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Jumpstarting product development and marketing: Application of deconstructive competitive analysis and conjoint measurement to the cosmetic industry

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Abstract

This paper shows how the method of deconstructing current advertising in eye cream products can identify opportunities for the cosmetic product developer and marketer. Through a conjoint analysis study of 124 text concept elements used by current competitors in the category and 24 visuals, the study reveals the elements that persuade consumers and the elements that do not persuade. Three segments emerged from the study – those interested in eye cream but indifferent to communications, those who simply want a product that works (touchy/feely), and those who want to recapture their youth through science and technology. These latter two segments exhibit different preference patterns for products and for communications, suggesting targeted opportunities for new product development and advertising.

Importance of concepts to guide development

Concepts represent blueprints for product developers and marketers. For developers the concept presents the features that the consumer would like to see the product possess. The concept may directly describe those features, or may describe a variety of benefits, from which description the developer must figure out a way to create a product that will deliver. From the marketer's point of view the concept may comprise statements about the product itself, or the reason for buying, or some combination thereof. Both the developer and the marketer have strong interests in creating the best possible concepts for their product in order to ensure commercial success. Concepts guide development and marketing, and thus play a key role.

Developing concepts the traditional way

Although concepts are important to the product success, there is only a moderate amount of information in the literature on creating concepts. Concept development does not necessarily lend itself to academic investigation because often creating concepts is more of an art than a science. Despite some papers that have been written on concept development in terms of advertising (Golden & Johnson, 1982; Lautman & Percy, 1983), most of the research in concepts comes from practitioners in business, who do not necessarily record the steps of their art. Yet, there are some standard ways by which practitioners create these concepts, with these methods often handed down from one practitioner to another, or learned in a non-systematic way by the practitioner involved.

Concepts can be developed in a variety of ways, ranging from the unstructured creative inspiration to the structured approach using various techniques. For the most part concepts are developed through a relatively unsystematic approach, where the focus is on the current problem (e.g., create a product to solve a particular problem or to take advantage of a market opportunity or a new technology). Concepts are written, tested, evaluated for market potential, and then turned over to the R&D product developers to create in the form of actual products.

Value of conjoint analysis in concept development

During the past three decades one structured method for developing concepts has become very popular in the business community. This method is known as conjoint analysis (Cattin & Wittink, 1982; Green & Srinivasan, 1978, 1991; Wittink & Cattin, 1989) In the very simplest of terms conjoint measurement refers to a disciplined method. The researcher follows a set of steps that lead to enhanced knowledge. These steps are: whereby the researcher identifies a set of statements (the raw material of the concept), mixes/matches these statements into combinations, tests these designed combinations among consumers, estimates the contribution of every element to the consumer reaction, and then creates newer and better performing concepts by re-combining winning elements into presumably even stronger combinations.

Conjoint measurement appeared in the technical community in the middle 1960's, in the arcane field of mathematical psychology (Luce & Tukey, 1964). It would have remained fairly obscure except for the recognition by two Wharton professors, Paul Green & Yoram (Jerry) Wind, that conjoint measurement could directly illuminate the algebra of the customer mind, and thus could play an important role in marketing (Green & Wind, 1973). Accordingly, Green & Wind applied the approach to the design of products, and demonstrated that this type of analytic tool could create new products ideas. They launched a field that has had thousands of applications since and indeed represents one of the most popular tools for the market researcher involved in concept and product development.

Conjoint analysis plays a very important role in marketing, and an increasingly important role in R&D. Traditionally, simple methods were used, but certain problems ensued. In the evaluation of benefits for a product consumers can easily rank the benefits to show which are important and which are not. However, it is not clear how much a consumer would trade in a positive benefit for a price, or for a negative benefit. That is, from simple ranking or rating of the elements one does not know how to construct a concept that comprises both good and poor features (good features being positive benefit; poor features being price or side effects of the product that are necessary but not positive). Thus, the conventional rating and ranking does not show the algebra of the mind. In contrast, conjoint analysis shows how consumers react to combinations where presumably these processes are taking place all the time. Through conjoint analysis the researcher easily discovers the trade-offs that a consumer is willing to make. It is only from the reaction to the combination that the research then deduces, in conjoint, what must have been the original utility values to give rise to the answer. Besides providing the algebra of the mind, conjoint analysis also permits the researcher to recombine elements into newer and, presumably, better combinations, and to identify what benefits to add to a concept in order to compensate for other, less positive aspects that the product must incorporate in a commercial environment.

Lack of a large focus in research

A major shortcoming in research is the narrow focus often adopted by researchers in their quest for the perfect, scientifically precise experiment. That is, the goal is to make precise measurements that can be defended against the scrutiny of the scientific community. In conjoint measurement this narrow focus means limiting oneself to a few concept elements, combined into many combinations and tested among a great number of respondents. The individual data behind every one of the elements is very robust because of the large number of individuals participating, but at a cost. The cost is a reduced focus on a limited number of elements. Nature, therefore, is boiled down to the basic ideas. Unfortunately, this is an example of the richness of nature that is eliminated to achieve the elegance of research. It may not work in a complex world, or if it does work then this strategy produces a splendid isolation of the researcher from the reality of the topic being researched.

A more productive approach is to expand the scope of the conjoint study by looking at many dozens or even hundreds of concept elements. Whereas, the typical conjoint study might deal with 12-24 elements, a study comprising hundreds of elements would be far more useful to the researcher. One could investigate different ideas, as well as variations in the expression of the ideas. Patterns could then emerge from the analysis. If an element does well in different expressions then this is a good indication that the basic idea is a stronger performer. If a mode of expression does well, independent of many different basic ideas, then this is a good indication that the expression works well.

