The Effects of Product Quality and the Perceived Structural Relation Between Functions on the Value Inference of Convergence Products

Sara Kim, University of Chicago
Do-Hyung Park, Korea Advanced Institute of Science and Technology, Korea

This study extends previous studies on feature additions by showing that the perceived structural relation between old and added functions moderates the consumer evaluation of convergence products. This study shows that a new function contributes to the perceived value of a product more when the existing function is inferior if the new function and the existing function have a low perceived structural relation. However, when individuals infer the value of a new function based on a high perceived structural relation with an existing function, the impact of the new function will be greater when the existing function is superior.

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Sara Kim, University of Chicago, USA
Do-Hyung Park, Korea Advanced Institute of Science and Technology, Korea

EXTENDED ABSTRACT

These days, strategies for new product development have moved beyond the simple addition of a new feature within an existing product category. In the era of digital convergence, a new function from another product category can also be added to a product (e.g., the addition of an electronic dictionary to a cellular phone). Demand for convergence products combining the disciplines of several application domains has accelerated for the last decade (Schirrmeister and Sangiovanni-Vincentelli 2001). Despite the attractive marketability of convergence products, few studies have focused on how consumers infer the value of products with functions from different product categories. This study examines how consumers infer the value of a new convergence product.

Previous research on new products focused on feature addition. The newly added feature usually enhanced the existing function. One stream of research on new feature addition has considered characteristics of the new feature such as novelty and relevance with an existing product category (Brown and Capenter 2000; Moreau, Lehmann and Markman 2001), while another stream of research has investigated the characteristics of existing features (Mukherjee and Hoyer 2001; Nowlis and Simonson 1996). According to diminishing sensitivity, a new feature adds more value when it is offered by a relatively inferior product than when it is offered by a relatively superior product (Nowlis and Simonson 1996). A new feature is more noticeable when existing features play an inferior role. The Nowlis and Simonson (1996) study says that they extend previous research on diminishing sensitivity because they show that this phenomenon still occurs across features. However, this study points out that a new feature is not truly ‘new’ if the new feature simply enhances the existing function. What if a new function from another product category is added to a product? Will the diminishing sensitivity phenomenon still occur?

In the first experiment, feature addition is examined in order to show that the diminishing sensitivity phenomenon occurs when a new feature and an existing feature perform the same function. The experimental design has been slightly modified from the previous one. Instead of using monetary terms to measure overall product value, the experiment measured the perceived overall evaluation of the product with a 7-point bipolar scale. The results of the experiment are consistent with the Nowlis and Simonson study (1996). When the new feature enhances an existing function, new feature addition has greater impact on overall product evaluation if the new feature is added to a product with inferior existing features than with superior existing features.

Experiment 2 explores how consumers infer the value of a new function added to a product from another product category. This research investigates a unique aspect of the value inference of multifunctional products: perceived structural relations between functions. The perceived structural relation is formed when consumers infer that a feature enhancing the performance of one function may enhance the performance of other function. The reason that it is ‘perceived’ structural relations is because this inferred structural relation between functions may simply be the perception of the consumer. When consumers perceive the existence of a relationship between a new function and an existing function, the existing function may not always be the background. In this case, consumers can infer the value of the new function based on the value of the existing function. That is, consumers will infer that the value of a new function is greater when an existing function is superior than when it is inferior. Experiment 2 shows that the impact of the new function will be greater when the existing function is superior than when it is inferior when individuals infer the value of a new function based on a high perceived structural relation with an existing function. However, the new function will contribute to the perceived value of a product more when the existing function is inferior than when it is superior if the new function has a low perceived structural relation with the existing function. This result is consistent with previous studies on diminishing sensitivity.

According to the results of Experiment 2, subjects infer that the performance of the DMB function will be better if it is added to a 5 mega pixel camera phone than if it is added to a 1.3 mega pixel camera phone. They think that an increase in the number of pixels enhances the DMB function (the new function) as well as the camera function (the existing function). Therefore, the addition of the DMB function has a greater impact on the overall product evaluation when it is added to a 5 mega pixel camera phone than when it is added to a 1.3 mega pixel camera phone. However, when the electronic dictionary function is added to a camera phone (the low-perceived-structural-relation condition), subjects perceive the value of the electronic function is greater when it is added to a 1.3 mega pixel camera phone than when it is added to a 5 mega pixel camera phone.

This study contributes to the literature on inferential processes in terms of a new kind of inferential process which is based on the perceived structural relation. This study also contributes to the research on new products since it considers digital convergence products to extend the previous studies on feature addition.

References


