bankers, 1975, 1976
   - Program for Health Care Executives, 1973, 1975, 1982
7. Participated in various executive development programs of the Marketing Department of the University of Pennsylvania:
   - Marketing for the Postal Service, 1983
   - Marketing Strategy Seminar, since 1981 (January & May)
   - Pharmaceutical Advertising Council, 1980/81
   - Wharton Salesforce Management Seminar, since 1980 (January & May)
   - Dixie/Marathon (American Can Company), May 1977
   - Marketing Research Seminar 1977 - 1983
   - General Building Contracting Association, Inc., January 1977
   - Center de Promotion du Commerce International, Chambre de Commerce et d'Industrie de Nantes, 1976, 1978-80
8. Planned and taught (with Thomas Robertson) a number of seminars on Health Care Marketing for:
   - The Virginia Hospital Association, February 1978.
   - The New York Management Center, September and November 1977.
   - The Wharton School's Lifelong Education Program, October 1976.
9. Co-founder, organizer of the Wharton teaching component, and frequent lecturer in the Penn/Israel Binational Marketing Management Program 1979 - 1995.

E. Award Committees

1. Member of the Parlin Board of Governors, 1978-83, 1995-; Chairman of the Board, 1980/81.

2. Initiator of the Lauder Institute Award for the Research Paper that Best Advances the Theory & Practice of International Management Science. Administered by TIMS and Chairman of the first award (1989 -)

3. Member of the W. Arthur Cullman Executive Award Selection Committee (Ohio State University), 1985 -.

4. Member of a panel of judges for the evaluation of nominees for the Paul D. Converse Awards for Outstanding Contributions to the Development of Theory and Science in Marketing, 1974, 1977, 1981, and 1986.

F. Planning and Organizing Professional Programs Outside the University

1. Planned and taught a number of two-day seminars on "Recent Developments in Marketing Research Methodology" for:
   - The Management Center, University of Bradford, February 1975 and May 1976.
   - The University of Laval, Canada, November 1973.
   - The University of Social Sciences at Grenoble, France with (Paul E. Green), May 1973.

2. Planned and taught various AT&T Executive Development Seminars on:
   - "Multivariate Analysis in Marketing", March and August 1975.

- "Market Analysis", December 1974, and June 1975.
- "Market Segmentation", September 1974, November 1975 and March 1976.
- "How to get the Most Out of Your Marketing Research", Spring 1974.
- "Consumer Behavior", October 1972, January 1978.

3. Planned and taught two one-day executive seminars on Conjoint Analysis and New Product Policy at the University of New South Wales (Australia), June 1977.

4. Planned and taught a number of executive seminars at the University of Tel Aviv: Marketing Strategy (1969); Product Policy (1977); Marketing and Corporate Strategy (1978, 1980); New Development in Product and Marketing Research (1980).

5. Planned and taught the marketing research section of the Bank Marketing Program of the Graduate School of Bank Marketing, April 1977.

6. Planned and taught a series of two-day seminars on Marketing Strategy for the New York Telephone Company, February and April 1976.

7. Initiated, planned and organized a number of two day workshops on:
   - Concept Testing, University of Pennsylvania, March 1972.
   - Industrial Buying Behavior (with Frederick E. Webster and Richard N. Cardozo), sponsored by the AMA & the University of California at Berkeley, April 1971.
   - Research Utilization, (with Steve Greyser and Randy Batsell), sponsored by the AMA and MSI, April 1979.
   - Advances and Applications in New Product Forecasting: Innovation Diffusion Models (with Vijay Mahajan) sponsored by MSI, October 1983.

8. Organizer and chairman of various sessions at annual conferences of various professional associations (illustrative list):
   - "Consumer Labs", Marketing Science Conference, March, 1997.
   - "Global Marketing Strategy", 1991 ORSA/TIMS Meeting
   - "Creation of Innovative Marketing Knowledge: An Interdisciplinary Perspective", 1989 AMA Marketing Educators Conference, August 1989.
   - Strategic Alliances", TIMS Osaka, Japan, July 1989.
   - "Industrial and New Technologies Marketing: Lessons from Industry", International Research Seminar in Marketing, La Londe les Maures, France, May 1989.
   - "New Product Development Models", ORSA/TIMS, San Diego, October 1982.
   - "Product/Market Portfolio Models", ORSA/TIMS, Colorado Springs, November 1980.
   - "The Role of Multivariate Analysis in Consumer Research", APA, Toronto, 1978.
   - "Applications of Management Science to Market Segmentation", TIMS, Miami, 1976.
   - "Recent Developments in Management Science Application in Marketing", TIMS, Las Vegas, 1975.
   - "Multidimensional Scaling and Conjoint Measurement in the Study of Multidimensional Psychophysics", ACR, Boston 1973.
   - "Implementation of Management Science in Marketing", TIMS, Houston 1972.
   - "On the Teaching of Consumer Behavior", AMA, Houston, 1972.
   - "Family and Industrial Buying Behavior", AMA, Minneapolis, 1971.
   - "Multidimensional Scaling in the Study of Consumer Behavior", ACR. 1970.

9. Planned, organized and taught a Marketing Management Program for the top executives of the Union of Cooperative Societies (Israel), April to July 1969.

10. Planned and taught marketing courses at a Graduate Program for Marketing Consultants at the Israel Institute of Productivity, September 1968 to January 1969.