An expanded version of conjoint analysis has been used for the past decade by the author and colleagues (Moskowitz & Martin, 1993). This approach has been used commercially and scientifically for a variety of different studies, investigating foods, health and beauty aids, financial services, and public policy. The key to the method, called IdeaMap® is that one can deal with hundreds of elements, but each respondent need only evaluate a few concept elements embedded in concepts. A numerical analysis method imputes the missing element utilities, on an individual basis, using the utilities of the same respondent for elements actually tested. The approach implemented on a personal computer, and later on the Internet, allows each respondent to test totally different combinations of elements. A model is created for each individual, and then the parameters of that model are aggregated across all of the individuals to create a summary result.

Conjoint analysis and the deconstruction of the competitive frame

One of the more novel uses of conjoint analysis is to analyze the competitive frame of communications. In the commercial world the more rationale marketers try to communicate what they believe to be the messages that will attract consumers. These messages combine positioning (reason for buying) and product (features of the product, specific benefits accrued by using the product). An analysis of what works and what doesn't from the existing messages in the marketplace provides the type of competitive intelligence and guidance that both R&D and marketing can use. The conjoint analysis task adds significant value to this exercise because it shows the impact of every one of the communication elements tested, and further allows the researcher to create new and hitherto unused messages by combining (where appropriate) winning messages in the category. Conjoint analysis of the competitive framework cannot, of course, come up with new elements that have hitherto not been used because the focus is on existing elements. However, an inspection of these winning elements may well inspire insight into new ideas, similar to the winners, but available to the company.

The approach for deconstructing the competitive frame appears in Table 1. The steps that are followed require no special capabilities, other than access to the competitive frame, and an analytical approach. Most of the approach is process-oriented, and simply requires concentration on the task, and a broad scope of raw materials with which to work.

Table 1: Activities to deconstruct and then understand the competitive framework

DECONSTRUCT ads to elements. The ads made by those in magazines, on the Internet, at the point of purchase, etc.
EDIT the elements to become declarative statements. Effort must be made to maintain the tonality of the advertisement.
LOCATE elements on semantic scales – a bookkeeping device. The semantic scales are typically 9-point scales. They are not evaluative, but rather descriptive (e.g., more for cosmetic use Vs more for functional use).
RESTRICT elements that cannot appear together in a concept. Restrictions are not necessary, but if some elements flatly contradict each other it is better to restrict them from appearing together.
MIX / MATCH combinations of elements using experimental design. The experimental design typically comprises a set of 20 concepts, in which 12 elements appear in a systematic order. This set of 20 can be combined into two sets (40 concepts, 24 elements) or three sets (60 concepts, 36 elements). The present study used three sets of concept combinations, intertwined to reduce boredom.
TEST combinations among consumers (e.g., by Internet interviews)
ESTIMATE part-worth element utilities, impacts by dummy variable regression (Systat, 1997). The predictors are either 0 (element absent) or 1 (element present).
IMPUTE the utilities of missing elements (untested by a respondent)
SEGMENT customers on basis of impact patterns
IDENTIFY the winning elements
SUMMARIZE the general patterns into an easy to understand set of descriptive 'rules'.
DETERMINE product & positioning direction

Segmentation and recombination

Segmentation refers to the division of the respondents into like-minded groups, based upon a criterion. Often the criteria for segmentation come from large-scale questionnaires in which the respondents profile themselves and their own interests (Wells, 1975). These questionnaires, dealing with a variety of aspects of an individual (goals, lifestyles, emotional needs, etc.) often generate quite large segment groups that apply to an entire lifestyle, rather than to the simple problem at hand (Mitchell, 1983). As a consequence, however, the segmentation becomes inactionable. It is necessary, therefore to work at a more local level, constraining oneself to the topic. Cosmetic eye care, for example, the topic chosen here, does not require a massive segmentation of one's life and aspirations. Rather, the interest should focus on the different segments of consumers with respect to the specific topic. If the developer and marketer can create these segments based upon responses to eye care statements, then it should be possible to identify new product and positioning opportunities that are immediately actionable.

Segmentation methods that deal with the limited topic have been presented by the author in a variety of topic areas, including foods and beverages (Moskowitz & Itty, 2001; Moskowitz, Itty, Shand & Katz, 2002), public policy (e.g., Internet privacy, Moskowitz, Cicacco, Hjelset, Asami & Mame, 2002), and service needs (Moskowitz, Marketo & Rabino, 2002). Health and beauty aids (e.g., toothpaste) also allow themselves to be segmented in this neat and efficient method (Moskowitz, Itty, Shand & Krieger, 2002). The general approach was presented by Moskowitz (1996), based upon methods developed almost two decades ago for investigating the nature of segmented responses to foods

(Moskowitz, Jacobs & Lazar, 1985). The segmentation algorithm uses semantic scales. Each element is located on a set of semantic scales. Every respondent generates a set of utilities from the conjoint analysis. The utilities are plotted against the different semantic scales, on an individual by individual basis. The scatter-plots are then analyzed to identify the location on each semantic scale where the respondent's utilities peak. This analysis generates a profile of optimal levels for the respondent. The full set of respondents generates a matrix. Individuals can be clustered together if their profiles are similar to each other. The approach generates solutions of 2-segments, 3-segments, 4-segments, etc. The method is 'formal', without any interpretation. The researcher must name the segments, typically by looking at the elements that score best for each segment, and then coming up with a descriptive name. The key benefit of the approach is that it produces clusters of individuals with similar profiles to the topic (here eye care), so the data are immediately 'actionable'. Individuals in the same segment are similar to each other in what they like. The researcher can then create new and better concepts for each segment, and know that the combinations will be more targeted because the elements of the concept are similar. The combination will be much more effective for the segment because the elements are higher scoring within a segment, and thus provide an opportunity to attract respondents in the segment far more strongly.

