

# Using the Creative Product Semantic Scale as a Metric for Results-Oriented Business

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The advantages to businesses of using the Creative Product Semantic Scale (CPSS), a reliable, valid instrument that measures *novelty*, *resolution*, and *style*, are presented. The word 'product' is broadly defined to include an idea, proposal, process, prototype, or tangible product. Research shows that the CPSS has helped businesses in testing for marketability, new product design, product improvement and enhancement of advertisements. Future applications of the CPSS include improving the screening of ideas, diagnosis of brand problems, competition analysis, and team processes. A new on-line version of the CPSS provides a convenient method of administration.

Our purpose is to examine how businesses have benefitted in the past and can benefit in the future from a careful analysis of creative products. We begin with a broad overview of the ways in which organizations have typically approached creativity, innovation and new product development. Next, we define creative product analysis, explain the development of the Creative Product Semantic Scale (CPSS), and examine how its use has already helped a wide variety of businesses. We then look toward new applications that can improve products and processes in the future.

## *Overview of Creative Product Development*

Banks, Calvey, Owen and Russell (2002) pointed out that few managers differentiated among the concepts of creativity, innovation and problem-solving, instead seeing these concepts as being inextricably linked. In the same vein, Vissers and Dankbaar (2002) criticized the way in which many organizations have approached innovation, particularly the relationship between creativity (often perceived to be an individual characteristic) and innovation (typically perceived to be an organizational outcome). A common managerial assumption is that creative and uncreative ideas or products can be easily differentiated, which then leads to the problem that 'organi-

zational assessment of creative ideas or products tends to be ignored, and little is known about the dynamics of "newness reception" in organizations' (Vissers & Dankbaar, 2002, p. 31).

Brethauer (2002) noted that new product releases into the market (defined as those launched within the past 5 years) accounted for approximately 45% of a typical company's annual revenues. Unfortunately, he also stated that only a small percentage of launched products are successful in the marketplace. Research-based estimates of the percentage of new product failures vary widely, although the most common estimates range from 35–45% (e.g., Dahl, Chattopadhyay, & Gorn, 1999). Brethauer (2002) indicated that robust design of the product was a critical part of the entire process, and emphasized that it was critical for project teams to check out as many alternative solutions as possible.

Andrews (1975) offered a thorough overview of how creative product development occurs. He discussed many of the problems facing corporations engaged in new product development: high risk, the long lead time from idea to commercialization, the high costs of development, marketing, and advertising, etc. Feldman and Page (1989) noted that the most widely-accepted model of the new-product-planning process had seven stages: 1) exploration 2) screening of ideas 3) business

analysis 4) concept testing, 5) development, 6) testing to determine marketability, 7) commercialization. Feldman and Page compared the new-product planning practices of nine major companies, finding that these firms in general did not follow good planning practices. However, Johne (1989), specifically referring to product innovation firms, disagreed, finding that product innovation firms planned carefully.

Gruenwald (1992) argued for the broadest possible definition of 'new product,' saying it also means a new service or package of services or of products and services. Meyer (2002) also advocated for a wider definition of the word 'product:'

To the new market, your product is more than the item or service that you deliver. Your product includes everything that your customers experience in their relationship with you, every contact with your customers. When your business advertises, sells, issues an invoice, handles complaints, and offers support, you are delivering your product. (p. 165)

We agree that taking a broad view of the term 'product' can provide businesses with a useful method of improvement, particularly when combined with creative product analysis.

## What is Creative Product Analysis?

The creativity literature contains many techniques that may be used during the exploration (idea generation) stage of the new-product-planning process (e.g., Goldenberg & Mazursky, 2002; Hattori & Wycoff, 2002; McMahon & Lane, 2002). However, the literature offers far less guidance for how businesses should select the most promising ideas or products *after* the ideas have been generated. Our own research has attempted to fill this gap by focusing on the creative product.

Susan P. Besemer developed the Creative Product Analysis Model (CPAM; Besemer & Treffinger, 1981). The model is composed of three dimensions or factors that relate to the three most important indicators of creativity in products. Each factor is then divided into categories or facets that further describe the product. The model has been developed and validated with many different types of products over the course of more than 20 years (e.g., Besemer, 1998, 2000a; Besemer & O'Quin, 1999).

The first factor or dimension is *novelty*. This factor includes consideration of new materials, new processes, new concepts and other

elements of newness in the product or the idea. Novelty is typically the first criterion that people mention when they try to describe creativity, but novelty alone is usually not sufficient – considering novelty alone may lead to a product that is just weird or bizarre. For example, Veryzer (1998) found that although novelty was needed, the highest product evaluations by consumers were for those products that had some newness, but were not dramatically different from existing product lines. Radically new products are sometimes too far outside the customer's comfort zone. Gruenwald (1992) pointed out that one of the reasons for product failure was that the product was too innovative and ahead of the market.