11. Academic advisor to a number of organizations engaged in Management Training in Israel. Primarily the Israel Institute of Productivity, and the Technion Research and Development Foundation Ltds., January to August 1969.

E. Lecturing

1 Illustrative Keynote Addresses at various conferences including:

- "Towards a New Marketing Paradigm," AMA Winter Marketing Educators' Conference, February 1998
- "Creating a 21st Century Enterprise: Implications for Marketing Practice, Research and Education," Keynote Address, 2nd International Workshop on Economics and Management, Santiago, Chile, October, 1996
- "AHP in Top Management Decisions," The Keynote address of The International Conference on AHP Washington, DC, July 11, 1994.
- "Marketing in the Pharmaceutical Industry: Emerging Challenges and Opportunities," Healthcare Marketing and Communications Council and Wharton Executive Education, Wharton School, April 8, 1996.
- Neuhauf Lecture, "The Impact of Marketing Science on Industry and Academia: Applications, Results and Lessons," at Rice University, March 23, 1994.
- Third Workshop on Marketing and Competitive Advantages with Ambrosetti Group, Milan on "The Customer Driven Company: From Concept to Reality", November 27-28, 1992.
- Amoco Fabrics and Fibers Co-Leadership Council, address on "What a Difference a Difference can Make", May, 1988.
- A special meeting of the Chinese Management Association and the Taiwan Ministry of Trade, address on "Marketing to the U.S." (Taipei), July 1985.
- MRCA Conference on "The Affluent Market: New Data and Methodologies in Financial Services Planning", November 1984.
- The 1983 ESOMAR congress August 1983 at Barcelona. Keynote address on "The contribution of Research to Product Management and New Product Development.
- The 1983 Research and Planning Conference of the Bank Marketing Association. Keynote address on the Integration of Marketing into Strategic Planning", April 1983.
- The 1982 AMA Faculty Consortium on "Industrial Marketing and the Changing Environment." Ohio State University, July 1982.
- S.F. Chapter of the AMA, address on "Increasing Marketing Productivity, March 1982.
- Philadelphia Chapter of the AMA, Conference on Market Segmentation, January 1981.
- The First Delaware Valley Meeting of the Product Development and Management Association (PDMA), December, 1980.
- AMA International Conference Workshop, Philadelphia, June 1978.
- National Agricultural Marketing Association, Philadelphia, March 1977 and February 1978.
- Marketing Planning Conference, The AMA Western Michigan Chapter, Grand Rapids, March 1976.
- The 11th Annual "New Horizons in Science", Conference of the Council for the Advancement of Science Writing, New York, November 1973.

2. Presented papers at various national conferences of the American Marketing Association, December 1967; June and August 1968; August 1969; August 1970; June and August 1974; April and August 1975; August 1976; August 1977; June and August 1978; June and August 1979; June and August 1980; August 1981-1990, March 1990, August 1991; August 1991, April 1993; February & August 1994, August 1995, August 1996, August 1997, February 1998, August 1999.

3. Speaker in various conferences and workshops of:

- Association for Consumer Research (ACR), 1968, 1970/73, 1975, 1977, 1984.
- The Institute of Management Science (TIMS), 1969, 1972, 1974-78, 1980-.
- American Institute of Decision Sciences (AIDS), 1974, 1976.
- American Association of Public Opinion Research (AAPOR), 1974/75.
- American Psychological Association (APA) DIV 23, 1978.
- American Statistical Association (ASA), 1978.
- AMA Philadelphia Chapter, 1980/81.

- Annual Conference of The Strategic Management Society, 1984.
- Annual Conference of the Pharmaceutical Marketing Research Group (PMRG), 1986, 1987.
- Annual Conference of the World Future Society Assembly, Washington, D.C., 1993

4. Speaker in a number of the AMA Attitude Research Conferences, 1967, 1971, 1973, 1976, 1987.

5. Member of the Faculty of the AMA Doctoral Consortiums:
   - University of Colorado, 1996
   - University of Santa Clara, 1994
   - University of Southern California, 1991
   - New York University, 1987
   - University of Notre Dame, 1986
   - University of Michigan, 1983
   - University of Minnesota, 1982
   - Pennsylvania State University, 1980
   - University of Maryland, 1981
   - University of Wisconsin, 1979
   - University of Chicago, 1978
   - University of Pennsylvania, August 1977
   - University of Texas, August 1976
   - University of Illinois, September 1971

6. Member of the AMA Faculty Consortium, Chicago 1997

7. Delivered papers and participated in various professional workshop on:

   - Applications of Multidimensional Scaling to Marketing and Business, sponsored by the University of Pennsylvania and Bell Laboratories, June 1972.
   - Planning Data for STI Managers, Sponsored by NSF office of Science and Information, December 1976.
   - Synthesis of Knowledge of Consumer Behavior, sponsored by the RANN Program National Science Foundation, April 1975.
   - Multinational Product Management, sponsored by the Marketing Science Institute and the AMA International Marketing Division, January 1976.
   - Consumer and Industrial Buying Behavior, sponsored by the University of South Carolina, March 1976.
   - Organizational Buying Behavior, sponsored by the University of Pittsburgh, April 1976.
   - Consumer Research for Consumer Policy, sponsored by the MIT Center for Policy Alternatives, July 1977.
   - Analytical Approach to Product-Marketing Planning, sponsored by the AMA and MSI, University of Pittsburgh, November 1977, October 1981.
   - Interfaces Between Marketing and Economics, sponsored by the University of Rochester, 1978, 1983.
   - Industrial Marketing, Penn State University, May 1982.
   - Market Measurement and Analysis, renamed Marketing Science Conference sponsored by ORSA/TIMS:
     Centre HEC-ISA, Jouy-en-Josas, France, 1987.
     University of Texas at Dallas, 1986
     Vanderbilt University, 1985
     University of Chicago, 1984
     University of Southern California, 1983
     Wharton, March 1982
     New York University, March 1981
     University of Texas, Austin, March 1980
     Stanford University, March 1979

