

Magical and Revolutionary? Audience Sensemaking of Apple's iPad

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**MAGICAL AND REVOLUTIONARY?
AUDIENCE SENSEMAKING OF APPLE'S IPAD**

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I dedicate this dissertation to Christy, without whose support it would not have been possible.

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MAGICAL AND REVOLUTIONARY? AUDIENCE SENSEMAKING OF APPLE'S IPAD

ABSTRACT

My dissertation examines changes in audience sensemaking by the public and media about Apple's novel product, iPad. My study begins on December 28, 2009, one-month before the introduction of the iPad by Apple and ends with the anniversary of its retail availability on April 2, 2011, shortly after the launch of the second-generation iPad. Using primarily qualitative methods, I analyze archival data including online forums and news articles to understand audience sensemaking as it unfolds. I investigate how sensemaking by the two audiences a) changes over time, b) changes with different types of material interaction with the product, c) incorporates the use of functional and symbolic frames in their public discourse about the iPad, and d) changes based on the public role of the audience. In doing so, I advance explanations as to how meanings about novel products stabilize. More broadly, I elaborate how nascent product categories can emerge by focusing on the cultural-cognitive processes that undergird product classification systems. As a result, I offer novel pathways for product category emergence.

Keywords: *Sensemaking, Novel products, Materiality, Product category emergence*

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Chapter I: Introduction

Motivation and Research Questions

“We want to kick off 2010 by introducing a truly magical and revolutionary product ... is there a room for a third category of device ... between a laptop and a smartphone? ... In order to really create a new category of devices, those devices are going to have to be far better at doing some key tasks ... Things like browsing the web ... Doing email, enjoying and sharing photographs, video, watching videos, enjoying your music collection, playing games, reading eBooks ... Otherwise, it has no reason for being ... we think we’ve got something that is ... we call it the iPad (Apple CEO Steve Jobs introducing iPad, January 27, 2010).

“I think they missed the boat on this one. Had a chance to be revolutionary but it looks like a giant iPhone” (Member of public, January 27, 2010).

“I was a hater on the iPad at first because I thought it was a big iPhone. It is NOT! Once I played with it at an Apple store I was in awe” (Member of public, April 3, 2010).

“... iPad had firmly established itself as the de facto standard of the tablet category: ... other companies when “revealing the specs of their own tablets ... are all comparing themselves to iPad” (Technology journalist, April 1, 2011).

To foreshadow my study, in this dissertation I investigate how sense made about a novel product by different audiences 1) changes over time, 2) changes with different material experiences, 3) incorporates the use of cultural frames, and 4) changes based on the public role of the audience.

As the opening quotes suggest, the meanings associated with a novel product (iPad, in this case) change over time, seemingly adjusting relative to users’ material experience with it, and the emergence of the product category of which it becomes a member. In the case of a novel product, such as iPad, that does not clearly fall within the boundaries of existing product categories, audiences must simultaneously locate the novel product relative to existing products and yet distinguish it from these in order for it to be better understood and valued (Navis &

Glynn, 2011). Existing research has focused on producers use of broad cultural frames to categorize their novel products relative to other similar products in order to influence the sense made by key audiences (Lounsbury & Glynn, 2001; Martens, Jennings, & Jennings, 2007; Zhao, Ishihara, & Lounsbury, 2013; Zott & Huy, 2007). But, as the quotes illustrate, the meanings advanced by the producer of the new product do not necessarily match those of the audience, at least at the same point in time. More importantly, we know that due to different interests, roles, and the types of material experiences with the product, these audiences rarely accept or internalize a producer's meanings as given (Kaplan & Tripsas, 2008; Navis & Glynn, 2010; Rosa, Porac, Runser-Spanjol, & Saxon, 1999) and rarely construct the same meanings as one another. This raises questions about how different audiences attach meaning to new, unfamiliar products; addressing these questions is the impetus for my dissertation.