The second important factor to consider is called *resolution*, which refers to how well the product does what it is supposed to do (Besemer, 2000a). A product that functions well, that people can understand how to use, that is logical, and that has usefulness and value, is considered to be high in resolution. For example, Frand (1989), who had worked in product development at 3M, emphasized the importance of form and function. He stated that 'we think creativity is at its best when it does not have to follow any set rules and is free to roam, but precisely the opposite is true . . . the successful new business developer is not the one who runs willy-nilly exploring a myriad of opportunities, but one who can find the solution to the problem' (p. 120). Johne (1989) agreed that an important issue in product-innovation firms seemed to be how to channel the creativity of high-ability team members into *useable* ideas that fit with a particular organizational strategy.

The third and final CPAM factor was originally called *elaboration and synthesis*. This factor describes how the product presents itself to the customer. Since many readers and CPSS users have had difficulty understanding the somewhat unwieldy term '*elaboration and synthesis*,' we began the new millennium by renaming this factor '*style*.' This term, however, should not be interpreted merely as denoting a product's being 'stylish' in a fashion-related sense – rather, the *style* dimension considers the product's 'presentation style.' Such presentation values are important in every product area, from consumer goods to highly technical industrial products sold business-to-business. Being able to use the style dimension to enhance perceptions of novelty is one of the 'secret weapons' of the power of Creative Product Analysis.

In *Creating Products in an Age of Style* (in press), Besemer tells the story of a client who works for a company manufacturing automo-

ble components. These are assemblies that are never seen by consumers, unless they know what to look for under the hood. Because the company was trying to produce a product that was of the highest quality at the lowest price, and because the component was not a consumer item, they invested their energies into the engineering of the part to make it work perfectly and be able to be sold at the lowest price possible. In a routine visit to a wholesale distributor, the client was questioned about the unpolished metal surface of the component. 'Your competitor's product looks a lot better,' he was told. 'It might cost a few cents more, but we think the extra quality is worth it.' The engineer was surprised, since he knew that the finish on the components had no bearing on the product's performance, as did the wholesaler. Yet this one factor could affect the success of his product in the marketplace.

Examples like this can be found in many businesses. Another example is in the increasing popularity of highly designed coffee shops such as Starbucks. In her recent book, *The Substance of Style* (2003), Postrel describes how Starbucks Coffee Company has been able to build a business empire by providing this ubiquitous commodity in an atmosphere that suggests hip modernity and comfort. The ability of the customer to customize his or her coffee by selecting different blends, different added flavorings, and varieties of milk, cream and other enhancements can create that exciting plethora of options that is so characteristic of modern life.

In order to operationalize Creative Product Analysis, to make it more usable, O'Quin and Besemer (1989) have further developed a measurement scale, the Creative Product Semantic Scale (CPSS), that contains 55 adjective pairs, each answered on a 7-point response scale. Unlike traditional new-product surveys that are related very closely to the specifics of the product under consideration, the CPSS asks raters to evaluate ideas and products more broadly. The model and the CPSS can be used with any idea or product, because they are aimed at a level of abstraction that is generally higher than that of other consumer surveys that may be used at a particular company. The purpose of the CPSS is to improve judgments made by raters or evaluators, so that they carefully consider all elements of the product (broadly defined as an idea, proposal, process, prototype or actual product). It is not intended to replace existing, more specific instruments, but rather to supplement other forms of product evaluation.

The CPSS offers a 'big-picture' look at product characteristics that is portable across prod-

ucts and businesses. It allows products from different locations or times (or even products from different industries) to be compared to each other. Even more important, the CPSS provides those in the company with a common language to discuss new product designs. The quantitative nature of the rating process helps managers meet their needs for accountability. At the same time, it can help designers understand that their concerns are being recognized. Overall, snap judgments are reduced, and decision-making about new ideas or new products becomes more solid than the 'gut-feeling' basis that is sometimes used (Feldman & Page, 1989, p. 11).

In order to constantly improve and fine tune the CPSS itself, we've moved away from the unwieldy paper forms and hand scoring that typified the early days of our product research to a more up-to-date approach to collecting data. Now authenticated users can access the CPSS online from the *ideafusion.biz* website. When a product's ratings are completed online, the data are automatically analysed and web charts with graphic representations of the values of each of the nine subscales are created from dynamic data. The chart, or product profile, along with standard descriptive statistics, can be saved to the desktop for future reference. The application provides options for single users (who might want to evaluate the designs of an employee, for example) or multiple users (for consumer research).

Now that we have described the CPSS and summarized the careful methods by which it was developed, we turn to the research literature. The CPSS, and variations of this assessment tool, have been used successfully in numerous studies in marketing, design, product improvement, and advertising.

## How Has Creative Product Analysis Helped Businesses?

### *Testing for Marketability*

Andrews (1975) noted that different market segments may evaluate products differently. Andrews and Smith (1996) indicated that, despite the importance of creative marketing programs, relatively little is known about factors that promote or inhibit the production of such programs. These authors studied product managers chosen from the American Marketing Association's membership; respondents were asked to concentrate on a single product for which they had been highly involved in developing the most recent marketing program. Andrews and Smith (1996) used the

CPSS as the starting point for their measure of marketing program creativity. They used seven items from *novelty* as one measure of creativity, but chose to use a 3-item measure they called 'meaningfulness,' of which 2 items were from the *germinal* subscale of the CPSS. Respondents were asked to describe their company's most recent marketing program using the adjectives.