8. Illustrative addresses at various top management conferences and meetings in the U.S. and abroad:

    - "Preparing for 2002: Creating a Leading Global Medical Communication Company for the 21st Century," Top Management of Medius Group Int. Paris, May 1997.
    - "The Next Enterprise: Creating a Successful 21st Century Enterprise," The Hong Kong Management Association, January, 1996.
    - "Building the 21st Century Corporation Today: A Marketing Perspective," A one day session for CEOs who participate in the MASTERSHIP program (LA) January 1990.
    - "Growth Outlook for Consumer Products and Services" to the policy committee of Anheuser-Busch Company, 1986.
    - "Marketing Management in Securities Firms" SIA Regional conference, 1986.
    - "Recent Developments in Marketing Strategy", to Dutch top executives by Horringa & DeKoning, October 1986.
    - A number of 1-day Top Management Seminars organized by Studio Ambrosetti (Italy):
        - Developing and Launching New Products (1986)
        - Marketing and Corporate Strategy (1987)
        - Marketing for Financial Institutions (1987)
        - Domestic and International New Business Entry Strategies 1988)
        - Strategic Marketing and New Product Development (1989)
        - How to Develop Products More Often and Get Them to Market Faster (1991)
        - The Consumer Goods Scenario: The Challenge (1992)
    - "The Challenge of Marketing" Board of directors and top management of Grand Metropolitan, 1985.
    - "Advances in marketing and Business Strategies" Top management group of the John Fluke Manufacture Co., 1985.
    - "Global Marketing Strategies" YPO Chapter of Hong Kong, 1985.
    - "Marketing for Hospitals" Hospital presidents program of the J&J Leonard Davis Institute program, 1985.
    - "Global Marketing Strategies" Top executive group of MARS pet food business,1984.
    - "Marketing for the Evolving Company" Conference on "Financing & Managing the Evolving Company" sponsored by Arthur Andersen & Co. and the GSB University of Texas at Austin, April 1984.

    Other Top Management groups addressed include:

    - MSI Trustees, Cambridge, Massachusetts, October 1983.
    - Securities Industry Association Fall Meeting, N.Y., October 1982, Spring Meeting, Homestead, Virginia, May 1982: keynote speaker.
    - Three sessions at the 1979 YPO Central Area Conference, Williamsburg, October 1979.
    - Two sessions at the YPO International University, Rio de Janeiro, May 1979.
    - Two sessions at the 1978 YPO, Eastern/Northeastern Area Conference, Sea Island, Georgia, November 1978.
    - Eastern Pennsylvania Chapter of YPO, October 1978.
    - Two-day seminars for top executives of Latin American countries sponsored by Expansion Publishing Group, Mexico City, June 1978, (Marketing Strategy); June 197 (the Marketing Audit); and December 1980 (Marketing for Top Executives).

9. Guest lecturer at faculty research seminars and executive development programs of various universities and research institutes, including:

    - Bell Laboratories (Applied Statistics Area), 1978
    - Columbia University, 1974, 1976-78
    - Drexel University, 1977, 1984
    - Erasmus University, The Netherlands, 1993
    - Escola de Administrao de Empresas de Sao Paulo, Brazil, 1979

- European Institute for Advanced Studies in Management, Brussels 1981
- Florida Atlantic University, 1972
- Harvard University, 1981
- IESE Universidad de Navarra, 1999
- Indian Institute of Technology (IIT) Bombay, 1989
- INSEAD, France, 1992
- Institut Superieur des Sciences Economiques et Commerciales, Paris, 1981
- Interdisciplinary Center Herzliya, 1996, 97
- Laval University, Canada, 1973
- Monash University, Australia, 1977
- Nanzan University, Nagoya, Japan, 1977
- New York University, 1979, 1984
- Northwestern University, 1980
- Norwegian School of Management, Norway, 1993
- Pennsylvania State University, 1978
- Southern Methodist University, Texas, 1982, 1984, 1986
- Stanford University, 1976, 1982
- State University of New York at Buffalo, 1975
- University of Bradford, 1975/6
- University of California at Berkeley, 1975
- University of California at Los Angeles, 1976, 1980, 1990,
- University of Capetown, S.A., 1982
- University of Chicago, 1981
- University of Groningen, 1986
- University of Houston, 1977
- University of Illinois, 1985
- University of Iowa, 1971
- University of Minnesota, 1973
- University of New South Wales, Australia, 1977
- University of Ottawa, 1974
- University of Pittsburgh, 1988
- University of Social Sciences, Grenoble, France, 1973
- University of Southern California, 1979
- University of Tel Aviv, 1977-80, 1982
- University of Texas at Austin, 1984, 1997
- University of Tokyo, Japan, 1992, 1993, 1995, 1997
- University of Washington, 1979
- Yale University, 1982