When audiences—"collections of agents with an interest in a domain and control over material and symbolic resources that affect the success and failure of the claimants in the domain" (Hsu & Hannan, 2005: 476)—attempt to attach meaning to new, unfamiliar products, they encounter significant cognitive and behavioral challenges. To overcome these challenges, audiences frequently engage in public discourse. But, as Weick (1995) reminds us, this public discourse is more than simply the transmission of information, it is the site of sensemaking—the ongoing retrospective "process through which people work to understand issues or events that are novel, ambiguous, confusing, or in some other way violate expectations" (Maitlis & Christianson, 2014: 57). Sensemaking is required because the very novelty of the new product can paradoxically allow audiences to construct both too few and too many interpretations (Weick, 1990). As a result, audience sense of the novel product is equivocal and can be elusive (Orton, 2000).

Therefore, audience sensemaking is ongoing, suggesting that any investigation into how different

audiences attach meaning to new, unfamiliar products, should consider how such meanings change over time.

As the quotes hint, when a sensemaker is only able to interact indirectly with a novel product, sensemaking appears to focus on visual cues, e.g., iPad “looks like a big iPhone,” but when the sensemaker is able to materially interact with the novel product, sense is liable to change, e.g., “I thought it was a big iPhone. It is NOT! Once I played with it.” This suggests that the materiality of the novel product, i.e., the product’s “tangibility or ‘material existence’ (Carlile, Nicolini, Langley, & Tsoukas, 2013b: 4)” (Watkiss & Glynn, 2015: 5) has implications for audience sensemaking. The tangibility of the product enables audiences to engage in different types of material experience with the product. And, as a result of these different material experiences it would appear that audience sensemaking is subject to modification. Yet, despite, these hints at the importance of materiality, it is unclear how these changes in sensemaking might occur as the nature of the material experiences change.

In summary, although existing research has suggested hinted at the importance of time, materiality, and cultural frames on audience sensemaking about novel products, we have limited understanding of how these changes in sensemaking unfold. Therefore, I seek to analyze these by focusing on sensemaking about a novel product and a nascent product category by two audiences—general public and media—that differ based on their public role. Therefore to address my overarching research question of *How do audiences make sense of a novel product and a nascent product category?* I ask four more specific questions: 1) *How does audience sensemaking change over time?* 2) *How does audience sensemaking change with different types*

of material experience? 3) How does audience sensemaking incorporate the use of cultural frames? 4) How does the audience's public role affect sensemaking about a novel product?

Approach

I answer these questions using an inductive, primarily qualitative research design (Strauss & Corbin, 1990) of audience sensemaking about one product, Apple's iPad. I focus on two key audiences: the general public and media. Existing research (Kaplan & Tripsas, 2008; Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999; Tushman & Rosenkopf, 1992) has shown how these audiences are important actors in making sense of novel products and product categories, who differ in their public role; the technology media's role is to inform the general public about the novel product (Hirsch, 1972, 1975; Navis & Glynn, 2010; Zuckerman, 1999).

I use a longitudinal design to consider the importance of time and material experience with the novel product on audience sensemaking. The time period of investigation for this study begins on December 28, 2009 and ends on April 2, 2011. The starting point was chosen because it marked one month prior to Apple's introduction of iPad on January 27, 2010. This allowed me to track sensemaking prior to the confirmation by Apple that a product even existed. The end point of April 2, 2011, the first retail anniversary of iPad, marked the arrival of the second-generation of iPad as well as third-party tablets on retail shelves; by this time, the nascent tablet product category had emerged.

I rely on archival data. For the general public, I collected discourse about iPad in online forums. And, for the media, I collected news articles and commentaries by technology journalists. I conducted primarily qualitative analyses that I supplemented with quantitative content analyses.

This involved both hand-coded and computer-aided text analysis to reveal underlying patterns in my data as well as a detailed thematic analysis to make sense of these patterns.

Contributions

This dissertation makes several contributions to the extant literature. Because I examine *how* audience sensemaking about novel products and nascent category emergence, I complement and extend existing research on the emergence of meanings associated with product innovations (Benner & Tripsas, 2012; Kaplan & Tripsas, 2008; Tripsas, 2009) and new product emergence (Hargadon & Douglas, 2001; Navis & Glynn, 2010; Rosa et al., 1999). First, my research reveals that audience sensemaking of a novel product is largely independent of the meanings proffered by the producer. Second, I elaborate how audience sensemaking changes over time, with different material experiences, and as a result of the public role of the audience. In doing so, I offer explanations as to how meanings of a novel product stabilize. Third, I elaborate how nascent product categories can emerge by focusing on the cultural-cognitive processes that undergird product classification systems. As a result, I offer novel pathways for product category emergence.