Andrews and Smith (1996) also collected additional data from consumers, by providing brief written descriptions of the marketing programs. The written statements described the actions that would be taken in the coming year to market the product in question (e.g., changing the product itself, changing the packaging, changing the distribution, using coupons and other promotions, etc.). After reading the description of the marketing program, consumers rated its novelty and meaningfulness using almost the same format as did the product managers themselves. Results showed that marketing program creativity was affected by individual variables (both intrinsic motivation and willingness to take risks had a positive impact on marketing program creativity) and by external variables (working under time pressure had a negative effect). Their study showed that the CPSS (even its portions) could be helpful in identifying factors that promote or inhibit the effectiveness of creative marketing programs.

In another study related to marketing success, Besemer (2000b) used the CPSS to examine its ability to predict willingness to buy. Students rated four different chairs using the CPSS, and also completed questionnaires indicating their willingness to purchase each chair. Results showed that the participants chose comfort and familiar style over novelty. Dimensions of the CPSS varied in their relationship to purchase intention. Raters who evaluated three novel chairs and one traditional chair strongly preferred the traditional one. Participants' scores showed that they could differentiate among the four options, and that they preferred the more familiar one. This sample, which was composed of students in state colleges in the SUNY system, seemed to mirror findings offered by Veryzer (1998) and others. 'Don't surprise me or I'll run the other way,' the participants seemed to say. This is an ironic twist to creativity researchers who often hold personal biases in favor of novelty. Of the nine facets of the CPAM, the elegant facet of the *style* factor was an important predictor for two of the three novel chairs, but *resolution* variables also contributed to the variance in all of the novel chairs. Besemer concluded that *novelty* alone does not provide sufficient motivation for the average con-

sumer to buy a product. Instead, perceived value and demonstrated elegance are more important than novelty in predicting purchase decisions.

Im and Workman (2004) examined creativity as a mediating factor between market orientation and new product success. Their model proposed that market orientation was an antecedent of creativity. They studied both new product creativity and marketing program creativity. Their contention was that 'a creative firm that provides unique and meaningful products and programs will meet the changing needs of consumers by generating highly innovative and superior products and programs in the market' (p. 118). Im and Workman (2004) used a variation of the CPSS to develop and validate measures of new product creativity and marketing program creativity. For example, their 'novelty' scale contained items very similar to the CPSS *novelty* dimension (with words or phrases including out of the ordinary, revolutionary, unconventional, and radical), and their 'meaningfulness' scale contained items very similar to the CPSS *resolution* dimension (including relevant, suitable, appropriate, and useful).

Im and Workman (2004) found a negative impact of customer orientation on new product novelty – that is, enhancing customer orientation is less likely to help a firm create novel products, perhaps because current customers may not approve more radical newness, or may prefer products they are familiar with. The researchers suggested that new product success was driven more by the valuable and meaningful attributes (*resolution*) of the products themselves and their marketing programs, and not by novelty. Im and Workman (2004) concluded that the creativity of new products themselves is more likely to influence their success than the creativity of their marketing programs, perhaps because consumers tend to recognize novel and meaningful ideas for new products more saliently than they recognize those for marketing programs.

### Product Design

Andrews (1975) emphasized the importance of design, which is most relevant to the *style* dimension of the CPSS. He noted that both function and good looks are often important for product design. Parsons (1989) said that product design involves a combination of functional, structural and aesthetic characteristics (p. 51); note the relationship to the CPSS dimensions of *resolution* and *style*. Deschamps and Nayak (1995) emphasized the importance

of design as a product strategy, including the look, feel, touch and ergonomic qualities of the product. These characteristics are part of both the *resolution* and the *style* dimensions of the CPSS.

Dahl, Chattopadhyay, and Gorn (1999; 2001) used the CPSS in a creative way in a study of visualization in the design of concepts and new ideas. They focused on originality and usefulness as variables that would serve to drive customer appeal. They asked engineering students to design a car jack for senior citizens; some of the designers were asked to visualize the customer (an elderly person using the car jack) during the design process. The resulting designs were evaluated using a variation of the CPSS: 3-item subscales intended to measure originality (*novelty*), usefulness (*resolution*) and customer appeal. They found that designers who were asked to use imagination-based visualization and images of the end user during the design process produced designs that were significantly more appealing and more useful to the end user. In a second study, they asked their designers (engineering students) to design an umbrella for young women. Separate samples of judges, who were all young women, were asked to evaluate the designs for originality, usefulness, and customer appeal. Results were similar, in that imagining the customer led to designs that were significantly more useful. Dahl et al. (1999) pointed out that is difficult for designers to implement a customer focus, and their research showed that the CPSS helped them offer a strategy for doing so.