10. Speaker at various executive programs of the University of Pennsylvania:

- Winning in the Next Millennium, "Driving Change," 1998
- Stennis Congressional Fellows Program at Wharton, "Driving Change: Creating Winning 21st Century Organizations," 1997.
- Competitive Marketing Strategies, "Preemptive Strategies," 1997, 1998
- Sales Force Management Program, "Segmentation and Positioning for Sales Force Effectiveness," 1987, 1990, 1997
- Healthcare Marketing and Communications, 1996
- Re Engineering Pharmaceutical Marketing, 1994
- Executive Development 1992, 1993
- AMP -- Advanced Management Program, 1988, 1989, 1990, 1991, 1997, 1998
- "Marketing Strategy" in the J&J-Wharton Fellows Program in Management for Nurses 1983, 1984, 1985, 1986
- "Marketing Strategy" in the Delaware Valley Hospital Strategic Planning Program, Ma 1980
- "New Developments in Social Research", in the Symposium on Corporate Awarenes February 1977.

1. Speaker at various local and regional meetings of the American Marketing Association, 1967 to present, and national meetings of other marketing associations such as the National Account Marketing Association, 1973; the International Pharmaceutical Marketing Research Group, 1973; The National Association of Children's Hospitals and Related Institutions, 1976; American Management Association's advanced Marketing Research Seminars, 1967/68; and the Marketing Science Institute conferences and management seminars, 1968-1994.

2. Guest speaker at special seminars of:

    - The Australia and New Zealand Marketing Societies in Sydney and Melbourne, June 1977.
    - Various conferences of the Israel Advertisers' Association, The Technion Research and Development Foundation, Ltd., The Ministry of commerce and Industry, 1968/69.
    - Foreign market entry and import protection strategies, The Israel Institute of Management, October 1984.

3. Illustrative Recent Presentations

    - "Towards a Research Agenda in E-Commerce and Internet Marketing," AMA Educators' Conference, San Francisco, August 1999.
    - "Digital Marketing and the Future of Marketing, Marketing Research, and Academic Research in Marketing," Plenary session of the AMA Educators' Conference, San Francisco, August 1999.
    - "Creativity and Innovation" in Wharton Workshop on Creativity and Knowledge Creation, April 1999.
    - "Marketing Strategy in the Global Information Age: Implications for Research and Modeling," PhD. And Faculty Seminar IESE Universidad de Navarra, Barcelona, March 8, 1999.
    - "A Marketing Perspective on Communication Policies," The Communication Summit, Washington, D.C., February 28, 1999.
    - "The Information Revolution and the Emerging Management Education Paradigm," On Line Educa, Berlin, Dec. 1998.
    - "Towards a New Management Education Paradigm," IDC Faculty Workshop, June 1998.
    - "An Extended Marketing Perspective on Corporate Architecture for the 21st Century," Japan Marketing Association, World Marketing Conference, Tokyo, April 1998.
    - "Winning the high Tech Wars: Strategies for Driving Change," NEC Management Team, Tokyo, April 1998.
    - "The Challenge of Customer-Driven Product and Service Customization," Senior management of Convatec, March 1998.
    - "Towards a New Marketing Paradigm", AMA Winter Marketing Educators= Conference, February 1998
    - "Positioning and Segmentation in the Global Information Age", IMS Marketing Management Meeting, January 1998
    - "The Challenge of Market Leadership", Bristol-Myers Squibb Medical Devices Group, January 1998.
    - "Driving Change: Preparing for the 21st Century", Business Writers= Seminar, December 1997
    - "Marketing Strategy in the Global Information Age", AMP Program, October 1997
    - "Integration of Marketing and other Business Functions: The Wharton Experience", AMA: 1997 Faculty Consortium B Chicago, August 1997
    - "Positioning and Segmentation Opportunities for Synergy and Growth", Cognizant Group's Marketing Council, July 1997
    - "Preemptive Strategies", Wharton Executive Education Competitive Marketing Strategies, June 1997
    - "Creative Joint Ventures and the Potential Role of the University", Philadelphia-Israe Chamber of Commerce, June 1997