Internet research

In the past five years Internet-based research has begun to increase, both in frequency and in acceptance. Before this rapid increase concerns were raised that somehow the respondents participating in an Internet-based research task might not parallel the typical respondents one ordinarily works with. For the cosmetic industry, where many of the products are up-scale, this concern is not as severe as the concern that arises when the product category is downstream. However, with the increasing penetration of the Internet through the US, and now Europe, concerns are being put aside. Furthermore, sufficient data has accrued from comparative studies to show that results from the Internet parallel results from more conventional procedures. For concept work originally done with the personal computer (e.g., IdeaMap®) there is even less of a concern, simply because the Internet interview is no different than a regular PC based interview. The only difference is that the respondent participates in the privacy of their own home, rather than having to go to a central location. Another difference, not relevant for this paper, is that an Internet PC is subject to bandwidth limitations, so that in many cases one cannot work with videos. This issue will not be relevant here because the stimuli were only text and graphics (see Chrzan & Grisaffe, 1992; Mizuno, 1997)

Scope of the project

The goal of this project was to understand the competitive frame of in-market eye creams messages through the method described above. There is a lot that cosmetic chemists and marketers understand about their product, but there did not appear to be the systematized approach to understanding the competitive frame as a source of new ideas. The project therefore encompassed both an attempt to create a platform for benchmarking a competitive category (methodological part), and an investigation into an emerging market, cosmetic-related eye care (substantive part).

Method

Stimulus development

The 144 text stimuli were created by parsing advertising and promotional material used to describe eye treatments. Promotional and advertising material from each manufacturer were obtained, and then deconstructed to provide the separate phrases. Table 2

shows the list of categories into which the elements were classified, examples of an element from each category, and the source of the particular element. The 24 visual stimuli were obtained from a CD-ROM. Since there are a lot of elements in the study, the benchmarking nature of the results become important, because they can be looked at from the point of view of either the category itself (what does well), or the manufacturer (who does well).

It should be noted that the classification of elements into categories is done primarily for bookkeeping reasons, so that a single concept does not comprise redundant elements, or worse, that the concept comprises elements from the same category that convey different messages and which therefore may be implicitly contradictory. In the analysis all elements are treated separately, so that the categorization is irrelevant to the modeling. Even if the categories were switched, and different elements appeared in a category, the regression model would treat all elements separately. Changing the category structure would change the composition of the test concepts, but not affect the analysis of the elements themselves (which is the real topic for the study).

Table 2: Example of categories, elements, and the source

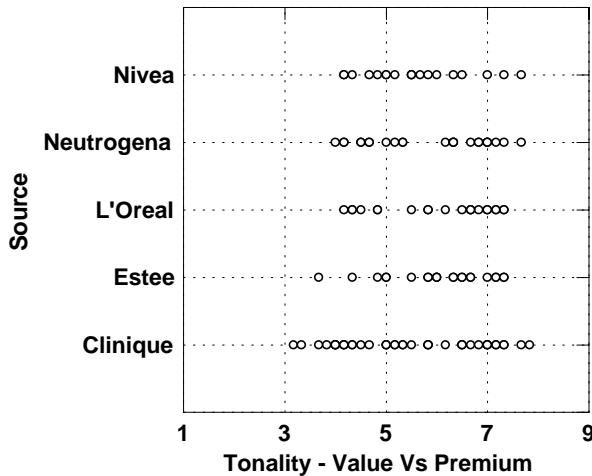
Category & Element	Manufacturer
Appearance - 9 Elements	
Gives the skin everything it needs to stay fresh and well-looked-after	Nivea
Optical Light diffusers diminish the appearance of dark circles	Neutrogena
Cream - 10 Elements	
A lightweight, non-greasy formula	Clinique
The light oil-in-water emulsion is quickly absorbed and gives the skin the ideal moisturizing care	Nivea
General - 9 Elements	
A skin care product that acts in complete harmony with the skin and thus emphasizes your natural beauty	Nivea
Does everything you need an eye cream to do	Neutrogena
Moisture - 13 Elements	
Alleviates dryness	Clinique
Ultra-hydrating eye creme that lifts, tones and smoothes the eye area	Estee Lauder
Nutrients - 14 Elements	
Lipids strengthen skin; optical diffusers scatter light for a softened effect	Clinique
Vitamin A and Pro-Vitamin B5 increase firmness and build moisture levels	Neutrogena
Prevention - 13 Elements	
Combats the numerous factors that affect the look and feel of aging skin	L'Oreal
Even helps prevent future visible skin damage caused by the environment	Clinique
Protection = 19 Elements	
Delivers all the age-resisting power of Retinol - so gently that you can use it every night	L'Oreal
New lift complex strengthens, protects and boosts skin's natural collagen level	Estee Lauder
Skin 11 Elements	
Diminishes the appearance of eye puffs, darkness, fine lines	Clinique
Skin soothers calm the eye area and reduce puffiness	Neutrogena
Soothing 11 Elements	
Dermatologist recommended	Neutrogena
For every skin type, for young and old, for all seasons	Nivea
Technology 15 Elements	
With Pro-Retinol A, it noticeably reduces the appearance of lines and wrinkles	L'Oreal
Renews elasticity by rebuilding natural collagen	Clinique
Visuals 24 Elements	
Older man with beard in woods	CD ROM
Woman on beach with green jacket	CR ROM

Dimensionalization

An example of dimensionalization results appears in Figure 1. Each of the circles represents a specific element. The manufacturer is on the left. To the degree that one manufacturer locates its messages in a specific part of the semantic scale it is possible to conclude that the strategy is to convey this type of message. From this exercise, conducted with eight respondents (matched to the final sample) it become possible to locate each of the concept elements on a semantic differential scale. Besides showing the tonality of messages from each manufacturer (since one can look at how the specific manufacturer profiles for all the messages tested), dimensionalization serves three distinct purposes:

1. Enables utility estimation of elements untested, at an individual by individual level, using the method described by Moskowitz & Martin (1993).
2. Enables segmentation, following the method described by Moskowitz, Jacobs & Lazar (1985)
3. Provides the tonality of an element, which can guide concept optimization. Optimization of concepts combines elements into coherent wholes. If the tonality of the elements are similar, then the concept tonality as a whole should pull in one direction. On the other hand, if the tonalities of the elements differ, then the elements may go in different directions. Each of the elements may be highly acceptable, but the concept itself will not present a coherent message.

