How do consumers think about hybrid products? Computer wearables have an identity problem

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ABSTRACT

Hybrid products, as exemplified by Apple or Fitbit wearables, claim features of different product categories (i.e., a technology *and* a fashion item). As these products develop, marketers find it challenging to position and market them because they transcend traditional categories. Using wearables as exemplars and utilizing the product design literature, we propose a typology of these hybrids using the dimensions of (1) mono- versus multi-functionality and (2) mass- versus luxury fashion. Apart from being a fashion product, mono-functional wearables support one main technology-enabled function (e.g., an activity tracker), whereas multi-functional wearables support multiple functions (e.g., being a watch, activity tracker and an organizer). To illustrate the optimal positioning strategies for wearables, we show how various permutations of these products impact a consumer's self-image and product desirability.

1. Introduction

Significant changes in the marketing environment due to new technologies are disrupting markets (Barczak, 2016). For instance, embedding technology into everyday products has yielded numerous complex and multi-functional hybrid products – products that possess features of more than one product category (Rajagopal & Burnkrant, 2009). Today, we are witnessing an explosion of hybrid products, such as *computer wearables*. These products feature a combination of sensors and/or computing devices embedded in apparel and fashion accessories, such as the Fitbit activity tracking bracelet or the Tambour Horizon smartwatch by Louis Vuitton (Friedman, 2017). The complex nature of computer wearables calls for product design, marketing and positioning approaches different from those used for traditional products.

Many industry observers believe that the dual nature of these emerging hybrid products offers the potential to duplicate the success story of *athleisure* – a highly lucrative new category (as exemplified by the yoga pants that we now see women wearing everywhere) created by combining athletic wear and leisure wear (Marlowe, 2016). However, the results for wearables have been mixed at best, and thus far some wearable products have failed (Temple & Winchester, 2017).

How can we explain this lackluster consumer acceptance? One plausible explanation is that both manufacturers and consumers remain confused regarding how to think about and categorize these new items. Is an Apple Watch a tech product, a fashion product, a fitness product or something else altogether? We saw a similar problem several years ago, when Motorola's personal digital assistant (PDA—a hybrid of a portable computer and personal organizer), failed to convince consumers of its value. Consumers had difficulty categorizing the device as a portable computer or personal organizer because it shared some characteristics from each category yet differed from other entrants in both categories (Keller, Sternthal, & Tybout, 2002).

The manner in which companies and users categorize products is tremendously important. This assignment results in a powerful self-fulfilling prophecy, as perceived category membership determines the criteria by which people evaluate the product, the competitors to which they compare it, and even where retailers display it in a store (Chaplin & Lowrey, 2010; Englis & Solomon, 1996). Is a rug furniture? Is flavored yogurt a meal or a dessert? Is an Uber a taxi?

The answer is important because it determines how manufacturers design and how retailers position products vis à vis consumer segments, as well as how they communicate product and brand attributes to appeal to different dimensions of self-concept. Rajagopal and Burnkrant (2009, p. 232) observed that the greatest issue regarding how shoppers categorize hybrids is a "*single category belief*," with consumers assigning a hybrid to an extant category and then evaluating it according to the determinant attributes that they associate with this category. Thus,

hybrids face a potential identity problem because to date it is unclear whether consumers will see them first and foremost as technology or fashion products (Chuah et al., 2016).

Academic research on hybrid products, which could help to address the identified questions, is still in its early stages. To date, it has primarily focused on visual and technology factors affecting cognition in relation to wearables—not on product categorization and its consequences for product design and positioning (e.g., Choi & Kim, 2016; Chuah et al., 2016). Especially because a bevy of hybrid products is poised to enter the market, it is important to develop frameworks that will help marketers to understand how to differentiate, position and display new hybrids to maximize the likelihood that consumers accurately apprehend and evaluate these new product domains. As a step in this direction, we focus our inquiry on the case of one of the earliest hybrid offerings to come to market – computer wearables. Regardless of the misfortunes of some wearable manufacturers (Temple & Winchester, 2017), this hybrid product category was estimated to reach > 27 million users in 2017 in the U.S. alone, with strong growth projections for the future (Statista, 2016, 2017). We aim to understand:

a) the dimensions that we can expect consumers to use as they attempt to assign wearables to extant product categories;
b) how hybrids will impact the consistency of a consumer's self-image (e.g., fitting with a self-image of fashionista versus tech-savvy person), considering the multiple needs that they address;
c) how hybrids that differ in terms of how closely they link to a consumer's desired self-image will be readily adopted by users; and.
d) how to develop marketing strategies for wearables and potentially other hybrid products from a product design and positioning perspective.

