



Making Markets: The Role of Design in the Process of Legitimation

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We examine the impact of design on the evolution of a product market from illicit to mainstream. We argue the importance of congruence with normative and cultural-cognitive structures in fostering legitimacy. To understand the role of product design in this process, we conducted an ethnographic study of the newly-legal recreational cannabis market in the US, a market that has attained regulatory acceptance in some states but lacks normative and cultural-cognitive legitimacy. By analysing product design and interviewing managers, we find that design plays a pivotal role in legitimation. Producers transform a market by manipulating two distinct aspects of materiality: *material in relation* – how products relate to accepted products, and *material in use* – how design guides and enables consumption. We offer a framework for managing products in new markets, arguing that design can enable legitimacy by drawing on symbolic relationships to other products, considering affordances, and enhancing strategic socio-cultural innovation.

Keywords: market emergence, legitimacy, product design, material culture

Introduction

Markets are complex and evolving social systems. At any given time, the mutual understandings among producers, consumers, and other stakeholders such as regulators and the general public (Weber, Heinze, & DeSoucey, 2008) may make markets appear stable. However, because they are dynamic, they are also susceptible to transition or disruption given new technology, an infusion of new or more powerful stakeholders, or shifting regulation. However, there has been limited examination of an essential part at the heart of the market—the product—in market change. This raises two important research questions. First, what role does product design play in legitimation? And second, how can managers leverage design to foster legitimacy in new or transitional product markets? Our inquiry draws from a material culture perspective, emphasizing the role of objects in regulating social relations, carrying out social functions and providing symbolic meaning (Woodward, 2007) to investigate how products' material elements and associations shape meaning in ways that enable a mainstream market to emerge.

Recent studies of market emergence have emphasised meaning being shaped by marketing communications, consumer practices, and discourse in popular media. While marketing researchers have noted that product design can impact market growth (Giesler, 2012; Martin & Schouten 2014), scholars and managers still lack nuanced understanding of how and why a product's material design promotes legitimacy. Gaining insight into the legitimation of previously stigmatised products or categories is important, whether to help managers



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encourage adoption of beneficial products or social advocates weaken the appeal of products that have potentially harmful implications.

The links among materiality, systems of cultural meaning, and mainstream markets are evident in the automotive sector. For example, minivans emerged as a category when marketers identified new potential in a “family vehicle” market positioning and car designers leveraged existing automotive classifications and attributes (e.g. cars, trucks, vans) in ways that facilitated market change (Rosa et al. 1999). Both physical cues—such as built-in children’s car seats—and marketing messages referencing space and convenience communicated the desired positioning to consumers, who interpreted and acted upon the information. In this dynamic system, consumers’ behaviours in turn generate new signals in the marketplace, which are (or may not be) incorporated into the socially-constructed pattern of consumption and production practices. In this way, attributes signifying “minivan” stabilized as producers and consumers developed shared knowledge structures about the product category (Rosa et al. 1999). However, product meanings continue to shift with evolving social values and product iterations. For example, the sport utility vehicle (SUV) later emerged from the minivan category. The design of SUVs employed visual references to military vehicles such as large grills and boxy, tank-like shapes, which conveyed a sense of control and safety for owners that particularly resonated with American attitudes toward personal safety in the 1980s and 1990s (Lauer, 2005). However, SUVs’ popularity waned once environmental movements made fuel economy salient and gas prices increased in the late 2000s (Holt 2012; Luedicke, Thompson, & Giesler 2010). As this example illustrates, markets evolve as meanings change, becoming more congruent with cultural norms and values that shift over time.