Figure 1. Dimensionalization /results



Creating concepts by experimental design

Experimental design refers to the systematic combination of elements in such a way that each element appears as a free agent. Experimental design has been an accepted procedure for product research (Box, Hunter & Hunter, 1976) because it enables the researcher to identify the contribution of every element, and create models describing the relation between the ingredient and the response. For concept work the notion of experimental design is equally valuable, as was discussed for conjoint measurement. A sense of the experimental design can be obtained from Table 3, which shows the concept structure for the first six concepts, and with four variables (A,B,C,D). Each variable can either appear in the concept or not appear, and can take on one of three values.

Table 3: Structure of the concepts used in the study:

	Category A	Category B	Category C	Category D
Concept				
1	1	0	0	2
2	3	3	0	1
3	0	0	1	3
4	1	3	3	0
5	3	2	3	3
6	3	1	0	0
7	0	0	2	2
8	0	2	2	1
9	1	1	1	0
10	3	0	2	0

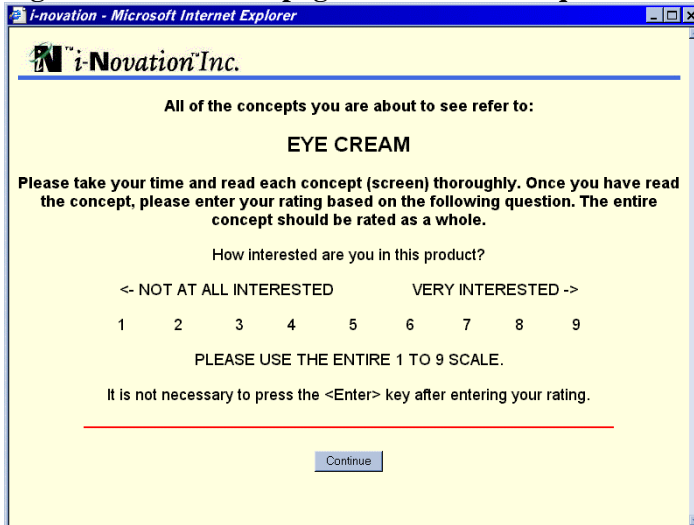
The Internet interview

The Internet-based interview was conducted in early January, 2001. The respondents were invited to participate by an e-mail invitation sent by a third party panel. A total of 2,000 invitations were sent, 210 respondents clicked through the e-mail invitation and 109 completed the survey. Thus the data to be presented here comes from the results of the 109 respondents.

The respondents who opted to participate clicked on a link and were taken to the web-site. They were greeted with a welcome page, and then by an orientation page that told them the nature of the concepts (see Figure 2). The pages were designed to reduce the amount of effort that the respondent had to exert. For instance, the respondent did not have to push the 'enter' button when rating a concept, but did have to push the "enter button" when completing a classification questionnaire immediately afterward.

The entire interview required about 15-18 minutes, which approaches the maximum length of interview that the authors have found to work. The respondents were motivated by a chance to win monetary prizes in sweepstakes. This reward suffices to motivate many respondents, although it may not work as well with very high-income individuals.

Figure 2: Orientation page for the Internet questionnaire



Results

Panel composition

Table 4 presents some summary data about the respondents. The invitation went to an equal distribution of younger and older respondents. About 60% of the respondents, however, were in the older group. As Table 4 shows, the respondents use eye cream products for the same reasons (reduces lines, prevents lines), albeit in different proportions. Furthermore, the two age groups show different patterns of information seeking, with the younger respondents relying more on personal interactions with people they trust, and older respondents relying more on more commercial sources. The question about 'source of information about cosmetic eye care' shows an important distinction between the types of individuals, and deserves further study

Table 4: Partial profile of the Internet respondent panel, by total panel, by two age breaks, and three concept response segments

	Total	Age 28-39	Age 40+	Seg1	Seg2	Seg3
Base	109	43	66	43	35	31
Respondent Age						
28-39	39	100	0	40	31	48
40+	61	0	100	60	69	52
Why Use Eye Cream						
Reduces	84	79	88	84	77	94
Prevents	82	88	77	77	83	87
Source Of Information About Cosmetic Eye Care						
Merchandising at the store	55	44	62	56	66	42
Personal recommendation	31	37	27	33	20	42
Advertisement	29	26	32	33	23	32
Doctor	28	33	24	19	31	35

Analysis of individual data to create a model

The key output of the study is an additive model showing the part-worth contributions of the different elements to respondent interest in eye creams. Prior to creating the individual-level model, the data were transformed. Ratings of 7-9 were transformed to the value '100' to denote interest, and ratings of 1-6 were transformed to '0' to denote lack of interest. The model is then created using the method of dummy variable regression. Each respondent only evaluated 36 of the 148 elements, and thus the remaining elements were imputed by methods previously described (Moskowitz & Martin, 1993). Every respondent evaluated a different set of elements within the 60 concepts.