### *Product Improvement*

Goldenberg and Mazursky (2002) made an analogy to Darwin's theory of evolution by suggesting that the best products succeed in the market because products that fail to fulfill the needs and desires of customers disappear while products that satisfy them survive. These authors argued that analyzing the product itself can help identify market trends and predict the basic characteristics of new products.

A novel use of the CPSS was introduced by Kristensson, Gustafsson, and Archer (2004). They investigated user involvement in the development of new products. Three groups were used: advanced users, ordinary users, and professional product developers. All three groups were given the task of creating ideas for future mobile telephone services. Their ideas were evaluated on scales similar to the CPSS: original, valuable, and realizable merit. Results showed that ordinary users created

significantly more original and valuable ideas than either of the other two groups.

Besemer (2000a) presented the case study of a manufacturer of high-end stereo amplifiers and other audio components. The audio company began by asking employees in the company's administration and in the plant to assess new product concepts using the CPSS. Next, prospective users of the newly-proposed equipment were assessed. Audiophiles at several major electronics and stereo shows evaluated proposed designs for a new amplifier. The results were fed back to the project team in the form of product profiles that revealed customers' ratings of the three dimensions and nine categories of the CPSS. Designers then used creativity techniques to redesign the amplifier and to test the revised designs again with users in an iterative process. Thus, feedback from the CPSS was used to improve and fine-tune the concept drawings. Designers commented that the CPSS product profiles helped them develop a language for discussing alternative designs, as well as a structure that allowed them to experiment more freely.

It is interesting to note that designers in Besemer's (2000a) study were able to present some highly unusual ideas in their concept drawings, and some customers appreciated the high levels of innovation. However, as ratings of *surprise* increased, consumers' ratings of *logical* and *useful* decreased. The designers decided to be a little less original, by taking an element they liked from one of the extremely novel designs and bringing it back into the more useful realm. On the next iteration, the modified innovation was not perceived to be as shockingly new, but it was still seen as having freshness. Thus, use of the CPSS allowed designers to refine, but not discard, their highly original ideas. Besemer (2000a) also noticed that the product designers became increasingly confident as the project continued. The regular feedback provided by the CPSS allowed them to experiment with new ideas while actively controlling the levels of novelty in their products. Figure 1 shows the profile scores for the nine facets of the CPSS over time. Mean profile scores rose consistently over the months of the project, indicating that designers were continually getting better at managing the levels of *novelty* and *resolution* in their products.

In the future, it might be possible for companies to compare ratings of products known to be successful and unsuccessful in particular markets. The product profiles that result could offer guidance to designers aiming for the same prospective customers. In this way, the CPSS may offer a method to identify potential market targets.

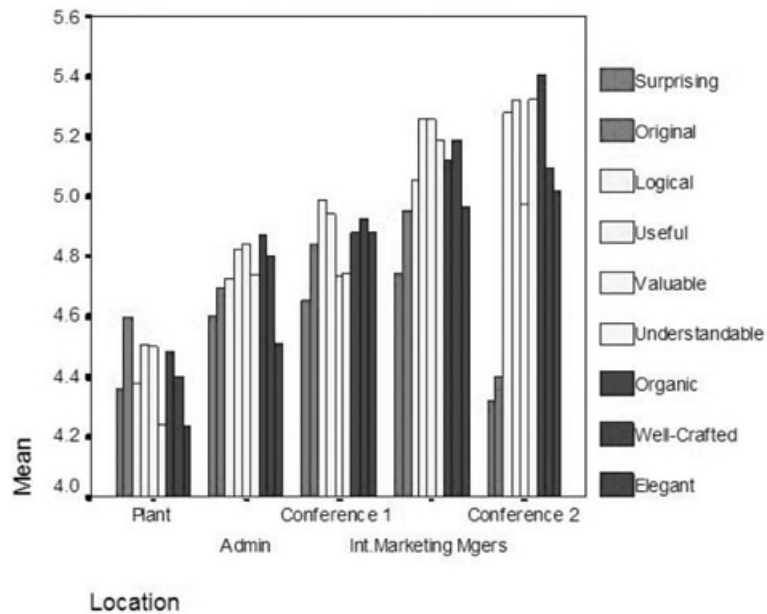


Figure 1.

### Advertising

In the literature on new product development, advertisements themselves are seldom thought of as being creative products. However, the CPSS may be effectively used to compare different types of advertising. White and Smith (2001) used the CPSS to assess the effectiveness of 15 advertisements from 12 different magazine sources that promoted a variety of products (food, beverage, health/personal care, garden, pet, and automobile). They found some consistencies among ratings of different groups of raters, particularly for *novelty*. However, advertising professionals consistently rated the advertisements as being less well-crafted (a facet of *style*) than either students or the general public. White and Smith (2001) noted that advertising professionals could take from their study a greater understanding of the ways in which their judgments were similar to those of the general public, as well as the ways in which they were different.