The study presented here is the first phase of a larger project examining the role of materiality in the shift of a product category from illicit to legal and increasingly mainstream. Whereas new legislation may pave the way for market transactions to occur legally, regulatory legitimacy alone does not ensure a product’s acceptance and eventual diffusion among mainstream consumers, particularly if previous prohibitions prevented learning about the market or if consumption remains counter-normative. Given significant evidence that consumers make product judgements based on visual form (Hoegg & Alba, 2007; Rindova & Petkova 2007) and material properties (Peck & Childers, 2003) among other sensory cues, we posit that product design is an important mechanism for facilitating consumer acceptance and investigate how it can contribute to legitimacy. By underscoring the links between materiality and cultural values, we illuminate the role of material culture in the legitimation process. Specifically, we identify two aspects of materiality, which we term *material in relation* and *material in use* that are critical in shaping product meaning and thereby increasing acceptance.

Objects’ material factors are a key element of product adoption and use (Jordan 2000). Design research has articulated the ways that product designers convey meaning and appeal to consumers’ aesthetic preferences (Krippendorf, 2006), while marketing research has examined how existing stigma can influence producers’ decisions (Giesler, 2012). Yet to our knowledge, no research has examined the role of design in fostering acceptance in new (or newly lawful) markets. While extant work has articulated the importance of product symbolism in marketing and adoption of new products (Homburg, Schwemmler, & Kuehnl 2015), it has primarily focused on symbolism relative to the user (i.e. an object’s expressive value) rather than the system of socio-cultural interpretations that give a product this meaning. We build on prior consumer-focused studies to illuminate the role of design as a tool that producers employ to facilitate product comprehension, desire and adoption. Additionally, most research on product design in marketing management has theorized the introduction of new products into mature, stable markets rather than new or shifting markets (Hung and Chen 2012; Luchs, Swan, & Creusen, 2015). In mature markets, consumers have well-established ideas about product function and meaning within the category (i.e. cultural-cognitive legitimacy) and there is generalized social approval for use (i.e. normative legitimacy). For this reason, previous studies have emphasised the role of design in differentiation and competition (Homburg et al. 2015). In new or transitioning markets, however, knowledge and meaning of product attributes are much less defined (Carpenter & Nakamoto, 1989). We extend this work to present cases in which similarity—rather than differentiation—can provide a strategic advantage as companies work together in the early stages of a newly regulated market to teach consumers about the category as a whole.

To understand the role of material form in the legitimation process, we examine a previously illicit product in the process of acquiring legitimacy: the market for recreational cannabis (marijuana) in the United States. In particular, we study the recreational cannabis market in the state of Colorado, where individuals over the age of 21 have been able to legally purchase marijuana from licensed retailers without a prescription or license since 2014. This regulatory shift, and the commercial transitions that have followed, represents a significant market transformation and an ideal context for study. Because recreational consumption occurred in an illegal

(and thus unregulated) market prior to 2014, many mainstream consumers lack an understanding of the product category or associated consumption practices. The result is that few consumers have developed preferences related to specific brands, retailers, product forms (such as edibles, beverages, topicals, tinctures) or delivery mechanisms (including vaporizers and transdermal patches). The social stigma surrounding marijuana consumption is longstanding, and negative stereotypes are often invoked in the debates taking place among media, activists (both opponents and proponents), producers, and consumers. Thus, current producers must be particularly mindful of breaking away from pervasive and embedded stereotypes (Dunne 2014) if they are to engage consumers' attention and shift attitudes from aversion to acceptance.

Finally, this context is fitting for examining the evolution of mainstream markets because while cannabis (the botanical genus name for marijuana) is not yet legal throughout all of the United States, producers have already undertaken considerable efforts to make it appealing to the mainstream market in anticipation of federal statutory acceptance. These include developing products, brands, and retailscapes that are purposively distinctive from the prevailing, negative imagery surrounding the category (Birkner, 2015; Halperin, 2015; Klara, 2014). Whereas the materials and modes of consumption previously associated with marijuana include bongos, pipes, rolling papers, and "magic" brownies, the new products populating the shelves of contemporary cannabis retailers include carbonated beverages, lip balms, skin lotion, premium confectionary, and slim vaporizing pens.

