The Incremental Utility of Adding New Functionalities to Products: the Role of Goal Congruence and Perceived Brand Quality

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This research investigates the effect of two factors - goal-congruence and perceived brand quality - on the incremental utility of adding new functionalities to products. It is proposed that goal congruence (i.e., the extent of similarity between the goals associated with the added functionality and the base product) moderates the incremental utility gained by high and low quality brands introducing such products. In an experimental study it is found that low quality brands gain more than high quality ones when congruent functionalities are added, while both low and high quality brands gain equally when incongruent functionalities are added to products.

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Recent convergence in the electronics and telecommunications industry has allowed for the introduction of new functionalities into existing products (e.g., Cell Phones with camera, mobile TV, etc.). The current research investigates the incremental utility of adding different types of functionalities to products (e.g., adding Satellite radio versus GPS system to an MP3 music player). It is proposed that two factors—goal congruence and perceived brand quality—affect the relative utility of the new functionality added to a product. Goal congruence refers to the extent to which the added functionality is congruent with the base product (i.e., associated with the same goal), and perceived brand quality is related to the brand introducing the product. The effects of these two factors are investigated in an experimental study using hypothetical new products (with added functionalities) as stimuli.

Prior research on product adoption suggests that the impact of a new feature is influenced by two factors: (1) the “value” or benefits accrued by adding new features; and (2) the “performance uncertainty” associated with the added feature (Gatignon and Robertson 1993). Using the principle of diminishing utility, Nowlis and Simonson (1996) showed that high quality brands are expected to gain less than the low quality ones from the addition of a new feature. This is because, when a new (positive) feature is added to a high quality brand, it is assimilated into the overall positive evaluation of the product and the incremental gain for the brand may not be significant. On the other hand, for a low quality brand, the addition of the new (positive) feature contrasts with the otherwise inferior product and therefore contributes more significantly to the overall evaluation of the brand. This research, however, assumes that the value accrued by adding new features is the major determinant of brand evaluations and that consumers may or may not consider the performance uncertainty of the added feature. Moreover, it also does not distinguish between the different types of added features. We argue that both performance uncertainty and the characteristics of the added feature are important in the context of adding a new functionality to a product. For example, consumers may have concerns about the reception and picture quality in the case of adding a new feature (e.g., watching TV on a Cell Phone). In such cases, the high quality brand may gain more than the low quality one as it can help reduce the performance uncertainty associated with the added functionality. Also, the type of added functionality (e.g., adding mobile TV versus e-mail to a Cell Phone) may have a differential impact on whether the added functionality is assimilated or contrasted with the base (low or high quality) brand.

We propose that the goal congruence between the added functionality and the base product would moderate the relative gain for low and high quality brands. While most added functionalities may originate from distinct product categories, they may or may not be associated with the same consumption goals as the base product (wherein, “goals” are defined as abstract benefits sought by consumers, as per Huffman and Houston 1993). For instance, adding e-mail capability to a Cell Phone combines a new functionality with the same underlying goal as the base product (i.e., the goal of “communication”), whereas adding the ability to watch TV on a Cell Phone combines a functionality associated with a different (incongruent) consumption goal (of “entertainment”). We propose that when a functionality with congruent goals is added to a product, the principle of diminishing utility of added value would be operative, and accordingly low quality brands would gain more than high quality brands (H1). On the other hand, when a functionality with incongruent goals is added to a product, the role of performance uncertainty would become more important. For instance, consumers might perceive that since the added feature is contrasted from the base and is now to operate on a new interface (e.g., watching TV on a Cell Phone), it implies new tasks (Glazer 1999) and more possibilities for failure (Ziamou and Ratneshwar 2002). In such cases, high quality brands could serve as a strong signal for performance quality and can reduce the high performance uncertainty associated with the incongruent functionalities. Thus, we propose that when functionalities with incongruent goals are added to a product, high quality brands would gain more than low quality ones (H2).