- "Communicating and Marketing Your Excellence", Volunteer Committees of Art Museums - VCAM Conference, Philadelphia, April 1997
- "The Challenge of Information Technology to Marketing and Retailing in the 21st Century", University of Tokyo, April 1997
- "Toward a New Corporate Governance Model: Lessons from the Japanese and U.S. Experience", With Masaru Yoshitomi, the Corporate Governance Workshop, March 1997
- "Creating a Leading Global Medical Communication Company for the 21st Century", Medicus Group International, Inc., March 1997
- "Segmentation and Positioning for Sales Force Effectiveness", Sales Force Management, Wharton Executive Education, March 1997
- "Marketing Strategy in the Global Information Age: Implications for Modeling and Research", Ph.D. Proseminar, March 1997
- "Choices and Strategies for Universities in the Global Information Age", Provost=s Seminar on Information, February 1997
- "The Use of Conjoint Analysis-Based Survey to Determine Consumer Price Elasticities", Debriefing Session for the Anti-Trust Division, Washington, D.C., February 1997
- "The Challenge of Competitive Strategies in the Global Information Age", The Interdisciplinary Center for the Study of Business, Law and Technology, Herzliya, Israel, December 1996
- "Innovation and New Product Development", Tutorial at the 2nd International Workshop..., Santiago, Chile, October 1996
- "Creating a 21st Century Enterprise", Universidad Adolfo Ibanez, Vina del Mar, Chile, October, 1996
- "Marketing: The State of the Art", Conference of the 2nd International Workshop on Economics and Management, Santiago, Chile, October, 1996
- The Technology Challenges for Family Business", Technology Day: The Web, The Future and You, the 1996 Family Firm Institute Conference, October, 1996
- "Innovative New Product and Service Development: Best Practice and Opportunities for experimentation", The Israel-North America Business Conference, New York, October, 1996
- "Creating a 21st Century Enterprise: Implications for Boards of Directors," Enhance Board of Directors, September, 1996
- "Innovation in New Product Development: Best Practice in Research, Modeling and Applications," Presentation to the JMR Editorial Board on the Special issue, August, 1996
- "Marketing Strategy in the Global Information Age: Implications for Research and Modeling," AMA 1996 Doctoral Consortium, July, 1996
- "Creativity and Innovation: The Management Edge in the Technological Age," the First Wind Lecture at the Interdisciplinary University of Law, Management and Technology (ISRAEL), May 1996.
- Address on Issues in Marketing Research for Legal Cases: Necessity of Using controls and the Propriety and Risk of Repetitive Probes", Marketing and Public Policy Conference, Washington, D.C., May, 1996.
- "Innovation and New Product and Business Development," CEO Circle, May 10, 1996.
- "Segmentation in the Global Information Age: Accomplishments, Problems and Challenges," The 1996 Converse Award Presentation, May 7, 1996
- "Advances in Marketing," Janssen Pharmaceutica, April 18, 1996.
- "Marketing in the Pharmaceutical Industry: Emerging Challenges and Opportunities," Keynote Address, Healthcare Marketing and Communications Council and Wharton Executive Education, Wharton School, April 8, 1996.
- "The Stakeholder Challenge for Increased European Competitiveness," Wharton European Forum, (London, England), March 29, 1996.
- "Product Launch," Software Development and Marketing for Competitive Advantage, IC^2, The University of Texas Conference, March 20, 1996.
- "The Next Enterprise: Creating a Successful 21st Century Enterprise Today," The Hong Kong Management Association, January 12, 1996.

- "Toward Virtual Management Education," International Academy of Management (Boston, MA), December 8, 1995.
- "Business in the Global Information Age," The Interdisciplinary Center of Business, Law and Technology, December 3, 1995.
- "Marketing Issue in the Global Economy," Wharton Doctoral Consortium, August 11, 1995.
- "A View of Marketing Through the Prism of the 1977 and 1995 Doctoral Consortia," Wharton School, Doctoral Consortium, August 8, 1995.
- "Toward a New Marketing Paradigm," Ambrosetti Group's A.F. Meeting (Rome, Italy), March 8, 1995
- "Toward a New Marketing Paradigm: Lessons From and Implications to the Marketing of Services," Ambrosetti Group's Chief Executive Seminar (Milan, Italy), March 7, 1995.
- "The Value of Marketing Program," Janssen Pharmaceutica, January 9, 1995.
- "The Virtual University: Research and Action Agenda," The Virtual University Conference, SEI Center, January 12, 1995.
- "Marketing 2000," AIMSE/Wharton Investment Institute, January 13, 1995.
- "Beyond Brand Management," Wharton MBA Marketing Club, January 23, 1995.
- "A New Management Paradigm for the 21st Century Enterprise," Conference of the International Academy of Management, December 9, 1994.
- "Research Priorities in Marketing as Derived From the SEI Center for Advanced Studies in Management Work on Creating Successful 21st Century Enterprises," Doctoral Proseminar, November 16, 1994.
- "Creating a Successful 21st Century Enterprise: Implications for Business and Marketing Theory, Practice, Research and Education," The University of Tokyo, November 4, 1994.
- "State of the World: Trades, Problems and Prospects," YPO Philadelphia Chapter University, The Cloister, September, 1994.
- "Is Your Marketing Obsolete? Implications of the New Marketing Paradigm for Business and Non-profit Organizations," YPO Philadelphia Chapter University, The Cloister, September, 1994.
- "The Value of Marketing: A Research Agenda," Value of Marketing Conference, Stanford University, August 9, 1994.
- "Electronic Commerce: Progress and Prospects," AMA Conference, San Francisco, August 8, 1994.
- "Determining the Value of Marketing: A New Challenge to the Discipline," San Francisco AMA Conference, August 8, 1994.
- "*JMR* Special Issue on Innovation in New Product Development: Best Practice in Research, Modeling and Applications," *JMR* Editorial Board Meeting, San Francisco, August 7, 1994.
- "Entering the U.S. Consumer Durable Markets," Nijenrode Executive MBA Program, August 4, 1994.
- "A New Approach for Estimating the Demand for Interactive TV Products and Services, Interactive Industry 2000: Market Research for the Interactive Television Business," July 28-29, 1994.
- "Creating a 21st Century Enterprise," Poon Kam Kai Institute of Management, The University of Hong Kong, June 16, 1994.
- "Advances in U.S. Marketing and Their Implications to China," Joint faculty seminar of the School of Economics and Management, Tsinghua University and the School of Management, Peking University, June 15, 1994.
- "Toward a New Marketing Paradigm," a faculty seminar at the Hong Kong University of Science and Technology, School of Business and Management, June 14, 1994.
- "Empirical Generalizations in Marketing: Opportunities for MSI Research Program," MSI Board of Trustees Meeting, April 29, 1994.
- "Textbook of the Future: A Perspective From the Virtual University Lab," April 8, 1994.
- "The Impact of Marketing Science on Industry and Academia," The Oscar W. Neuhaus Lecture, Rice University, March 23, 1994.
- "The Challenge of a New Marketing Paradigm," University of Texas at Austin, March 23, 1994.
- "Market Driven Quality" at the Beyond Quality: Organizational Transformation to the 21st Century Enterprise, March 17-18, 1994.