Literature Review

Market Systems and Legitimation

Markets undergoing transition face a unique set of challenges; product markets that appear without any precedent to aid categorization—or depend upon the construction of a new or modified categorization—have difficulty attaining legitimacy. For example, consumers confronted the first "horseless carriages" with trepidation, fearing motorcars to be both deviant and dangerous (Chiu, 2008). New industries become accepted not purely through regulation, but through the more complex, social process of attaining legitimacy (Scott, 1995; Suchman, 1995). Legitimacy is the quality or property of an institution being regarded as "appropriate, proper, and just" by social actors (Tyler, 2006, 376). Legitimation can be understood along three axes: normative, cultural-cognitive, and regulatory (Scott, 1995). Regulatory legitimacy entails legalization, oversight, and enforcement by the state. Normative legitimacy is achieved when a market or company aligns with social morals and values (Scott, 1995; Suchman, 1995), and cultural-cognitive legitimacy is achieved when the market is not only understood by individual consumers but incorporated into existing cognitive structures, tacit knowledge, and assumptions (Humphreys 2010a).

Objects exist somewhere in between the legal, normative, and cultural matrix, and can affect these elements in important ways.

Product Design

Design is an important domain for marketers, as it determines the properties of an artefact that help express its function (Bloch, 1995) as well as its emotional and symbolic value (Verganti, 2008). Design research in marketing has examined consumer response and preference (e.g., Bloch 1995; Moreau, Bonney, & Herd 2011; Mugge & Dahl, 2013; Orth and Malkewitz, 2008; Veryzer & Hutchinson 1998); product innovation (e.g., Gemser & Leenders, 2001; Schreier, Fuchs, & Dahl 2012; Verganti & Öberg, 2013), and branding (e.g., Beverland, Wilner, & Micheli, 2015; Beverland 2005; Kreuzbauer & Malter, 2005). Yet these domains of research tend to focus on individuals rather than examining how marketplace meanings are shaped at a collective, symbolic level.

In a recent review of the marketing literature on design, Homburg and colleagues (2015) identify three dimensions of design: functional, aesthetic, and symbolic. Consumers' operative and stylistic preferences are addressed through products' functional and aesthetic aspects, but design also appeals to consumers' emotional and sociocultural needs (Dell'Era & Verganti 2011). Designers draw from and encode cultural meanings in products with the expectation that consumers interpret meaning from the product's symbolism (Bloch, 1995). However, this symbolic dimension refers not to individual preference, but to categories of social meaning.

Although the development and interpretation of product meaning plays a vital role in legitimation, we know little about how producers—whose primary domain of control is the physical product and related marketing communications—may strategically leverage product form to turn a previously illegitimate consumption practice acceptable and appealing to a broader consumer base. Product design and development teams make decisions about product materials, form, and appearance with the intention of making artefacts appealing to the consumer (Hsiao & Chen 2006; Redström 2008; Sudjic, 2009) but also to meet the expectations of other stakeholders including regulators, shareholders and critics. The attempt to conform to convention inevitably communicates the product's symbolic qualities (Redström, 2008; You & Chen 2007). Thus, we must understand how design—whether of products, packaging or merchandising and distribution—imbues meaning and influences adoption.

Material Culture

Material culture can be summed up as the “social implications of things” (Miller, 1987: 85), a frame that highlights the capacity of objects to shape individual behaviour (Sunstein & Thaler 2012); subconsciously establish consumer expectations that shape social norms and guide cultural associations. Material culture foregrounds the cultural values manifest in material objects. We argue that materiality primarily shapes product meanings in two ways: through its symbolic relationships with other objects, which we call *material in relation*, and by influencing consumer interaction, which we call *material in use*. *Material in relation* describes the relationship of a material object to other objects: contemporaneous, past or future. These associations can affect perceptions of legitimacy in that they can be either consistent or inconsistent with valorised cultural meanings. For example, e-cigarettes were designed to retain some material elements congruent with cigarettes, such as their shape, but to avoid problematic associations like tobacco. E-cigarette designs thus tend to emphasise the “clean” coolness of technology (inclusion of LED light and battery operation) over the “dirt” associated with the smoke and ash of traditional cigarettes by vaporising a liquid rather than burning plant material). Thus, material elements of the design rework symbolic associations between the new, hopefully “desirable” product and older, stigmatized products. Forty (1986) describes how the new electrical appliances of the 1930s were designed to mimic previous category types—electric cookers looked like their gas predecessors, which had in turn imitated coal—but also to convey a series of new, desirable associations: electricity was clean, silent, instant, modern, and revolutionary (pp, 197-8).