The additive model from the dummy variable regression can be expressed by the following equation:

$$\text{Rating} = k_0 + k_1(\text{Element \#1}) + k_2(\text{Element \#2}) \dots K_{36}(\text{Element36})$$

The additive model is created for each respondent. The additive constant, k_0 , is the conditional probability that a respondent would be interested in the eye cream if no element were to be added to the basic constant. The additive constant is a purely computed parameter, but it can be used as a measure of basic interest. It is a good baseline. The coefficients, $k_1 \dots k_{36}$ and the remaining estimated coefficients, $k_{37} \dots k_{148}$ are the conditional probability values that a concept will go from not interesting to interesting (viz., rating of 1-6 to a rating of 7-9) if the element appears in the concept. The coefficient adds to the additive constant to generate a total level of interest. Norms for the coefficients are the following:

- a. >15 = extremely important (viz., an additional 15% or more of the respondents say that they would like the eye cream if the element were present)
- b. > 10 = very important
- c. > 5 = significant, and increasingly important
- d. > 0 = adds to interest, but not particularly important
- e. <0 = detracts from interest, and should not be considered in the concept

Table 5 shows the additive constant for the different subgroups and the additive constant for three segments that emerged from the pattern of utilities. The segmentation will be addressed below. The coefficients vary within a narrow range, 36 - 43, denoting a moderate level of interest in the eye cream idea, without the benefit of concept elements. The older respondents (ages 40+) show a greater interest than do the younger respondents (ages 28-39). Reason for using eye cream has no impact on the additive constant. The source of information does make a difference. Those who rely on advertising for their information are less predisposed than those who rely on personal recommendation, and surprisingly, on merchandising information are when they shop.

Table 5: The additive constant for the key subgroups

	Constant
Total Sample	39
Age	
Age28-39	36
Age 40+	41
Reasons For Use	
Reduces	43
Prevents	44
Source Of Information	

Personal Recommendation	47
Merchandising	47
Advertising	37
Doctor Recommendation	43
Segment	
Segment 1 – Non responsive to communication	58
S2 – Make it work ('touchy/feely')	32
S3 – Recapture youth through science	21

What are winning elements

The key result from a competitive analysis is the performance of the different in-market communications. A secondary result is the knowledge regarding which particular manufacturer offers these statements. Table 6 shows the list of winning elements. There are a couple of key results from this table:

1. No consistent superiority: No manufacturer does consistently well. There are many elements offered by the different manufacturers. Not all of them do well.
2. Modest performance for the total panel: Even among the winning elements, almost nothing performs superbly. This may result from either mediocre elements at best (unlikely), or the existence of segments in the population whose points of view differ, whose acceptance patterns differ, and therefore who balance each other out (more likely).
3. Poor elements are just irrelevant, not truly poor: Even among the losing elements, the lowest utility value is -1 , sufficiently close to zero to mean that the elements that lose simply add nothing at all. This has been seen in other deconstruction studies as well (Moskowitz, Itty, Shand & Krieger, 2002), and signifies that the corporate process of concept and communication development tends to weed out very poorly performing elements. It also tends to weed out possibly very strong performing elements as well, although that is less clear.

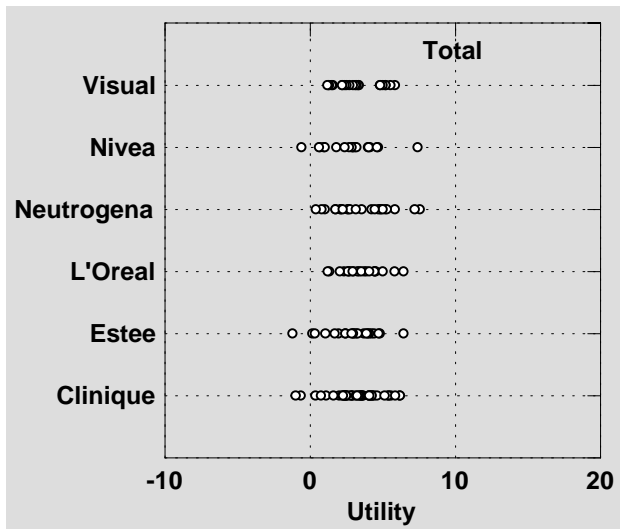
Table 6: Winning and losing elements for eye cream for the total panel

	Manufacturer	Total
Additive constant		39
Winning Elements		
Hypo-allergenic, fragrance free, and non-comedogenic - so it won't clog pores	Neutrogena	8
Contains suppleness that helps skin stay looking young and naturally beautiful	Nivea	7
Dermatologist recommended	Neutrogena	7
Glides on – instantly diffusing light away from fine lines, wrinkles and shadows with its exclusive soft-focus technology	Estee Lauder	6
De-puffs; minimizes appearance of dark circles	Clinique	6
Leaves no residue	Clinique	6
Comforts and smoothes the skin	Clinique	6
PABA-free SPF 15 sunscreens help prevent premature signs of aging	Neutrogena	6
Delivers all the age-resisting power of Retinol - so gently that you can use it every night	L'Oreal	6
Alleviates dryness	Clinique	6
Losing Elements		
Helps promote cellular activity and supports the regenerative process in mature skin	Nivea	-1
Our newest moisturizer utilizes mnemonic technology to enhance skin's ability to hold moisture	Clinique	-1
Anti-oxidants help fight free radicals	Clinique	-1
Natural anti-oxidants, including green tea, rosemary extract and Vitamins C and E	Estee Lauder	-1

Performance of competitor companies – who is doing it right

An analysis of all of the communications that can be traced to different manufacturers suggests that all of them offer elements that perform in the middle range. Figure 3 shows the distribution of element utilities by manufacturer. It is clear that the concept development strategies for all of these companies have successfully weeded out poor performing elements. However, it is also clear that the elements never rise above +8, and most of them cluster around +4 to +6, not particularly strong performing elements.