Methodologically, by using novel data in the form of online forums, I contribute to management scholarship by providing an early examination of this increasingly important avenue for public discourse. Forums are web message boards that allow public discourse by enabling participants to engage in discussions at their convenience (Byrne, 2007; Im & Chee, 2006), and that simultaneously increases their degree of comfort and reduces their resistance to contribute freely. Therefore, it provides an important window into audience sensemaking as it unfolds.

Organization of Dissertation

This dissertation comprises six chapters. In Chapter II, which provides a theoretical grounding for my dissertation research, I review the literatures related to product category emergence, and sensemaking to explain what we currently know about the evolution of sense made by two key audiences, public and media, of a novel product. I conclude that despite existing research offering a descriptive account of sense made about novel products, we need a better understanding of how sense made about a novel product 1) changes over time, 2) changes with different types of material experience with the novel product, 3) incorporates the use of cultural frames, 4) changes based on the public role of the audience.

Next, in Chapter III, I move to a description of the research design, including data collection, data analyses, and research context. I show how I investigated the evolution of sense made by two key audiences—forum participants and technology journalists—of the novel product iPad. I conducted primarily qualitative analyses that I supplemented with quantitative content analyses on archival data from multiple sources.

In chapters IV and V, I elaborate my findings, organized by audience around their changing meanings for iPad. In Chapter IV, I present the findings from my analysis of the forum participants. In Chapter V, I present the findings from my analysis of the technology journalists; here I also consider how the public role of the audience affects their sensemaking, and compare and contrast sensemaking between the two audiences more generally.

In chapter VI, I move from a description of sense made about iPad toward a more general theory as to how audiences make sense of novel products and reconsider the role of producers in that process. I conclude with contributions, limitations, and areas for future research.

Chapter II: Theoretical Grounding

In this chapter, I draw from the literatures on sensemaking, and the emergence of new consumer products to address my overarching research question: *How do audiences make sense of a novel product and a nascent product category?* As in many inductive studies this literature review serves to anchor the research questions, inform the methods, and provide direction for the data analyses that follow (Dutton, Worline, Frost, & Lilius, 2006; Harrison & Rouse, 2014; Nag, Corley, & Gioia, 2007).

I organize this chapter in five main sections. The first section introduces the broad theoretical puzzle this study attempts to address. I argue that despite a wealth of research that demonstrates the importance of shared understandings of novel products for well-functioning markets, a nuanced understanding of the evolution of how different audiences craft their understandings of novel products is lacking. In the second section, I explain what we know from the existing literature. In the remaining three sections, I provide an overview of how, theoretically, I intend to address the gaps in the current literature. In the first of these, I theorize the role of time in the evolution of sense made about a novel product; next, I theorize the role of materiality; finally, I focus on how cultural frames provides another mechanism through which actors experience and express product meanings via public discourse. Within each of these three sections, I do two primary things: first, I layout more focused research questions that drive my empirical analyses; and, second, I consider how sensemaking may differ for audiences with different public roles.

Introduction

Broadly shared understandings of products are essential if markets are to function effectively (Glynn & Navis, 2013; Kennedy, 2008; Lounsbury & Rao, 2004; Zuckerman, 1999). Yet, when a new product is introduced to the market, its meanings are rarely clear (Navis & Glynn, 2010; Rosa et al., 1999) with audiences “unsure about what it is or how it will perform” (Kaplan & Tripsas, 2008: 790). The newness of the product suggests too many plausible interpretations (Weick, 1990), making understanding equivocal, seemingly elusive (Orton, 2000), and unpredictable. This has important consequences. For audiences: if they do not know what type of product it is, they are less able to evaluate it or make informed purchase decisions. For the producer: if it is unable to control or predict the product’s meanings, it is less able to benefit from advantages that are conferred when the product is perceived to be distinctive from existing products and product categories (Kennedy, 2008; Lounsbury & Rao, 2004; Navis & Glynn, 2010; White, 1981). In the case of a novel product that does not fall within the boundaries of existing product categories, audiences must locate the novel product relative to existing products to create familiarity (McKinley, Mone, & Moon, 1999); as Hargadon & Douglas (2001: 478) tell us, “there is no such thing as an immaculate perception.” Yet, by emphasizing such resemblance, the novelty of the new product may go unnoticed or fail to be valued. Thus, audiences must also distinguish the new product from existing ones if they are to understand it as categorically novel (Navis & Glynn, 2011). This creates a dilemma: audiences must perceive the novel product as natural and familiar but also distinctive enough to be considered valuable or desirable (Anteby, 2010; Rosa et al., 1999).