White, Shen and Smith (2002) used a similar design, comparing a sample of advertising professionals with samples of students and of the general public. Advertisements were chosen from a variety of magazine sources, including *Better Homes & Gardens*, *Hunting, People*, and *Time*. A 15-item version of the CPSS was used (the subscales original, logical, and well-crafted, one from each of the three CPSS dimensions). They found that the inclusion of well-crafted (from the *style* dimension) was the key for capturing the subtle differences in ratings of advertisements by the different

groups. Their study showed that the CPSS provided valuable information for decision-making about advertising effectiveness.

### Team Processes

Sethi, Smith and Park (2001) stated that although there exists a large body of literature on the determinants of organizational-level innovation, there is relatively little research examining factors that affect new product innovativeness. They indicated that most of the existing research focused on macro-level or firm-level independent variables, which provide little guidance for how to improve product-development projects at the level of functioning of the group or team that needs to work together to generate ideas, choose the best ideas, design the product based on the best ideas, and follow its development through the extensive testing and production process.

Deschamps and Nayak (1995) emphasized that innovation in process as well as product was important. Clark and Fujimoto (1994) indicated that 'the process of developing new products depends as much on the flow of information as it does on the flow of materials' (p. 286). However, the idea of evaluating processes in the same way as products has seldom been examined. For example, Rickards and Moger (2000) took an interesting look at team processes in organizations. They pointed out that what has been largely ignored both in research on project teams and in studies of the

creative process, is the *task outcome* of the team structure. Specifically, 'The outcome or product has aspects that are novel and valued to the context of the team task. These are the characteristics of the creative process and the creative product' (p. 274). Although it has seldom been done, it is possible to use the CPSS to evaluate processes as well as concrete products.

Puccio, Treffinger and Talbot (1995) used the model of the CPSS to develop another measure, the Survey of Creative and Innovative Performance, in which respondents describe the products of their work (in general, rather than referring to specific products) on *novelty*, *resolution*, and *style* dimensions. These researchers found a relationship with cognitive style, in that adaptors said that their work-related products were more logical, well-crafted, and useful (higher in *resolution*), whereas the innovators described their work-related products as being more original, attractive, transformational and expressive.

Sethi, Smith and Park (2001) pointed out that there can be considerable variation in outcomes of new product development efforts even within a single company. They suggested that what is needed are clear recommendations that are directly related to enhancing new product innovativeness (an important predictor of new product success or failure). They used a variation of the CPSS as their primary measure of new product innovativeness. However, their 10-item measure of innovativeness tapped only *novelty* and what they called 'appropriateness' of the new product (items from the CPSS *resolution* dimension). Their respondents were project managers who had recently coordinated new product development projects in several different industries, including appliances, lawn care equipment, office supplies, toys, processed food products, health and beauty aids, and household products. Sethi et al. (2001) found that new product innovativeness was positively related to such variables as encouragement to take risk, taking customer's needs into account, and monitoring of the project by senior management. Social cohesion had a negative relationship to new product innovativeness, perhaps because of fostering a kind of groupthink.

Understanding the factors that promote the development of meaningfully unique ideas is critical in new-product development (Andrews & Smith, 1996, p. 185). Because new-product development projects often involve cross-functional teams (Sethi, Smith & Park, 2001), the literature dealing with creative problem-solving in groups could be helpful, particularly when combined with the excellent criterion measures provided by the CPSS.

We have summarized the research literature showing how the CPSS has benefitted businesses in many ways. In the next section, we turn our attention to the future, examining areas in which the CPSS has a great deal of potential to spur research and improve business practices.

## How Can Creative Product Analysis Help Businesses in the Future?

There are many popular tools and techniques intended to help in the generation of ideas for new products. The CPSS is not intended to be used for this activity. Where the CPSS offers its unique contribution is in the analysis, strengthening, and development of these new ideas to make them market-ready. The CPSS is also valuable for tracking consumer perceptions of products in all stages of development from concept to finished products available on the shelves of retail outlets. When working on an emerging product concept, the CPSS can help product developers (product managers, designers, engineers, and marketers) refine and strengthen fragile new ideas, fine-tuning them in a way impossible with simplistic win-lose evaluation methods.

These are just a few of several ways that the CPSS can be used for results-oriented business. Innovation managers in research and development departments can see the most immediate applications, and when businesses use Gruenwald's (1992) and Meyer's (2002) broad definitions of product, other applications become evident.

### Screening of Ideas

*Screening of ideas* refers to winnowing new product ideas to sort out the potential winners into a small number of manageable ideas. While academic studies have often used the CPSS to distinguish 'winners from losers' (e.g., Dahl, Chattopadhyay, & Gorn, 1999; Sethi, Smith & Park, 2001; Im & Workman, 2004), in real business applications of the CPSS more sophisticated use of the measurement instrument is possible. Academic studies are often designed using the creativity of products as a dependent variable to measure the effect of a training course or a management technique, rather than to better understand the products' own characteristics. Innovation managers who use the CPSS as a metric to understand, strengthen, and develop their product concepts can tap into the real strength of the process.