Figure 3: Distribution of utility values for the different eye cream manufacturers. Each point is a different concept element. The results are for the total panel



Key Subgroups – Age

The additive constant showed differences by age, with the older respondents more positively disposed to the product than the younger consumer (constants of 41 Vs 36, respectively). One can also sort the elements by winners for the younger versus the older respondents in order to identify the strong performing elements. The younger respondents respond strongly to messages that promise protection in the future, whereas the older respondents are interested more in products that reduce the current puffiness around the eyes. It is clear from this analysis that the age of the respondent plays a very strong, but not necessarily polarizing role in the utility values (and thus the impact) of the different messages. Furthermore, the winning elements distribute across manufacturers, meaning that the objectives of the manufacturers are not directed specifically towards the different age groups. No manufacturer excels at one age group alone. Finally, the older respondents are far more responsive to the messages, and find many more of them far interesting. This increased interest among the older respondents makes sense when one realizes that as a woman ages the eye care cosmetics become increasingly relevant. The change in focus of winning elements means that either the advertising should change to accommodate these age groups, or that perhaps a different organizing principle may emerge that transcends age groups (See Table 7).

Table 7 – Winning elements for two age groups, younger and older

	Source	Age 29-39	Age 40+
Additive constant		36	41
Younger (Age 29-39)			
Anti-oxidants, Vitamins A, C & E, help prevent future damage	Neutrogena	8	3
Even helps prevent future visible skin damage caused by the environment	Clinique	8	2
Hypo-allergenic, fragrance free, and non-comedogenic - so it won't clog pores	Neutrogena	8	7
Dermatologist recommended	Neutrogena	7	7
PABA-free SPF 15 sunscreens help prevent premature signs of aging	Neutrogena	7	5
Contains suppleness that helps skin stay looking young and naturally beautiful	Nivea	7	8
Older (Age 40+)			
Diminishes the appearance of eye puffs, darkness, fine lines	Clinique	-2	9
Soap-free, alcohol-free formula that gently removes impurities without drying to leave skin soft and revitalized	L'Oreal	4	8
Contains suppleness that helps skin stay looking young and naturally beautiful	Nivea	7	8
De-puffs; minimizes appearance of dark circles	Clinique	4	8
Hypo-allergenic, fragrance free, and non-comedogenic - so it won't clog pores	Neutrogena	8	7
Lipids strengthen skin; optical diffusers scatter light for a softened effect	Clinique	2	7
Skin soothers calm the eye area and reduce puffiness	Neutrogena	-6	7
Dermatologist recommended	Neutrogena	7	7
Helps erase the looks of lines as it tightens	Clinique	2	7
Delivers all the age-resisting power of Retinol - so gently that you can use it every night	L'Oreal	4	7
Leaves no residue	Clinique	5	7
Helps minimize dark circles and shadows	Clinique	-2	7
Leaves a silky, smooth finish - an ideal base for makeup	Estee Lauder	0	7
Glides on - instantly diffusing light away from fine lines, wrinkles and shadows with its exclusive soft-focus technology	Estee Lauder	6	7
Alpha-Hydroxy Acids slough away dull, damaged skin to ease away fine lines and blotches	Neutrogena	1	7
Clinically proven formula contains Retinol to work deep within the skin's surface where wrinkles develop	Neutrogena	3	7

Concept response segments, and the opportunity for new products and positioning

The big payoff from systematic deconstruction of the competitive frame comes from the identification of new segments (Moskowitz, 1996). The utility values are far higher, often as high as 15-20, signifying a strong, impactful communication. Furthermore, the differences between the segments can often be dramatic on an element by elements basis as shown by Table 8. The elements liked by a specific segment appear to be many and coherent. Segment 1, comprising 43 individuals does not respond to any of the elements. This segment likes the idea of an eye cream (additive constant is 58), but no elements do well in increasing the basis acceptance. Some of the elements decrease acceptance, but not by much. This group is insensitive to communications. Segment 2, with 35 respondents, is far less interested in the basic idea of the eye cream (additive constant is 32). On the other hand, this segment strongly reacts to the basic benefits. They are interested in the product as a useful cosmetic aid, and react strongly to authority (e.g., dermatologist recommended). They want the product to work, but aren't interested in looking younger. They want

emotional reassurance (so-called ‘touchy/feely’). In contrast, Segment 3 (base size of 31; low basic interest of 21 for their additive constant) is quite interested in the technology. They appear to want scientific assurance that the product will work, and they want it to work to restore their youth. Basically, they want science and magic.

Table 8: Winning elements for Segment 2 (make it work) and Segment 3 (restore youth through science and technology)