As a result of this dilemma, the preponderance of existing organizational research focuses on attempts by producers to reduce equivocality and control product meanings by providing their

audiences with ready-made interpretations (Kennedy, Lo, & Lounsbury, 2010). For instance, Nintendo revolutionized the game console with its *Wii* by framing it around physical activity and family entertainment (Verganti, 2013). Professional money managers in New York, over the course of several decades, were able to cultivate a more active money management model of mutual funds that spurred a whole range of new products by emphasizing speculative investing, risk management, and short-term returns (Lounsbury, 2007). Or, a group of young French chefs, who also over the course of several decades, re-framed the meaning of *haute* cuisine in order to create the new sub-category of *nouvelle* cuisine (Rao, Monin, & Durand, 2003, 2005). This work also suggests that audiences tend to look to the producer of the novel product for guidance (Navis & Glynn, 2010; Rosa et al., 1999) when they construct their own sense of the novel product.

Yet, we also know that due to different interests and experiences, these audiences rarely accept or internalize a producer's meanings as given (Kaplan & Tripsas, 2008; Navis & Glynn, 2010; Rosa et al., 1999). Instead they engage in their own interpretative processes to understand and evaluate the novel product. I conceptualize this as a process of sensemaking (Weick, 1995).

Generally speaking, sensemaking is the rhetorical process by which audiences reduce uncertainty about novel, ambiguous, or confusing entities (Maitlis & Christianson, 2014; Weick, Sutcliffe, & Obstfeld, 2005) such as novel products by categorizing them relative to pre-existing understandings. To the extent that pre-existing understandings answer the questions of what the novel product is and what it does, audiences are better able to make sense of it, to materially interact with it, and to evaluate it. And, no further sensemaking is required. But, in the case of a novel product that does not fit neatly into an existing product category, meanings are equivocal. Therefore, ongoing sensemaking is required, suggesting that product meanings evolve over time.

Audience Sensemaking Via Public Discourse

Existing research suggests that sensemaking about a new product is a collective activity that manifests and stabilizes in public discourse (Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999). Discourse is important because central to sensemaking is the idea that people experience and express meaning through words. As Weick (1995: 106) makes clear, “[s]ense is generated by words that are combined into the sentences of conversation to convey something about our ongoing experience. If people know what they think when they see what they say, then words figure at every step.” In the context of novel products, the choice of words can have powerful effects on sense made. For instance, when *Cirque du Soleil*, a pioneer of the *nouveau cirque* efforts to extend the circus category, was first introduced to English speaking audiences as “Circus of the Sun,” audiences were confused—whereas French-speaking consumers were not—because the title (with the word “circus”) seemed to anchor on a traditional circus. However, when relabeled as *Cirque du Soleil*, audiences were able to see a distinct form of entertainment, albeit resembling a traditional circus (Maleval, 2010).

As this example suggests, the words used by any specific actor “matter first to some larger collectivity” (Weick, 1995: 107). Using a language metaphor, Weick (1995) describes these words as publicly available vocabularies. These vocabularies are constructed by prior social experience (Weber, 2003), are broadly available to members of a particular community, and provide the tools through which actors can engage in discourse to make sense of a current situation or entity (Weick, 1995). In the context of a consumer product, this discourse frequently occurs in public. Through language that is transmitted via public discourse that emerges from, and is constituted by regular and repeated interactions among actors, “thinking can take place” (Wuthnow, 1989: 13) and product meanings can be constructed.