Importantly, designers employ materials and forms to create and communicate both meaningful similarities (Srinivasan, Lilien, & Rangaswamy 2006) and differences from competitive products. We posit that by signalling comparative similarity and difference to existing products, product design plays a pivotal role in the legitimation process.

Materiality also potentially affects legitimation through *material in use*. Here the material elements of design play a role not through their symbolic relations with other objects, but through their affordances possible (Gibson, 1977; Norman, 1988): by directing action, becoming congruent with some user goals and incongruent with others. Material comes to have meaning by virtue of being used in a particular way for a particular task (Heidegger 1927/1996). Evaluating affordances may tell us what types of objects are likely to become legitimate and which are not.

Despite the many ways that the design of objects shapes consumer acceptance, both at an individual and collective level, marketing researchers have given little attention to the properties of material objects as they relate to market transition and legitimation. This is surprising, because both the design and consumer psychology literatures have demonstrated that the appearance of objects influences consumer perception and valuation of those objects (Argo, Dahl, & Morales 2006; Hekkert, Snelders & Van Wieringen 2003).

Method

Data collection

Our study of the recreational cannabis market began in 2014, when Colorado legalised recreational cannabis. We began with ethnographic immersion in the state's capitol and most populous city, Denver. One of the authors contacted individuals featured on a prominent national news programs and newspapers requesting interviews. Once these were arranged, she employed a snowball sampling process, asking interviewees to suggest others in the industry that should be contacted and, if contact was successful, asking those individuals

in turn to suggest further resources. The result was a series of semi-structured interviews with nine prominent industry producers and marketers in their offices or manufacturing facilities. Interviews lasted an average of 1.5 hours; each was audiotaped and transcribed verbatim. The author asked interview subjects for recommendations of retailers (dispensaries) to view and events. She then visited these venues (as well as others) and conducted nonparticipant-observation of dispensaries in Denver to examine retail design, product mix and merchandising as well as engage in *in situ* conversations with retail store staff about consumers' responses to specific products. She also attended the 2014 annual Cannabis Business Awards ceremony to access producers' discourse regarding market strategies, trends and consumer insights.

A summary of the data is provided in Table 1.

Table 1: Interview and Observational Data

<i>Name (pseudonym)</i>	<i>Organization</i>	<i>Title or Role</i>
Alan	Brand A: cannabis consumer packaged goods	Chief Marketing Officer
Anne	Brand A: cannabis consumer packaged goods	Director of Marketing
Barbara	Brand B: cannabis branding consultancy	Co-founder and Strategic Director
Beth	Brand B: cannabis branding consultancy	Co-Founder and Creative Director
Carol	Brand C: cannabis-related special events organizer	Founder
Donna	Brand D: cannabis business developer	Co-Founder
Janice	Brand E: cannabis retailer/dispensary	Owner
Frances	Brand F: recreational cannabis testing lab	Operations Director
Gillian	Brand G: cannabis-related public relations consultancy	Founder
<i>Company</i>	<i>Description</i>	<i>Engagement</i>
Brand B	Cannabis-related branding consultancy (branding, store design, public relations)	interviewed firm's founders in their offices
Brand A	One of the largest and most established consumer packaged goods companies	met president and interviewed CMO at headquarters (spoke by phone with Director of Marketing)
Brand C	Cannabis-related special events organizer; planning and catering	interviewed president/founder at office
Brand H	Retail store billed as "The Apple Store of Cannabis"; first recreational cannabis-only retail store	emailed with owner, observed merchandising; service interactions; spoke with manager
Brand I	Retail store with snowboarding theme	observed merchandising; spoke with two bud tenders (employees); took photographs
Brand J	Retail store recommended by informants for its accessible, upscale design.	spoke with manager and two bud tenders (employees); took photographs
Cannabis Business Awards 2014	Annual award ceremony for Denver-based businesses; primarily entrepreneurs	observed awards ceremony; spoke with other attendees; spoke with salespeople at trade booths; some photographs