	Source	Tot	S1	S2	S3
Base Size		109	43	35	31
Additive constant		39	58	32	21
Segment 2 – Want It to Work (‘Touchy/Feely’)					
Dermatologist recommended	Neutrogena	7	-2	20	5
Hypo-allergenic, fragrance free, and non-comedogenic - so it won't clog pores	Neutrogena	8	0	16	9
Contains suppleness that helps skin stay looking young and naturally beautiful	Nivea	7	-1	16	9
Use in the morning and night, under eyes and on the lids	Clinique	3	-5	15	1
Leaves no residue	Clinique	6	-2	14	9
Leaves skin smooth, supple and comfortable	Estee Lauder	5	-3	13	6
Absorbs quickly	Clinique	4	-3	13	2
Lightweight, non-creep, cream/gel formula actually helps hold eye makeup in place	Clinique	3	-2	13	-2
A lightweight gel formula	Clinique	4	-3	13	2
Comforts and smoothes the skin	Clinique	6	0	12	7
Glides on - instantly diffusing light away from fine lines, wrinkles and shadows with its exclusive soft-focus technology	Estee Lauder	6	-1	12	10
Visibly reduces the signs of sun damage, such as wrinkles, fine lines, and age spots	Neutrogena	5	-1	12	6
A lightweight, non-greasy formula	Clinique	3	-4	12	2
With your face you meet the world, up-front and unprotected, exposed to wind, weather, and sun	Nivea	5	-3	12	7
Delivers all the age-resisting power of Retinol - so gently that you can use it every night	L’Oreal	6	-4	12	13
Diminishes the appearance of eye puffs, darkness, fine lines	Clinique	5	-4	12	9
Highly effective...yet gentle enough to use twice daily	L’Oreal	4	-3	11	7
PABA-free SPF 15 sunscreens help prevent premature signs of aging	Neutrogena	6	-1	11	10
Leaves a silky, smooth finish - an ideal base for makeup	Estee Lauder	4	-3	11	7
Segment 3 – Youth through science & technology					
Vitamin A and Pro-Vitamin B5 increase firmness and build moisture levels	Neutrogena	2	-3	-6	19
Unique complex (including botanicals) brightens eye area and strengthens skin structure	Clinique	5	-3	4	18
Smoothes visible lines and wrinkles with Pro-Retinol A	L’Oreal	5	-3	2	18
Replaces lost moisture by duplicating the water and oil balance naturally occurring in the skin	Clinique	2	-2	-5	18
Alpha-Hydroxy Acids slough away dull, damaged skin to ease away fine lines and blotches	Neutrogena	4	-2	0	18
Multi-vitamins and special moisturizers soften and smooth skin	Neutrogena	4	-2	-1	18
A completely oil-free, skin-balancing formula firms skin with Par-Elastyl	L’Oreal	4	-1	-3	18
State-of-the-art pure Retinol technology for your skin, refined and perfected	L’Oreal	2	-4	-4	17
Measurably increases skin's firmness	L’Oreal	4	-2	1	17
Ultra-hydrating eye creme that lifts, tones and smoothes the eye area	Estee Lauder	4	-2	2	17

Daily multi-vitamin facial treatment that improves the look and feel of your skin	Neutrogena	4	-1	-3	17
Lipids strengthen skin; optical diffusers scatter light for a softened effect	Clinique	5	-3	5	17
Clinically formulated to replenish the skin, and give it the drink it needs	Clinique	3	-2	-4	17
Packed with the age-resisting power of Retinol - the purest form of Vitamin A	L'Oreal	3	-3	-2	17
You'll see lines and surface wrinkles diminish as your skin takes on a 'years-younger' look	L'Oreal	3	-5	0	17
So you don't have to live with visible signs of aging	L'Oreal	3	-3	-1	17
Unique gel formula helps restore, repair and reduce puffiness	Estee Lauder	4	-1	-1	16
Helps skin retain moisture, so your skin feels more comfortable, firmer, and lines are less noticeable	Clinique	4	-3	1	16
Contains whey protein and Vitamin C to strengthen skin's natural collagen support structure	Clinique	2	-5	-1	16
Clinically proven formula contains Retinol to work deep within the skin's surface where wrinkles develop	Neutrogena	5	-3	5	16
Intensive moisturizers provide immediate moisture relief and work to rebuild skin's protective barrier	Estee Lauder	1	-3	-7	16
With Pro-Retinol A, it noticeably reduces the appearance of lines and wrinkles	L'Oreal	4	-4	4	15
Whey protein boosts skin's natural collagen production, dramatically reducing the look of existing lines	Estee Lauder	2	-5	0	15
A super-hydrating gel creme that treats the causes of dryness - not just the effects	Estee Lauder	0	-3	-9	15
Dual-firming formula with vitamins and natural botanicals, protects and supplements skin's elastin and collagen for a younger look	Estee Lauder	3	-3	1	15
Combats the numerous factors that affect the look and feel of aging skin	L'Oreal	5	-3	7	15
Contains Melibiose to increase skin's firmness	Neutrogena	0	-3	-8	15
With its Vitamin E and jojoba oil, it ensures a wonderful feeling of comfort	Nivea	3	-3	1	14
Fortified with Pro-Retinol A and Par-Elastyl, firms the delicate eye area and reduces puffiness	L'Oreal	1	-4	-4	14
Helps promote cellular activity and supports the regenerative process in mature skin	Nivea	-1	-6	-7	14
Alpha-Hydroxy Acid reduces the appearance of fine lines and Pro-Vitamin B5 moisturizers	Neutrogena	3	-3	1	14

Performance of visual elements

The final topic in the results deals with the performance of the 24 visuals. The foregoing tables showing element performance suggest that the visuals did not work particularly well for the total panel. None scored about +6. Nor do any visuals work for Segment 1 (non-responsive to communication). Table 9 shows strong performance of visuals by segment. The performance of the visuals changes dramatically when the respondents are divided by segments. Segment 2 (make it work, more 'touchy feely') respond to pictures of women relaxing. In contrast, Segment 3 (restore youth through science and technology) respond strongly to pictures that have women in active roles, women with men, and even a more surrealistic picture (viz., picture of an eye). The differences in responses to visual stimuli is striking, and deserves more study. Such differences have not appeared in such magnitude in other studies using both visual and text, and thus suggest potentially very strong roles of visuals in the concept.