From a large body of work, we know that different audiences engage in public discourse to create different product meanings (Benner & Tripsas, 2012; Kaplan & Tripsas, 2008; Kennedy, 2005, 2008; Navis & Glynn, 2010; Pinch & Bijker, 1987; Porac, Thomas, & Baden-Fuller, 1989; Rosa et al., 1999; Tripsas & Gavetti, 2000; Tripsas, 2009). For instance, Orlikowski and Gash (1994) show how one key audience, users, shared similar professional backgrounds and similar roles also shared similar assumptions and understandings about the adoption of Lotus Notes software that was introduced to their company. As Kennedy (2008) showed in his study of the introduction of computer workstations, public discourse brings both visibility to particular product meanings and over time a degree of coherence to those meanings by “building a shared mental map of associations” (Kennedy, 2008: 272) for a particular audience. I conceptualize these audiences as “collections of agents with an interest in a domain and control over material and symbolic resources that affect the success and failure of the claimants in the domain” (Hsu & Hannan, 2005: 476).

Key audiences who have been shown to construct distinctive meanings about novel products include the general public and critics in the form of analysts and the media (Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999; Tushman & Rosenkopf, 1992). These audiences not only have differing interests but also tend to have differing public roles. For instance, the media is afforded the role of informing public about the novel product, whereas the general public’s role often focuses on understanding the product so as to make purchase decisions. This might suggest that the media has more experience than the general public in making sense of novel products. Since, those with more experience have been shown to have a broader range of possible meanings from which to draw than those with less expertise (Day & Lord, 1992; Rudolph, Morrison, & Carroll, 2009), this might suggest that the media has a larger toolkit,

thereby facilitating greater nuance to their sensemaking than is the case for the general public. Or, their role as savant might cause the media to be less likely to alter product meanings for fear of being seen as uninformed or lacking expertise.

Yet although different audiences with differing roles are likely to construct different meanings, and these different meanings are likely to be important for the creation of any negotiated or collective meanings crafted (Kaplan & Tripsas, 2008), it is unclear *how* different audiences experience and frame product meanings and how these meanings evolve. Rather, the literature offers a descriptive account of differential meanings based on identity or experience with the product. In summary, despite the importance of shared understanding of novel products for well-functioning markets, a nuanced understanding of the evolution of *how* different audiences with varying public roles frame their understandings of novel products, and how these understandings change over time or with differing types of material experience with the product. This is the focus of this study.

Sensemaking about Novel Products and Existing Product Categories

The literature on understanding the emergence of new products focuses on how meanings arise via public discourse (Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999) is prefaced by the question, “what type of product is this”? As a result, interpretations of a novel product are grounded within understandings of existing products and therefore inextricably linked to product categories (Anthony, Nelson, & Tripsas, 2016; Hsu, Hannan, & Koçak, 2009; Hsu & Hannan, 2005; Kaplan & Tripsas, 2008; Kennedy, 2005, 2008; Navis & Glynn, 2010; Rosa et al., 1999). A product category is a socially constructed partition that groups together products perceived to be similar (Bowker & Star, 2000; Grodal, Gotsopoulos, & Suarez, 2015). The process of placing a specific product within a particular category makes that product “more understandable because

it furnishes a conceptual label, or a set of meanings, that are applied to the entity, thereby distilling it into a condensed form; as such, the conceptual order of the category substitutes for the perceptual order of experience” (Glynn & Navis, 2013: 1126). This links perceptual system of product categories to the materiality of the novel product. By materiality, I refer to the product’s “tangibility or ‘material existence’ (Carlile, Nicolini, Langley, & Tsoukas, 2013b: 4)” (Watkiss & Glynn, 2015: 5). These categorical meanings describe the core material features of the category, link its constituent members, and are conveyed in the form of a category label (Grodal et al., 2015; Kennedy, 2005; Mervis & Rosch, 1981; Navis & Glynn, 2010; Rosa et al., 1999).

Therefore category membership furnishes meanings that are shared by all members; and, membership in one category at a particular level of specification precludes membership in another. This implies that the act of categorization is predicated upon the broader classification system in which the product is embedded (Glynn & Navis, 2013). This is particularly true when novel products do not conform to existing categories. For instance, when Dodge launched the Caravan, or Toyota, the Van, or Plymouth, the Voyager, they used the existing classification system that included the car, the truck, and, even non-road using vehicles to suggest that these boxy vehicles were a type of car that was distinctive from existing cars like the sedan.