Ethnographic and Visual Analysis

All three authors read and independently conducted open coding of each transcript and set of field notes. We shared, analyzed, and discussed the textual data in multiple meetings, allowing for patterns in the data to emerge and then engaging in discussion. Semiotic analysis was conducted on product imagery and designs. We catalogued the data and adopted several analytic categories of critical visual analysis: form, medium, genre and comparison. Form is the way a subject is presented; medium refers to the material form of object; genre refers to a type or category; and comparison foregrounds the features of something by juxtaposing it with something similar but significantly different (Rose, 2005; Schroeder, 2006). We considered these categories in our analysis, comparing products in this newly legal market with existing products.

Findings

We find that materiality plays an important role in the legitimation of the recreational marijuana market in Colorado. The primary challenge for firms in this new market is to employ material elements in ways that shift product connotations away from existing, stigmatized meanings and toward interpretations congruent with accepted products and social practices.

In terms of the mechanisms facilitating the market's legitimation, our interview and visual analyses reveal that designers and marketers attempt to establish recreational cannabis as a legitimate market for mainstream consumers by pursuing congruence between new recreational cannabis products and established, legitimate cultural meanings. Producers' work comprises two distinct types of framing: *material in relation* and *material in use*.

Material in Relation

The first way that designers and marketers shape product meaning is by manipulating material in relation. That is, producers introduce products that are related to existing, legitimate product forms and thus congruent with normative cultural meanings. Producers make strategic decisions about goods (e.g. product form, packaging, advertising) in order help consumers categorize and reframe the product towards desirable associations and away from possibly objectionable associations. Prior research has established that designers do so when introducing innovative products for which there may be category ambiguity (Goode, Dahl, & Moreau 2013). By emphasizing similarity to legitimate products and difference from previously stigmatized products, designers influence the creation or modification of meanings that consumers ascribe to the product. The relationship of an object to other objects affects how consumers ascribe cultural-cognitive legitimacy to it.

We find that the ways that physical products resemble one another plays a key role in legitimation as a framing process. For example, marijuana is linked to intoxication as well as smoking, which traditionally has been one of the dominant modes of cannabis consumption. These associations are problematic in part because cigarette smoking recently has lost legitimacy in the United States as health officials and regulators have attempted to abate tobacco consumption. Designers of cannabis products, then, must not only introduce product forms that will attract prospective consumers, they must also avoid materially signalling association with an undesirable class of adjacent goods. Circumvention of negative associations also has implications for sensory faculties beyond the visual; in the case of cannabis, this includes smell and taste. Accordingly, producers seeking normative legitimacy design goods in forms that avoid undesired connotations, and the result has been a proliferation of edibles and topical applications (foods and lotions infused with THC, the active ingredient in cannabis). Thus, designing objects that contrast with forms and meanings of illegitimate, existing material objects enables producers to encode products with new, legitimate meanings.

An excellent example of designing material in relation is the recipient of the 2014 Cannabis Business Award for Best New Product: a transdermal patch like those used to promote smoking cessation by a company called Mary's Medicinals (Figure 1). Visual analysis of the transdermal patch foregrounds its form as innocuous; packaged in a slim, discreet foil packet, the company's brand identity connotes an old-fashioned apothecary. The opaque, colourless package appears without marketing artifice or hyperbole (the company's tagline is "For us, it's simply black and white"); its typography evokes a time when pharmacists were professional chemists who produced their own compounds. This impression is underscored by the stamp of a product number, reminiscent of the numbering on other handmade or limited-edition goods. The only image is a tiny cannabis leaf set in a plain square. The product *medium*—a small (2 inch x 2 inch), white, adhesive square—is similarly banal, as it is worn on the skin, under clothing. The patch's *genre* is that of bandage, connoting care and

comfort rather than self-indulgence or amusement. Retail staff asked to describe the product emphasized its discretion (as does the company website). Scent-free, it was described by more than one budtender as “cannabis you could consume at work,” evoking the internet slang “(not) safe for work,” a phrase used to advise users of things that are considered (in)appropriate for public consumption and underscoring how innocuous the product is interpreted to be.