Table 9: Performance of visuals by total panel and concept-response segment

	Total	S1	S2	S3
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	Additive constant	39	58	32	21
	Segment 1 – Non responsive to communications				
VS17	Woman with headphones putting on roller blades	6	0	7	12
VS8	Woman in white robe with cup of tea in her hand	1	0	6	-1
	Segment 2 – Make it work – ‘touchy/feely’				
VS5	Two women sitting together on the grass	5	-1	14	3
VS7	Woman sitting with white towel on her head	6	-3	13	10
VS3	Three women behind table with teapot	5	-1	13	5
VS6	Faces of three models	5	-4	11	12
	Segment 3 – Restore youth through science & technology				
VS19	Woman in gray suit holding bouquet of white flowers	3	-4	-1	18
VS16	Face of woman with short, blond hair, laughing	3	-3	0	16
VS21	Smiling woman in orange sweater and Grey jacket sitting at table	3	-5	0	15
VS1	Old man with beard in woods	1	-3	-6	15
VS13	Woman dressed in robe and turban looking at herself in mirror	1	-4	-3	14
VS15	Face of woman with blue eyes, short brown hair, in white sweater	5	-2	6	13
VS9	Man embracing woman with glass in her hand	5	-3	7	13
VS17	Woman with headphones putting on roller blades	6	0	7	12
VS6	Faces of three models	5	-4	11	12
VS18	Faces of three women smiling and laughing	2	-5	3	12
VS12	Woman at table with flowers looking at herself in mirror	2	-3	0	12
VS20	Smiling woman in green jacket sitting with arms folded	2	-4	0	11
VS2	Eye	1	-3	-2	11

Discussion

On the relevance of conjoint measurement and large arrays of stimulus inputs

A key *leitmotif* of this paper is that conjoint measurement can provide a way to understand the competitive frame, organize information, and thereby help jumpstart development by revealing rules about the way consumers respond to messages in the category. Even with a relatively small base size of 100+ respondents, it is possible to discern different patterns of what makes a message acceptable. Furthermore, by deconstructing the competitive array rather than starting from scratch, the researcher and the marketer can get started efficiently in their quest for understanding without expending undue resources and time in a possible unfruitful ideation project. The data in this paper strongly suggest that a lot can be learned from the competitive frame. Of course, radically new ideas not yet in the marketplace cannot be obtained from such a deconstruction exercise, simple because of the fact that the marketplace does not have any totally new ideas. Otherwise, the ideas would already have been part of the element set for deconstruction.

It might be argued by some that there is no need for a deconstruction of the marketplace because the talented product developer or marketer presumably knows what works and what does not. Certainly the data here show that there are very few elements that ‘do not work’, as might be evidenced from highly negative utility scores. None of the elements go below -1 in their utility value, confirming that the marketplace does not have losing elements. Those losers are eliminated during the course of the marketing exercise. What the market does not possess, however, is very strong winners either. It is more likely that this lack results from a lack of knowledge rather than a lack of effort. Professionals in the market, no matter how loudly they aver the opposite, often do not know what will succeed and what will fail. Furthermore, if they do know, then that should be evidenced by products that appeal to specific segments of the type shown here. It is those segments

(especially Segment 2 and 3) that respond unusually strongly to elements. There is no clear evidence from the deconstruction that any manufacturer has organized the product line that way.

Impact of segmentation

In the world of marketing the notion of a segmented market is now *de rigueur*. Most marketers realize that they deal in a world of individual differences, and that these differences must be understood and satisfied in order for a product to achieve its potential. One of the nagging problems, however, is that the segmentation so often done is inactionable. That is, the segmentation results show that there are different groups of people with different views of the world. The only problem is to translate this segmentation into the appropriate, specific messages. For the case of eye cream it doesn't really matter that there exist different types of individuals with different needs in their life, and different life stages. These groups may differ by age (an easy to market to group), but they may differ primarily by mind-set (a much more difficult group to isolate in the population and thus a difficult market target).

The data from this deconstruction study reveal two clear segments with radically different mind-sets. The key problem, however, is that these two segments divide in such a way that both segments are present in the different easy to reach target segments in the population. Although there may be some preponderance of one segment in one subgroup, by and large the segments appear in every subgroup. This interpenetration of segments in the conventional classification schemes has been the bane of segmentation for many years, because it makes the marketing far more difficult. Development is easy because the winning elements provide the developer with a sense of the features to use in the product. Marketing, however, is difficult because it is hard to isolate these individuals into groups that can be targeted. Two possible strategies are:

1. Simply make one or both products, and advertise both, either together, or alternating. The respondent will select the appropriate product, especially if the messaging is right.
2. Build a more complex model by data mining, which, for new individuals, provides an estimate of which segment they should belong to, given external data about them. This step requires some additional modeling to relate segment membership to other information that one can purchase about the consumer. Such modeling has been done successfully in at least one case (Greene & Moskowitz, 2000), and there is no reason to think that the modeling would not work again. One needs to find the right external variables that can, however, be purchased from a third party data source.

Value of systematized databasing

The data in this study were obtained at only one time period, rather than across several years. For a better system to monitor competition and uncover opportunities the databasing effort must become more systematized. Deconstructing competitors into their components constitutes only one part of the system. The other part is to perform the same type of study year after year, in order to obtain both cross sectional results and time trends. Market researchers are accustomed to this type of data in their 'tracking studies', where they measure awareness and use over time. They use that type of information to determine the change in attitude and in behavior as a function of time, and as a function of interventions, such as advertising and promotions. There is no reason why such discipline cannot be applied to the measurement of the customer mind, using in-market communications as the elements. The results are actionable, and can be traced over time to determine changes in the impact of messages, as well as related to interventions such as advertising campaigns. The

data presented is simply of a different form – reactions to communications rather than answers to attitudinal questions.

Opportunities for product development

The introduction to this paper discussed the possibilities of using deconstructive analysis to create new products. In order to create the new products one has to consider the process of idea development as the combination of pieces that may be already known to the developer. In that case, the new product comprises parts of old products, which may be combined in new ways. To the degree that the researcher has identified many of the key elements in the category it will be possible to create new products by recombining winning elements into new, and thus novel combinations, hitherto unknown. Of course, it is necessary to check the acceptance of the products by independent tests, after the fact, and by so doing validate the findings. However, if the researcher wants to create either new products or the platform for a new product, the approach presented here should certainly work for the initial stages.

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