The above-proposed effects were tested in an experimental study using two hypothetical new products as stimuli, which each had either a congruent or an incongruent functionality added to a base product. The base product used in the study was an MP3 music player and the added functionality was either a Satellite Radio (congruent goal) or a GPS system for getting directions (an incongruent goal). In a 3 (added functionality: none, congruent, incongruent) X 2 (brand quality: high, low) experimental design, participants compared two brands of the base product and indicated the price that would make the two brands of equal value. The incremental utility to each brand was measured by comparing the congruent and the incongruent conditions with the control group (with no functionality added). As predicted in H1, it was found that a low quality brand gained more than a high quality one when a congruent functionality was added to the base product (a gain of $64 vs. -$12, respectively, for MP3 + Radio; t\textsubscript{56}=3.02; p<.01). However, when an incongruent functionality was added, both low and high quality brands gained equally (a gain of $27 vs. -$2, respectively, for MP3 + GPS; t\textsubscript{56}=0.98; p=.33). As a corollary, the low quality brand gained more when a congruent functionality was added as compared to an incongruent one, while the high quality brand gained equally in both cases. These findings have implications for brands introducing new products with added functionalities, which have become increasingly common in the context of convergence in the consumer electronics industry.

References

Developing a Better Understanding of Co-Creation: Consumers’ Motivations to Create and the Underlying Processes
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With the help of internet technology, companies are allowing consumers to co-create their products by specifying colors, designs, and features. In doing so, companies are outsourcing the design task while providing a product better suited to the consumer’s needs. Empirical studies on the practice of co-creation and mass customization, however, are scarce (Franke and Pillar 2003). The articles that have been published largely deal with the technical aspects for the manufacturer rather than with the experience and value created for the consumer (for an exception, see Franke and Pillar 2004). The purpose of this research is to understand the factors that 1) motivate consumers to engage in co-creation and 2) influence their experience and product satisfaction.

While facilitating a strong match between a consumer’s idiosyncratic preferences and a new product, mass customization also has its potential limitations. The infinitely large solution space created by the number of options could drive up the cognitive costs of the decision process, overwhelming the expected value generated by the option of an individualized product (Zipkin 2001). Satisfaction with the customized choice may also be diminished as a result of the overwhelming size of the choice set (Iyengar and Lepper 2000).

To date, we are unaware of any experimental studies designed to identify 1) the factors motivating the co-creation process and 2) the specific processes underlying the value creation that results from it. Thus, we designed and ran an experiment. In this study, all participants were presented with a color picture of a standard L.L. Bean backpack and reported their preferences for it. They were then given 1) the opportunity to customize its design by picking colors from a palate and 2) the chance to enter a lottery to win either the standard backpack or their customized version. If the customizing option was selected, preferences for the customized backpack were also collected.

Three factors were manipulated between-subjects yielding a 2x2x2 design:

1) Creativity prime: present vs. absent: This manipulation primed creativity goals using an ostensibly unrelated task. Participants receiving the prime were hypothesized to customize the backpack more frequently than those receiving no prime and were expected to report higher preferences for their backpacks if they did customize.

2) Standard backpack designer: professional vs. amateur: Participants were shown the picture of the standard backpack along with one of two manipulations. In the professional condition, the text indicated that the marketing department picked the color combinations for the backpack. In the amateur condition, the text indicated that the color combination was the winning result of a consumer contest. It was expected that those in the professional condition would be more likely to customize the backpack than those in the amateur condition. This manipulation was also expected to influence preferences for the customized backpack since it manipulated beliefs about the reference backpack.

3) Customization instructions: present vs. absent: Participants were offered the chance to customize the color and design of the standard backpack. If they chose to customize, they were asked to explain their reasons and then they received the third manipulation (customization instructions: present vs. absent). It was hypothesized that this manipulation would influence participants’ propensity to enter the lottery and their satisfaction with their own backpack. Once they completed their designs, participants provided their preferences for the customized backpack.

Results
A three-way ANOVA revealed a main effect of designer ($F_{1,172}=5.58, p<.01$) such that participants told the standard backpack was designed by another consumer reported higher preferences for their own customized pack than did those told it was designed by L.L. Bean’s marketing staff (39.2 vs. 36.5). The ANOVA also revealed a three-way interaction ($F_{1,172}=5.02, p<.05$).

Chi-squared tests were used to determine the influence of the manipulated factors on participants’ decision to enter into the lottery. The creativity prime significantly increased participation in the lottery ($\chi^2=7.8, p<.01$), but neither the designer or guide manipulations had an effect. This study provides encouraging and interesting results, but a series of follow-up experiments is planned to better understand the findings.

Study 2
Why would the designer of the standard backpack (professional vs. other customer) influence one’s own preferences for the self-designed pack? Open-ended protocols collected in Study 1 suggest a possible explanation (e.g., the customer-designed backpack encouraged competition: “If s/he can do it, I can do it better”). To determine whether such competitiveness was responsible for the effect, Study 2 would manipulate the salience of competition. In one condition, participants will be told that their customized pack would be