- "The Marketing Challenges for the Philadelphia Orchestra," Presentation to the Board of Trustees of the Philadelphia Orchestra, March 1, 1994.
- "Pharmaceutical Marketing: Emerging Challenges and Opportunities," Pharmaceutical Advertising Council and Wharton Executive Education Conference on Reengineering Pharmaceutical Marketing, February 25, 1994
- "Role of Marketing in the New MBA Curriculum: Lessons from the Wharton Experience," AMA Winter Conference, February 21, 1994.
- "Empirical Generalizations in Marketing: Some Observations," Wharton Conference on Empirical Generalizations in Marketing, February 16-18, 1994.
- "The Value of Pharmaceutical Advertising and Promotion", Coalition of Healthcare Communication Conference, Marketing Conference in an Era of Change, New York October 27, 1993.
- "Advances in Marketing Strategies", Nijenrode University Executive Program, August 6, 1993.
- "Global Consumer Brand Strategies: Problems and Prospects", Seminar for the Business Partners of the Norwegian School of Management, June 11, 1993.
- "Determinants of New Product Success: Lessons from the U.S. and Japan", Faculty and Ph.D. students seminar at Erasmus University, June 10, 1993.
- "Getting the Most out of Benchmarking", Board of Directors of Wharton=s Alumni Association, May 14, 1993.
- "Determinants of Successful Entry to the U.S. Market", Wharton-Recanati Program, May 12, 1993.
- "Marketing Opportunities in Japan and East Asia," with Hotaka Katahira and the International Forum Participants, April 18, 1993.
- "Toward a New Marketing Paradigm: Implications for Marketing Departments," Advisory Board Meeting of the Wharton's Marketing Department, April 8, 1993.
- "The New Wharton MBA Curriculum", Faculty seminar at Erasmus University, March 10 and June 10, 1993.
- "Marketing Science at a Crossroad", Inaugural Presentation as the first holder of the Unilever-Erasmus Marketing Professorship, Erasmus University, February 18, 1993.
- "The Strategic Impact of Market Driven Quality", with Paul R. Kleindorfer. ORSA/TIMS, San Francisco, Session on Customer Satisfaction and its Role in Global Competition. November, 1992.
- "Issues and Advances in New Product Development and Management: A U.S. Perspective", Advanced Industrial Marketing Strategy Seminar, September 18, 1992.
- "The Market Driven 21st Century Enterprise: Implications for Law Departments", Presentation at the SmithKline Beecham U.S. Law Department Conference on Customer Focus Continuous Improvement, April 28, 1992.
- "New Product Development: Problems, Advances and Prospects", Wharton's Advanced Industrial Marketing Strategy, March 19, 1992.
- "Preparing for the 21st Century Today", Securities Industry Institute, 40th Anniversary Program, March 1992.
- "The Successful 21st Century Enterprise as Customer Driven: Implications for Marketing and Management Science", University of Texas at Austin, Faculty Colloquium, February 1992.
- "Time Based Competition: Implications for Marketing Science", INSEAD Faculty Presentation, January 1992.
- "A New Management Paradigm for Israel's Schools of Management: Lessons from the New Wharton MBA Curriculum" Conference on the Future of Management Education in Israel, Jerusalem, Israel, October 16, 1991.
- "Designing & Implementing an Innovative MBA Program: Lessons from the Wharton Experience", Conference on the Future of Management Education in Israel, Jerusalem, Israel, October 16, 1991.
- "How to Develop Products More Often and Get Them to Market Faster: Guidelines for Functional Management", Ambrosetti Group, Milan, Italy, May 9-10, 1991.
- "Management in the 21st Century: Implications to the Fragrance Industry", Summit 2000 Conference of the Fragrance Association, April 8, 1991.