Figure 1: Mary's Medicinals transdermal patch. Image source: cannabis.net

The producers in our study worked on two relational aspects of cannabis products: their difference from stigmatized products (e.g. cigarettes) and their similarities to acceptable products (e.g. bandages). Evoking specific and culturally determined material codes, designers can thus suggest meanings for new offerings by defining the product through a network of semantic relationships (Krippendorf & Butter 1984). These, in turn, provide category cues (Goode et al. 2013), signalling both what the product is (or is like), and what the product is not.

“Donna,” co-founder of a cannabis business development organization, is keenly aware of the need for new product forms to avoid associations with smoking. Contrasting the emerging smokeless product forms such as topical lotions and vaporizers against existing delivery forms that require a flame source for consumption such as bong, pipes, or dabbing rigs (a device that vaporizes concentrated cannabis when heat is applied with a butane torch), she wryly commented, “I do not believe the majority of Americans want a blow torch involved with their evening relaxation activity.”

Because new products stand in relation to those already in the market, producers make a concerted effort to foster associations with conventional goods with which their product may share properties or attributes. In the case of cannabis, related categories include alcohol, medication and confectionary, because: each is expected to be consumed at adults’ discretion, in moderation, and is motivated by a desire for pleasure or relief. Just as private label packaging is often intentionally designed to resemble the leading brand (Kapferer, 1995), so too is comparison encouraged between cannabis products and common goods through design elements such as brand identity (logos, colours), packaging, and marketing communications imagery. For example, House of Jane® produces single-serve coffee pods infused with THC. Combining coffee with cannabis and packaging it in ubiquitous single-serve pods can be seen as a deliberate attempt to transfer the legitimacy of coffee, a commonplace beverage which is “used” to alter mood or alertness, to recreational marijuana. By drawing directly on the visual cues and meanings of an accepted and mundane product like coffee, designers employ the practice of reframing (Dorst, 2011), creating an analogy between consumption of THC with conventional products that may be used similarly.

The use of analogy and metaphor—creating an association between a source and a target through comparison—is a central design practice (Blackwell, 2006; Cila, 2013; Moreno et al. 2014) which also has been explored in the marketing literature as an important means of communicating product semantics. Importantly, although producers in our study signal similarity to legitimate products, the process does not produce homogeneous branding and product design. Just as in mainstream product categories, brand positioning varies, and design plays an important role in expressing brand personality. Further encouraging normative

legitimacy, these representations appeal to social values such as innovation and technology. We observe that discourses associated with new technologies can also provide a legitimizing function; cannabis for this “new” market is framed as innovative, rather than old. “Anne,” the marketing director at Brand A, explains:

We are an innovative company. Innovation on delivery-assisted products [new ways to consume] is led by our science team. It could be something that is a format that we are going to be the first to bring market...[like] a dissolvable strip, an ultra-thin film [like Listerine breath strips. We also look at fast moving consumer goods.] It's winter, so we have the opportunity to capture a huge amount of consumer traffic that's coming to the mountains in Colorado. We want to see a seasonal product out there, and we know that a small chocolate bar is something you can innovate quickly and roll out efficiently. We ask ourselves, what are the top sellers? What do you see in Starbucks? You see a lot of hot chocolate, and a white chocolate peppermint bar coming out of every good chocolatier...so we said, 'Let's go for it.'

By actively studying other industries, producers in our sample—fully aware of their category's extant associations as well as desired replacements—intentionally forge parallels with specific products, places and meanings intended to overwrite existing cultural symbols. Most of the producers we interviewed were equally conscious of the risks of weak or undesirable category comparisons.