Consumers used these same categories in their own sensemaking and over time came to perceive these boxy vehicles as *minivans*, a sub-category of car and a nascent product category (Rosa et al., 1999) alongside the sedan. Therefore, a growing body of literature has shown how product categories provide a “supple conceptual system” (Glynn & Navis, 2013: 1124) that allows producers and their audiences to create new product categories to account for the introduction of

the novel product (Anthony et al., 2016; Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999; Weber, Heinze, & Desoucey, 2008).

Sensemaking about novel products that emphasize categories has relied heavily on the use of analogy to bridge the novelty of the new product with the understandability of existing ones (Grodal et al., 2015; Navis & Glynn, 2010; Suarez, Grodal, & Gotsopoulos, 2015). An analogy is a statement across different domains to make the unfamiliar familiar, enabling the understanding of one thing in terms of another (Cornelissen, Holt, & Zundel, 2011; Cornelissen, Oswick, Christensen, & Phillips, 2008; Cornelissen, 2008; Lakoff & Johnson, 2003). Analogy “invites us to see similarities and differences between two concepts, and to see the one concept in terms of the other, making its meaning inherently more profound and exotic than a rendering of the pre-existing similarities between the conjoined concepts might suggest” (Cornelissen, 2005: 755). Gareth Morgan (1986) applied analogical framing to an organization by comparing it to a machine, an organism, a brain, a psychic prison, and an instrument of domination, among others. An organization is literally none of these; however, the analogical comparison draws attention to the similarity or likeness that aspects of organizations bear to these other entities.

By using analogies, actors reduce ambiguity by tethering the new product to preexisting conventions (Navis & Glynn, 2010) and make the novelty of an innovation more comprehensible (Cornelissen et al., 2011; Martens et al., 2007). Thus, novel products that do not fit into existing product categories are often made sensible by their similarities and differences to those categories that are perceived to be perceptually closer. For instance, Kennedy (2005) has shown that the media made sense of the new product of computer workstations as categorically novel by suggesting that although it was similar to existing minicomputers, its size suggested it was more

personal and therefore distinctive from the existing product category. Or, Hargadon and Douglas (2001) have shown that New York City regulators perceived Edison Illumination Company's innovative electrical lighting system as similar to pre-existing gas lighting systems and therefore organized the novel product under existing gas statutes, thereby enabling Edison Illumination Company to install its electrical power lines beneath the streets of New York City. Once consumers began to use the novel lighting system, they began, with the help of the producer, to perceive the two systems as categorically distinctive. Finally, others have shown that critics or the general public make sense of novel products by blending multiple categories, e.g., satellite radio is understood via satellite television and terrestrial radio (Navis & Glynn, 2010) or minivan, via car and truck (Rosa et al., 1999) or micro-finance, via social business and banking (Battilana & Dorado, 2010) to construct a singular meaning (Kennedy et al., 2010). In doing so, these various audiences demonstrate that they perceive the novel product to be distinctive from existing product categories. Thus, the use of analogies requires an imaginative leap; it builds on the human proclivity to understand reality comparatively (Barthes, 1977), which can be effective in breaking down a complex, hard-to-understand entity, such a product innovation, into more understandable bits.

For novel products, existing research has focused on these "understandable bits" as the physical attributes and the basic functional parameters or the ways the product is used (Clark, 1985; Hargadon & Douglas, 2001; Kaplan, 2011; Kennedy, 2005; Navis & Glynn, 2010; Rosa et al., 1999). The materiality of the product acts as a form of cognitive anchor around which sense is made. Guided by mental or cultural models, actors notice and bracket certain aspects (Weick, 1995) of the product's materiality, to truncate, simplify, and filter (Berger & Luckmann, 1967; Goffman, 1963) the novel product to make sense of it. In doing so, people "forcibly carve out"

(Chia, 2000: 517) cues from all the possibilities available. As the potential variety of these cues provides multiple dimensions (Yoxen, 1987) upon which the new product is made sensible and evaluated (Ravasi & Canato, 2010; Tushman & Rosenkopf, 1992), the new product is subject to a wide range of comparisons and plausible interpretations. And, yet, the actions of noticing and bracketing certain elements of the new product enable audiences to more easily compare it to existing products. For instance, Edison Illumination Company's electrical system became sensible in part when members of the public grounded their understanding in existing gas-fueled systems by considering the similarity of its function of providing lighting to corporate and domestic customers (Hargadon & Douglas, 2001). Or audiences began to make sense of the modern Indian art as distinctive from traditional Indian art when they considered the art to combine the iconography from traditional Indian art with the aesthetics and technical innovation from Western modernism (Khaire & Wadhvani, 2010).