Kristensson, Magnusson and Matthing (2002) stated that one critical phase in product

and service development, but one of the least understood, is the early idea phase. This is where many interesting, highly novel ideas are lost. They noted that launching a novel product will increase the chances of gaining market share, thus leading to financial advantage for a company. Reilly (1999) emphasized the importance of considering user needs during all phases of new product development, including pre-planning stages such as idea screening. Deschamps and Nayak (1995) argued that idea management was important, and that companies should 'generate, collect, evaluate, screen and rank ideas continually' (p. 14).

Andrews (1975) noted that the degree of innovation (we would say *novelty*) is influenced by several factors, including country and market, so it is necessary to determine how much originality is appropriate. While we would not argue that this is an important concern, real world applications are much more complex than that. Although measuring *novelty* is important, product analysis is more than simply trying to apply some kind of 'novo-meter' to the new product concepts. Novelty is just one of the product characteristics related to success, so it is important to look at the product concepts in a more holistic way, as can be done with creative product analysis.

Feldman and Page (1989) discussed a range of new-product screening processes used by different corporations. As an extreme example, in one corporation, a single individual screened ideas against a criterion based on a subjective 3-point scale: 'whether the idea was "ludicrous, viable, or dynamite"' (p. 11). It is disappointing to realize that important business decisions have been made using such weak criteria, but these results are not really surprising. In fact, in small companies where the owner makes each important decision, his or her intuition is often the only guidepost for deciding the fate of new product concepts.

Pessemier (1982) presented a new product-screening checklist that included relative product effectiveness as one of nine major categories. Pessemier (1982) noted, 'the screening activity by its nature tends to focus on potential flaws and problem areas' (p. 345). He suggested that steps needed to be taken to prevent the unnecessary loss of fundamentally sound ideas. We agree. The CPSS can actually 'protect' concepts and prevent the unnecessary loss of potentially valuable ideas by showing the strengths as well as the weaknesses of a nascent idea. The CPSS functions to slow down snap judgments by raters, so that they carefully consider all of the important elements of the idea or the product concept.

Thus, the CPSS provides an easily-used metric to improve idea screening.

### *Diagnosis of Brand Problems*

We've all heard that if you can create a better mousetrap, the world will beat a path to your door. Unfortunately, this is easier said than done, even with a good product. Product failures are rampant, notwithstanding the extensive business literature available to guide the new product developer. Andrews (1975) noted, 'there is no viable market for a brilliant idea if it does not fulfill a need' (p. 76). Frand (1989) also emphasized that 'in product development, the greatest need is a need . . . you need someone who needs something' (p. 49). Hendon (1989) presented an entire book of examples of product failures; some of the problems that he discussed were that the product was neither new nor different enough, delivered no real benefit, solved an unimportant or non-existent problem, was of poor quality, etc. Gruenwald (1992) discussed many reasons for product failure; some of them related to the product itself. For example, the product did not offer a unique benefit, or it was too innovative and ahead of the market, or the product message was too complicated.

These issues may point to something other than functional problems in the product. The product may work well, but its market doesn't appreciate it, or doesn't understand how it can be of benefit. Such issues may be related to problems with the brand's reputation or the consumer's expectations of the products of that brand.

Brand equity, which involves all the intangibles associated with a brand or trademark by consumers and the company, is often perceived to be the territory of marketers. But brand managers and product managers are also involved in the need to understand and position their products so as to take advantage of positive associations of the brand and to differentiate their brands from those of competitors. Product teams create brand 'personalities' for their products that fine-tune the products' features and attributes to meet the needs of the target market. One company may have several brands, and may further differentiate even within models in their own brands.

The CPSS produces a 'product profile' with scores for nine different product attributes. These profiles help product teams understand ratings by customers of a particular product to determine to what degree it is perceived as new (*novelty*), how it is perceived as being valuable or useful to the customer (*resolution*), and how highly it is judged to be organic, well-crafted and elegant (*style*).



Brand equity changes with time, and occasionally it may be necessary to retire a brand, as has recently been seen with General Motors terminating the once-strong Oldsmobile brand. Apparently, this brand was perceived by the company to require more than a superficial face-lift. It is likely that the decision was made to cease production in order to devote resources to other more profitable brands and to innovate with new ones.

Using creative product analysis and the CPSS to maintain benchmark product ratings on all of a company's brands or models can help in matching the brand or the model to the target customers' expectations, or to help stretch their expectation with gently appropriate levels of *novelty*. Doing longitudinal CPSS studies of a brand or a model over time can show how perceptions change about the product. The nine facet subscales give rich information for tracking changes and diagnosing problem issues, for example, perceptions of too much novelty in a mainline product. Armed with diagnostic knowledge provided by the CPSS, the product development team can locate the problems and begin to resolve them.

### *Competition Analysis*

Gruenwald (1992) said that it was important to 'look hard at the competition, for they make the market you are considering' (p. 125). Deschamps and Nayak (1995) made an important point that can be related to the CPSS, specifically *value* as a product criterion. They pointed to Ikea as an example of a company that has successfully changed the way furniture is designed, stocked, sold and delivered; Ikea provides maximum value to customers by combining design quality, product quality, and design utility with low prices. Banks, et al. (2002) reported the view of many managers working in advertising or marketing firms, that 'the customer requirement is not about fantastic, whizzy stuff but it's actually looking at the functionality' (p. 258).