Previous research has shown the importance of media framing, network creation, and consumer collaboration to legitimacy, but these are elements external to the product. An object's materiality, and its capacity to encode and convey cultural meanings, is an important mechanism that can enable legitimacy. Positioning products to invite and facilitate comparison with other goods is the hallmark of *material in relation*.

Material in Use

The second way that producers shape meaning is by designing products that promote legitimacy through *material in use*. As revealed above, the physical resemblance of one product to another has implications for legitimation. However, product design imbues not only relational capacities, but functional ones as well. Producers also strategically employ material design to influence consumers' uses of products at two critical points—acquisition and consumption.

One purpose of design is to “provide [users] with information to express the usage, the function, and the other symbolic qualities of the product” (You & Chen 2007). This is a special challenge in the cannabis context, because it is an experience good and even where recreational use is legal, there are restrictions on how it can be displayed for sale. In categories where product quality is difficult to assess prior to use, designers must communicate necessary information and meanings prior to use through careful attention to shapes, materials, colours, and forms (Crilly et al. 2004; Orth & Malkewitz 2008). Marketing director Anne joined Brand A with experience in consumer packaged goods and luxury brand development, and is well aware of her industry's constraints:

Consumers don't have the opportunity to engage with our product. They can't walk over and pick it up, which makes it a very different challenge to connect with consumers in a meaningful way. Consumers are very, very tactile, they like to turn something over, pick it up, see the weight of it. If you can't touch a package, it's hard to connect [...if I'm a consumer, I want to] walk into a dispensary and engage with a brand that feels good to me, and feels that it's approachable and safe, and innovative, and trustworthy. That's really where we can start to move the needle with design, [so] that once they get to the store we can communicate 'Honestly, this is the brand for you. We're trusted, we're safe, we're tested.' You relate to our packaging—really, to our brand—on a tangible level.

Similarly, acquisition is unlikely if the consumer is uneducated or intimidated by a product's use, and consumers may need to be “taught” how to use the product to achieve satisfying results (Becker, 1953). Here, materiality in the design of educational materials is used to facilitate information transfer. This is particularly evident in the context of recreational marijuana, where many new or lapsed consumers may fear overconsumption of THC.

In an effort to establish legitimacy of recreational cannabis, retail service personnel in dispensaries serve a function similar to sommeliers, making personalized recommendations for a strain, dose and product delivery system based on consumers' prior experience and goals. Educational materials build cognitive legitimacy by helping consumers interpret product attributes such as the level of THC. For example, consumer packaged

good company Dixie Elixirs produces a card that is distributed at point of purchase with recommendations for product selection based on the consumer's experience with cannabis, body weight and personality type. The card's accessible design and tone not only teaches consumers how to select products to maximize satisfaction, but its presence reassures neophytes that they are not alone in needing guidance. In this way, material elements of the products and accompanying marketing materials guide use in socially desirable ways.

An important function of brands is to instil trust (Aaker 2009), and this is no less true for products in new markets. Consumers use brands as a signal for reliability and assurance, particularly under conditions of high risk or uncertainty (Erdem & Swait 2004). Indeed, branding may be particularly important in markets seeking legitimacy, because consumers have concerns about risk (Humphreys and Latour 2013). A second means that producers employ to foster trust is through packaging and product forms that protect consumers from known risks as well as facilitate successful product use. Alan, CMO of Brand A, describes the company's new chocolate bar, designed to facilitate moderate consumption:

It's almost the size of a Ghirardelli [mass market chocolate brand] square, and the good news is that it's a 10 mg piece of chocolate. We've actually demarked it into quarters, and it says on each quarter '2.5 THC.' So, you can break it off if you want, have 2 ½ milligrams, or have the whole thing in 10 mg [one adult dose]. We began the line because we quickly realized that not everyone not understands necessarily that 75mg or 100mg [of THC] is a lot and you shouldn't have all that...we want people to be able to have the whole thing, to not be scared, not have a bad experience.