- "Marketing Research and Modeling for the 21st Century Enterprise: The Emerging Crisis and its Challenges", Management Science Roundtable, February 17, 1991, Redington Beach, FL.
- "Inducing Creativity and Innovation in Large Bureaucracies: Lessons from Marketing", RGK 4th International Conference on Creativity and Innovative Management, August 8-10, 1991, Los Angeles, CA.
- "Concept Testing for Generating and Evaluating Positioning Strategies", PDMA Positioning Conference, March 6, 1990, New York, NY.
- "Research Priorities in the Information Technology Area", MSI, Information Technology Steering Group, January 18, 1990.
- "Building the 21st Century Corporation Today: A Marketing Perspective", MASTERSHIP, January 9, 1990, Los Angeles, CA.
- "Globalization: Opportunities for Innovative Research and Modeling", UCLA, January 9, 1990, Los Angeles, CA.
- "Marketing Skills and Strategies for the 1990's", Pfizer International Marketing Managers, December 1989, Lambertville, NJ.
- "Increasing the Effectiveness of Your New Product Development", Indian Institute of Technology, November 1989, Bombay, India.
- "Competitive Advantage Through Strategic Marketing", Contel Corporation, October 1989, Lake of the Ozarks, MO.
- "Management in the 21st Century", Wharton Advanced Management Program, September 1989, Philadelphia, PA.
- "The Contributions of Strategy and Other Business Functions to the Creation of Innovative Marketing Knowledge", AMA Marketing Educators Conference, Chicago, August 1989.
- "The Current and Potential Contributions of Strategy and the Other Business Functions to the Creation of Innovative Marketing Knowledge", AMA Summer Conference, August, 1989, Chicago, IL.
- "Selecting and Negotiating International Strategic Alliances: Applications of the AHP", TIMS Osaka, July 1989.
- "Improving the Effectiveness of the Industrial New Product Development Process: Lessons from Industry – The AS 400 Case", 16th International Research Seminar in Marketing, La Londe les Maures, France, May 19, 1989.
- "Strategic Marketing", Studio Ambrosetti AP Milan Group, May 17, 1989.
- "Developing and Launching New Products: Costs, Risks, and Conditions for Success", Studio Ambrosetti, AF Marketing Group, May 16, 1989.
- "The Marketing Challenge for Top Management:, Promises and Pitfalls of Expert Systems," University of California, Irvine, April 27, 1989.
- "Management in the 21st Century: Implications for Management Research and Education," University of California, Irvine, April 27, 1989.
- "The Globalization of Management Education: Options, Trade-Offs, and an Agenda for Implementation", AACSB Annual Meeting, April 18, 1989, Montreal.
- "A Contrarian Approach to Effective Pricing", The Pricing Institute, March 7, 1989, New York.
- "Achieving Competitive Advantage in Marketing", Securities Industry Association, March 6, 1989, Philadelphia, PA.
- "Courtyard by Marriott: Designing a Hotel Facility with Consumer Based Marketing Models", presented to the TIMS/AMA seminar Marketing Science: A Developmental Tool for Management Scientists, New York, November 16, 1988.
- "Technology and Marketing-Driven Global Portfolio of R&D Projects", with Robert DeLuccia presented at the ORSA/TIMS Joint National Meeting in Denver, Co, October 26, 1988.
- "Pitfalls and Challenges of Global Marketing", Second International Conference on Marketing and Development, Karl Marx University, Budapest, Hungary, July 12, 1988.
- "Information Technology and Marketing Strategy" with Eric Clemons, presented at IS, TC and Strategy Plenary Meeting, January 1988.
- "A New Challenge for Human Resource Management: Incorporating a Marketing Perspective", The Lauder Institute: International Human Resource Conference, December 1987.

- "Advances in Marketing Strategy and Research", Wharton Alumni Club, Milan, October 1987.
- "Marketing and Corporate Strategy", Studio Ambrosetti, Milan, October 1987.
- "Marketing for Financial Institutions", Studio Ambrosetti, Milan, October 1987.
- "Proactive Marketing Research and Modeling: Pitfalls and Prospects", PMRG Fall, 1987 meeting, Captiva Island, Florida, October 1987.
- "Turning Salespeople and Non-Marketing Executives into Marketing Strategists", AMA Marketing Educators' Conference, Toronto, August 1987.
- "International Marketing", Wharton Alumni Club, Toronto, August 1987.
- "Marketing and Technology: Progress, Problems, and Prospects", European-American Symposium, Enschede, The Netherlands, June 29-July 1, 1987.
- "Second Generation Expert Systems: Incorporating Enhanced Explanation and Learning", Marketing Science Conference, Jouy-en-Josas, France, June 24-26, 1987.
- "Market Segmentation: Shortcomings and Opportunities", 1987 Attitude Research Conference, West Palm Beach, Florida, May 1987.
- "Advances in Marketing Research and Modeling", Studio Ambrosetti, Milan, December 1986.
- "Advances in Management Strategy: A Marketing Perspective", The Institute of Management Consultants, March 1986.
- "The Marketplace of the Future: Global Consumers", Advertising Research Foundation 50th Anniversary Conference, March 1986.
- "A Marketing Perspective for Public Management: Research Implications", Wharton Department of Public Policy and Management Brown Bag Seminar, January 1986.
- "Advances in Global Marketing Strategy: Concepts, Methods, and Applications", International Symposium on Recent Developments in Management Research, Helsinki, Finland, 1986.
- "Expert Systems in Marketing", TIMS October 1986 Conference, Miami.
- "Advances in Portfolio Analysis and Strategy", Chinese Management Association, Taipei, July 1985.
- "New Development in Marketing and Planning", WEFA/Lauder Seminar, June 1985, Tokyo, Japan. Sessions on Advances in Market Segmentation, Product Positioning and Portfolio Analysis and Strategy.
- "Advances in Portfolio Analysis and Strategy", University of Illinois, Theories of Marketing Practice Conference, May 1985
- "Micro Computers in Marketing", Marketing Science Conference, March 1985.
- "Global Marketing Strategies", New York University, 1985.
- "Diffusion Models: The State of the Art", ASA conference, 1984.
- "Management Education in a Global Context", University of Pennsylvania Conference on Management Education and Foreign Languages, December 1984;
- "Generating and Evaluating Industrial Marketing Strategies Using the AHP", TIMS Conference, November 1984;
- A Innovation Diffusion and New Product Forecasting", TIMS Conference, November 1984;
- "Foreign Market Entry and Import Protection Strategies", Israel Institute of Management, October 1984.
- "The Contribution of Consulting to the Consumer Research Discipline", ACR conference, October 1984.
- "The CEO and the Board", Strategic Management Conference, October 1984.