The CPSS has especially strong value when following Gruenwald's advice about looking hard at the competition. Besides running benchmark studies on a company's own production models and those in development, doing studies of competitors' products can yield beneficial information about the perceptions by customers of your own products and those of competitors. The nine subscales of the CPSS provide much more detailed information than other methods of consumer research, yielding results that are comparable across models, brands, and even industries, about the qualities of the benchmarked products.

Using the CPSS can help companies in evaluating the products of their competitors as well as their own products, and can highlight the difference between the 'fantastic, whizzy stuff' (*novelty*) and the functionality (*resolution*). Such comparisons can provide constructive fodder for future product development. In fact, Im and Workman (2004) suggested that firms that carefully monitor competitors' activities may focus too much on novelty and not enough on resolution. Using the CPSS can help firms strike the right balance of not only *novelty* and *resolution*, but also of *style*.

The *style* dimension of the CPSS is perhaps the most useful for gaining insight into perceptions of competitors' products. Measuring and comparing aesthetic qualities of your own and your competitors' products allows innovation managers to finally get an understanding these important aesthetic variables. For example, the Apple computer company has tenaciously defended its small but important market niche (and branched out with the iPod) by emphasizing style as well as novelty and resolution. Although *novelty* is the most widely-recognized criterion and is the easiest attribute to measure, it is only the beginning. A more rigorous assessment, such as that provided with the CPSS, is needed.

### **Summary and Conclusions**

Using the broadest definition of the term 'product,' we have described how the CPSS has been used to examine the creativity of marketing programs and to predict willingness to buy. It is becoming clear that novelty is not the only characteristic of creative products that is likely to determine market success – both resolution and style play important roles as well. In other applications, the CPSS has helped designers improve products as diverse as car jacks, umbrellas, and stereo equipment. The CPSS has been used a criterion variable to examine the effectiveness of advertisements and the processes used by project managers. The CPSS has also been used to create product profiles to assist in identifying both weaknesses and strengths. We indicated that analysis of competitors' products could improve identification of strategies for customer focus.

Thus, we have summarized the literature on applications of the CPSS in a wide variety of organizations, and have suggested new avenues for the future. We have shown how the CPSS can provide a tool for product development teams to use to improve idea selection by highlighting characteristics of the best ideas, to improve their communication by utilizing a similar vocabulary, to improve their product

designs, and to improve their advertising and marketing.

In developing the CPSS over the past two decades, we have moved from the theoretical to the practical; from the ivory tower to the shop floor. We began our work because of an interesting question, 'What makes something creative?' and have spent many years looking at data that try to answer that question. More recently, we have focused on the more application-oriented research, in very practical settings. With each step we have sought to offer a quality product that could offer new insights to researchers, whether they are academic scholars or busy practitioners.

It is interesting to note that the concept of assessing, strengthening, and developing products remains novel after twenty years. Happily, because of ongoing efforts that kept the focus on the usefulness, validity, and reliability of the CPSS measure, it has been possible to improve the measuring instrument as a product itself. The new electronic application gives results-oriented businesses an easier and more flexible metric to better understanding and improving their products.