These products have been strategically designed to meet regulators' standards without frightening or otherwise deterring consumers. Compliance with regulations, safety labels and re-sealable packages also ensure that prohibited consumers, such as children, do not accidentally access the product. Thus, the object's form helps guide consumers toward desired uses and away from potentially problematic ones. As such, design integrates aesthetic components – such as form, color, texture – with invitations for action (Djajadiningrat et al. 2004).

Discussion

Regulatory change is not enough to allow a mainstream market to emerge if an overwhelming majority of eligible consumers remain too apprehensive to participate. Producers of recreational cannabis goods face significant challenges in achieving normative and cultural-cognitive legitimacy. They must overcome deeply entrenched negative stereotypes about marijuana consumers, educate a marketplace of non- or lapsed-consumers with limited understanding of the modern industry, and design products that can be interpreted as normative, safe, and desirable. These challenges are deepened by the need for companies within the industry to innovate and establish competitive value in the newly created market. Each of these issues can be impacted by design. *Material in relation* focuses attention on how an object relates to other, existing, objects. Designers build congruence between (currently) stigmatized goods and accepted products in adjacent or analogous categories while also distancing the new products from other stigmatized objects. *Material in use* points to ways that material elements can facilitate successful, normative consumer acquisition and use. Producers strive to both educate and indicate relevant product information so that expectations for a product are aligned with experience and to deter normatively problematic uses.

Managing Product Design for New Markets

Our findings suggest several implications for managing products in emerging market categories. Although marijuana in the United States may be a unique context, our findings are broadly relevant to product development in any new or transitioning market.

Our findings suggest that companies should design products that activate shared knowledge structures related to legitimate market categories but be equally sensitive to undesirable associations that may be hidden by existing, taken-for-granted understanding of established markets. While recreational cannabis producers longed for the acceptance enjoyed by other goods considered legitimate for adult consumption such as alcohol, they also underscored how their products offered relative advantages, such as a propensity for calm, rather than aggressive, behaviour and the low likelihood of hangover.

In addition, we suggest that in the initial stages of legitimation, consumer acceptance will be greater if product forms (as opposed to brands) are visually like competitors', because this promotes the development of new,

shared knowledge structures of the category among consumers in ways that facilitate purchase behaviour and engagement. Our findings suggest that at least initially, producers employing a strategy featuring *material in use* do so similarly to others in the industry. This mutually-reinforcing mimicry can aid the category, particularly until a dominant design emerges (Srinivasan et al. 2006).

Prior research has demonstrated that a consumer's level of product expertise influences product adoption. Our research demonstrates that *material in relation* is a key component of producer strategy to make a previously stigmatized product acceptable and appealing to mainstream (i.e., generally novice) consumers. As managers strive to align their products' material elements away from undesirable socio-cultural meanings related to illegitimacy and toward new social meanings related to other, legitimate consumption domains, they invariably produce new, discontinuous innovations. Relating designs to existing products allows new consumers to consider otherwise intimidating products.

Our findings also suggest that designers should attend to details that facilitate consumers' cognitive associations with established, legitimate markets. Evidence in the data suggests that this can be accomplished, for example, by borrowing product form, materials, packaging, sensory elements, and branding. In our data, many producers emulated designs from legitimate product categories by using principles of similarity, difference, analogy, media, and genre.

Our recommendation to attend to design at the outset of market development diverges somewhat from results in other industries, where product design becomes more important over time (Bruce and Daly 2007). Our findings also suggest that aesthetically pleasing designs are essential to providing sensory comfort and pleasure (Bloch, 1995) and ensuring normative congruence, thereby lessening defensive tendencies and facilitating the establishment of new social norms.

Ultimately, the materiality of both products and retail spaces are critical elements of the marketing mix. Yet new products and products in previously stigmatized markets have a legitimacy problem: whether unrecognized or considered unacceptable by consumers, managers must grapple with a series of strategic decisions when (re)introducing new products. Our work underscores the importance of careful product design in concert with deep consideration of the socio-cultural environment in which products are acquired and consumed.

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