PROFESSIONAL AFFILIATIONS AND AWARDS

Professional Affiliations

1. Fellow of the International Academy of Management (1989-), Vice Chancellor for the Americas, 1996
2. Academy of International Business
3. American Marketing Associations
4. American Association for Public Opinion Research

5. American Psychological Association, Division of Consumer Psychology (Div. 23)
6. Association for Consumer Research
7. International Communication Association
8. Product Development and Management Association
9. Psychometric Society
10. Strategic Management Society
11. INFORMS – The Institute of Management Sciences
12. The Market Research Society (London)

Professional Awards

1. Honorary Degrees

M.A. Honors, University of Pennsylvania, 1971

2. Awards

- The Paul D. Converse Award, 1996.
- American Marketing Association/Irwin Distinguished Educator Award, 1993.
- First Faculty Impact Award, Wharton Alumni Association, 1993.
- First Runner-Up in the 1988 Franz Edelman Award for Management Science/Achievement.
- The 1985 Charles Coolidge Parlin Award.
- Elected as the 1984 member of the Attitude Research Hall of Fame.
- Delivered the 13th (1981) Albert Wesley Frey Lecture, University of Pittsburgh.
- My *Product Policy* book won the 1979 Book of the Year Award given by the editors of Expansion (Mexico).
- Winner of two Alpha Kappa Psi Foundation Awards for the best article published in the Journal of Marketing in 1973 and 1976.
- Runner up of the 1983 William O'Dell Award for "the article published 5 years earlier in JMR which stood the test of time and made the most significant long run contribution to Marketing Theory, methodology and practice".
- Winning paper (with Paul E. Green) of American Psychological Association Division of Consumer Psychology, 1972 Research Design Competition.
- A finalist (top 5) for the 1980 Wharton Award for teaching excellence.

3. Citations

- Third highest ranked Marketing Scholar in the University of Maryland's Kirkpatrick and Locke Faculty Scholarship Study, 1985 (based on number of publications, citations, and peer ratings).
- 10th highest ranked marketing Scholar in the Cote, Leong and Cote "Assessing the Dissemination and Utilization of Marketing Research in the Social Sciences: A Citation Analysis Approach", 1990.

4. Research Grants

- National Science Foundation: U.P. Research Grant (Summer 1970);
- General Foods, the Jell-0 Division (1971);
- N.W. Ayer (1972) - (with Paul E. Green);
- Downe Communication, Inc. (1972);
- Lever Brothers (1972) - (with Paul E. Green);
- Thomas Jefferson University Hospital (1973);
- AT&T (1973);
- The Robert Wood Johnson Foundation Clinical Scholar Fund (1974);
- The John and Mary R. Markle Foundation with R.E. Frank (1975-76);
- National Science Foundation (Grant No. 51575-12928) (1975);
- The National Health Care Management Center of the Leonard Davis Institute with Thomas Robertson (1977).

5. Fellowships

- Hebrew University Awards 1959/60; 1964/65; 1965/66;
- Ford Foundation Fellowship 1963/64;
- Owen D. Young: General Electric Fellowship in Marketing 1964/65; 1965/66;
- Bankendorf Fellowship 1964/65;
- Stanford University Fellowship 1964/65; 1965/66.

PERSONAL DATA

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Gladwyne, PA 19035
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Fax: (215) 642-2168

Date of Birth: March 27, 1938

Place of Birth: Haifa, Israel

Citizenship: U.S. and Israel

Marital Status: Married to Vardina Wind, Artist, (BA in Sociology, Hebrew University, 1962, MA in Communications, University of Pennsylvania, 1974); Two children, 32 and 37.

Non-Professional Affiliations:

The Philadelphia Museum of Art – Trustees and Associates (Phila.)
The Institute of Contemporary Art of the University of Pennsylvania (Phila.)
The Museum of Modern Art (New York)
American Craft Museum (New York)
Pennsylvania Academy of the Fine Arts (Phila.)
Whitney Museum of American Art (New York)
U.S. Holocaust Memorial Museum (Washington D.C.)
The Jewish Museum (New York)
Guggenheim Museum (New York)

Illustrative Pro Bono Activities

The Philadelphia Museum of Art. Trustee (1992 -). Lead a trustee committee and the management and curatorial staff of the museum in the development of a market driven strategy, (1990); Member of the Nominating Committee (1999 -)Member of Trustee Committees for Development (1993 - 97), Special Exhibitions (1993 - 95), and Strategy (1997-8). Member of the Corporate Executive board of the Museum since 1996.

University of Pennsylvania Museum of Archeology and Anthropology. Help establish a vision and revenue generation strategies (1999-)

The Philadelphia Orchestra: Advisor regarding the development of Marketing Strategy (1994-97).

The Interdisciplinary Center, Herzliya (Israel), all planning activities and other involvement (as outlined; see page 34).

The Jewish Federation of Greater Philadelphia: Member of the Financial Resource Development Committee, 1990-92.

Operation Independence, Israeli Management School Oversight Committee, 1991- 1992

Military Service:

Completed active duty in the Israeli Artillery Corps. (1956 to 1958).
Second Lieutenant.

October 26, 1999