Our research program includes two studies. In Study 1, we examine the differentiating attributes of wearables and identify 4 product categories based upon a typology of: (1) functionality (mono- versus multi-functional products); and (2) fashion type (mass- fashion versus luxury). In Study 2, we employ a quasi-experimental design to explore how different types of products affect consumers and perceptions of self-identity and consequently their potential to bolster a desired self-image.

2. Theoretical perspectives on hybrid products: a rationale for further research

2.1. Categorizing and positioning of hybrid products

Hybrid products possess features of more than one product category; therefore, consumers can potentially assign them to multiple categories (Rajagopal & Burnkrant, 2009). Such products face the challenge of "*a single category belief,*" indicating that consumers tend to assign them to a single pre-existing category based upon their assumptions regarding the items that the new product most closely resembles (Gregan-Paxton, Hoeffler, & Zhao, 2005; Rajagopal & Burnkrant, 2009). This tendency can diminish the appeal of a hybrid product because it might not compete favorably with the other items that a store displays that might resonate more with a consumer's self-image.

In the case of the growing category of hybrids such as wearables, the task of positioning thus becomes more difficult. First, consumers might address multiple categories in relation to a product, for instance, when they associate a smartwatch with extant cognitive labels, including watch, activity tracker, fashion accessory, or organizer. Various product aspects, such as technological functionality or luxury materials, can be relevant because the relative salience of these dimensions will strongly influence the category that consumers choose (Gregan-Paxton et al., 2005; Solomon, 1988).

This assignment is crucial, because it determines the consumer's product comparison set (Solomon, 1988). Should the consumer, for example, compare (and a retailer emphasize the comparison of) an Apple Watch to his or her iPhone, to his or her Fitbit, or perhaps to a Tateossian bracelet or even a Rolex? How consumers assign a product to a perceptual category will also determine whether they see that product as consistent with their daily lives, the tasks that they need to perform, or the social roles that they seek to play (Chaplin & Lowrey, 2010; Englis & Solomon, 1996). Understanding answers to these questions will help retailers and manufacturers of existing hybrids to display these items in places and settings in which consumers quickly build appropriate perceptions that will help the products to appeal to specific market segments.

3. Qualitative study 1

To provide answers to the above questions, there is a need to understand how consumers are likely to perceive and categorize wearables. Furthermore, to understand the grounds for this categorization, we must have deeper insights into the product attributes that affect consumer perception and product categorization. Given the embryonic state of knowledge in the area of hybrid products such as wearables, we start with an evolved grounded theory approach (Study 1) to collect and analyze observational data (Goulding, 2017).

3.1. Method

Evolved grounded theory follows the work of Strauss and Corbin (1990). It emphasizes the structure, context, actions, and consequences that researchers can infer from qualitative data (Goulding, 2017). This methodology starts with data rather than with pre-existing theoretical frameworks that can bias researchers in the way that they handle the data (Kumar & Noble, 2016; Strauss & Corbin, 1990). To analyze the data, researchers perform three types of coding: open, axial, and selective. Open coding is the initial step in data analysis, identifying and describing phenomena found in the text. Axial coding involves relating different codes to each other and pointing toward potential causal relationships among phenomena. During selective coding, the researchers choose core categories to relate different codes to those core categories (Strauss & Corbin, 1990; Suddaby, 2006).

3.1.1. Data collection procedures

We relied upon consumer reviews (Rageh, Melewar, & Woodside, 2013) to evaluate perceptions of wearables, the most prevalent of the cross-category devices that U.S. consumers currently use (Statista, 2016, 2017). We compiled these online reviews in December 2015. To select the products to review, we followed Kumar and Noble (2016) and examined 37 articles that we sampled from the technology or fashion sections of popular magazines and databases (*Forbes*, *New York Times*, *Wired* and *WGSN*). We searched the contents of these magazines for articles with the following keywords: "fashion tech," "wearable technology," and "wearable device." This process yielded 29 distinct wearable products, including activity trackers, smartwatches, and smart clothing.

Table 1 shows all of the qualifying products for which we collected reviews. For a sample of reviews, please see Table 2. For a specific product to qualify for inclusion in our analysis, the reviews of this item had to meet several criteria:

1) They must relate to different categories of wearables (different fashion and technology), with review comments pointing to differing attributes;
2) They must include a minimum of 50 reviews; and.
3) They must include a mixture of positive and negative comments, as indicated by a star rating of a review, where 1 star indicates a