## References

- Andrews, B. (1975) *Creative Product Development: A Marketing Approach to New Product Innovation and Revitalisation*. Longman Group Limited, London, UK.
- Andrews, J. and Smith, D.C. (1996) In search of the marketing imagination: factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, 33, 174–87.
- Banks, M., Calvey, D., Owen, J. and Russell, D. (2002) Where the art is: defining and managing creativity in new media SMEs. *Creativity and Innovation Management*, 11, 255–64.
- Besemer, S.P. and O'Quin, K. (1986) Analyzing creative products: refinement and test of a judging instrument. *Journal of Creative Behavior*, 20, 115–26.
- Besemer, S.P. and O'Quin, K. (1999) Confirming the three-factor creative product analysis matrix model in an American sample. *Creativity Research Journal*, 12, 287–96.
- Besemer, S.P. (1998) Creative product analysis matrix: testing the model structure and a comparison among products – Three novel chairs. *Creativity Research Journal*, 11, 333–46.
- Besemer, S.P. (2000a) Creative product analysis to foster innovation. *Design Management Journal*, Fall, 59–64.
- Besemer, S.P. (2000b) To buy or not to buy: predicting the willingness to buy from creative product variables. *Korean Journal of Thinking and Problem-Solving*, 10(2), 5–18.
- Besemer, S.P. (in press) *Creating Products in an Age of Style*. Morpa Kültür Yayinlari, Istanbul, Turkey.
- Besemer, S.P. and Treffinger, D.J. (1981) Analysis of creative products: review and synthesis. *Journal of Creative Behavior*, 15, 158–78.
- Brethauer, D. (2002) *New Product Development and Delivery: Ensuring Successful Products Through Integrated Process Management*. AMACOM, New York, USA.
- Clark, K.B. and Fujimoto, T. (1994) The power of product integrity. In Clark, K.B. and Wheelwright, S.C. (eds.), *The Product Development Challenge: Competing Through Speed, Quality, and Creativity*. Harvard Business Review Books, Boston, USA, pp. 277–96.
- Dahl, D.W., Chattopadhyay, A. and Gorn, G.J. (2001) The importance of visualization in concept design. *Design Studies* 22, 5–26.
- Dahl, D.W., Chattopadhyay, A. and Gorn, G.J. (1999) The use of visual mental imagery in new product design. *Journal of Marketing Research*, 36, 18–28.
- Deschamps, J.P. and Nayak, P.R. (1995) *Product Juggernauts: How Companies Mobilize to Generate a Stream of Market Winners*. Harvard Business School Press, Boston USA.
- Frand, E.A. (1989) *The Art of Product Development: From Concept to Market*. Dow Jones-Irwin, Homewood Illinois, USA.
- Feldman, L.P. and Page, A.L. (1989) Principles versus practice in new-product planning. In Henry, W., Menasco, M. and Takada, H. (eds.), *New-Product Development and Testing*, Lexington Books, Lexington Massachusetts, USA, pp. 5–26.
- Goldenberg, J. and Mazursky, D. (2002) *Creativity in Product Innovation*. Cambridge University Press, Cambridge, UK.
- Gruenewald, G. (1992) *New Product Development: Responding to Market Demand*. NTC Business Books, Lincolnwood Illinois, USA.
- Hattori, R.A. and Wycoff, J. (2002) Innovation DNA: A good idea isn't enough: it has to create value. *T&D* 56(1), 25–32.
- Hendon, D.W. (1989) *Classic Failures in Product Marketing: Marketing Principles Violations and How to Avoid Them*. Quorum Books, New York, USA.
- Im, S. and Workman, J.P. (2004) Market orientation, creativity and new product performance in high-technology firms. *Journal of Marketing*, 68, 114–32.
- Johne, F.A. (1989) How experienced product innovators organize. In Henry, W., Menasco, M. and Takada, H. (eds.), *New-Product Development and Testing*, Lexington Books, Lexington Massachusetts, USA, pp. 27–48.
- Kristensson, P., Gustafsson, A. and Archer, T. (2004) Harnessing the creative potential among users. *Journal of Product Innovation Management*, 21, 4–14.
- Kristensson, P., Magnusson, P. and Matthing, J. (2002) Users as a hidden resource for creativity. findings from an experimental study on user involvement. *Creativity and Innovation Management*, 11, 55–61.
- McMahon, P. and Lane, J.D. (2002) Quality tools produce desired results: use these proven techniques throughout all job phases as you manage your teams. *Hydrocarbon Processing*, 81(1), 63–8.
- Meyer, P. (2002) *Creating and dominating new markets*. AMACOM, New York, USA.

- O'Quin, K. and Besemer, S.P. (1989) The development, reliability and validity of the Revised Creative Product Semantic Scale. *Creativity Research Journal*, 2, 268–79.
- Parsons, L.J. (1989) Product design. In Henry, W., Menasco, M. and Takada, H. (eds.), *New-Product Development and Testing*, Lexington Books, Lexington Massachusetts, USA, pp. 51–75.
- Pessemier, E.A. (1986) *Product Management: Strategy and Organization*. Robert E. Krieger Publishing, Malabar Florida, USA.
- Postrel, V. (2003) *The Substance of Style: How the Rise of Aesthetic Value is Remaking Commerce, Culture, and Consciousness*. HarperCollins, New York, USA.
- Puccio, G.J., Treffinger, D.J. and Talbot, R.J. (1995) Exploratory examination of relationships between creativity styles and creative products. *Creativity Research Journal*, 8, 157–72.
- Reilly, N.B. (1999) *The Team Based Product Development Guidebook*. ASQ Quality Press, Milwaukee Wisconsin, USA.
- Rickards, T. and Moger, S. (2000) Creative leadership processes in project team development: An alternative to Tuckman's stage model. *British Journal of Management*, 11, 273–83.
- Sethi, R., Smith, D.C. and Park, C.W. (2001) Cross-functional product development teams, creativity, and the innovativeness of new consumer products. *Journal of Marketing Research*, 38, 73–85.
- Veryzer, R.W. (1998) Key factors affecting customer evaluation of discontinuous new products. *Journal of Product Innovation Management*, 15, 136–50.
- Vissers, G. and Dankbaar, B. (2002) Creativity in multidisciplinary new product development teams. *Creativity and Innovation Management*, 11, 31–42.
- White, A., Shen, F. and Smith, B.L. (2002) Judging advertising creativity using the Creative Product Semantic Scale. *Journal of Creative Behavior*, 36, 241–53.
- White, A. and Smith, B.L. (2001) Assessing advertising creativity using the Creative Product Semantic Scale. *Journal of Advertising Research* 41(6), 27–34.

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