As discussed above, a key aspect of associating the novel product with both a category and certain attributes is to suggest both similarity with and distinction from existing products or product categories. Thus, this process involves an abstraction of which attributes of the novel product are "essential" (Mervis & Rosch, 1981: 103) for it to be perceived as categorically distinctive from existing products. Lakoff (1987) argues that in cognitively combining these attributes into unique perceptual clusters, actors are able to make sense of the novel entity as distinctive from existing offerings, thereby providing the potential for a new category to arise. For instance, consumers of the emerging minivan emphasized the physical attributes of "front-wheel drive," "low step-in height," "seven passenger," and "[large] cargo space" (Rosa et al., 1999: 67) in order to distinguish this puzzling truck-car hybrid from the sedan. It is not the mere presence of these attributes that made a minivan the family vehicle of choice for American

suburbia, it was the clustering of these attributes and the packaging of them into a story of safety and comfort that allowed consumers to distinguish the minivan from the family sedan, thereby creating a new product category.

My review suggests that we have a broad sense that audience sensemaking about novel products can change over time via public discourse and is grounded in both in existing product categories and the materiality of the novel product. In this study, I complement this work by analyzing *how* audience sensemaking changes over time or with changes in the type of material experience with the product. My review also hints at the importance of broader cultural meanings without explicitly examining its role. I therefore organize the remainder of this literature review around time, material experience, and culture. Since the role of the audience is generally shown to be important, I also infuse these three sections with implications of the public role of the audience.

Role of Time in Audience Sensemaking

Empirical work into the product category emergence has hinted at the importance of time. For instance, this work has shown that as a new product moves from being an abstract idea to something tangible, familiarity reduces the need people have for using analogy (Powell & Colyvas, 2008). And, over time the comparison of the novel product to established categories is reduced (Navis & Glynn, 2010; Rosa et al., 1999). Instead, with the emergence and stabilization of the novel product category, sensemaking is presumed to shift, from emphasizing the metaphoric similarity of the novel product to its distinctiveness from other members of the emerging category (Kennedy et al., 2010; Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999). At this point, the emerging category becomes part of the broader conceptual system that is then used to make sense of other products (Rosa et al., 1999). But, beyond a broad understanding that audiences use analogies less frequently over time and with the emergence of the product

category, we have limited understanding of *how* sensemaking of a novel product changes over time. Hence I ask the question: *How does audience sensemaking change over time?*

Time may be important because early meanings may be resilient to change. Hannigan (2012) finds that audiences' categorization of novel products from public rumors they encounter prior to a novel product's introduction to the marketplace rarely changes over time. This suggests that early-stage sensemaking is consequential because the use of analogies and the act of categorization place the novel product within a classification system; that placement provides broad understandings of the novel product, which stabilize early and become resistant to change. Therefore, we might expect that not only do audiences use analogies less frequently over time, but also they rarely add new analogies after their initial selection. Thus, I ask the question: *How do audiences alter their categorization or add new analogies in their sensemaking about a novel product over time?*

But, it says little about how these analogies and the categorical placements are used to construct more specific interpretations of the novel product (Grodal et al., 2015), and how these change over time. As Weber, Heinze, and DeSoucey (2008) explain, audiences at the outset understood that the grass-fed beef movement was analogous to the factory-farming beef category. However, as they became more familiar with grass-fed beef, audiences were able to understand it in terms of authenticity, naturalness, and sustainability, which placed grass-fed beef in direct opposition to the factory-farming beef category. As a result grass-fed beef was understood as categorically distinctive, something that would have been difficult prior to the broader environmental movement that had grown in the last decade of the twentieth century that eschewed human intervention and large-scale production. This would suggest that although the salient analogies

are stable, the meanings derived from them about the novel product are not. Thus, I ask the question: *How does audiences' use of categorization and analogies to construct product meanings change over time?*

Kaplan and Tripsas (2008) have theorized that at the outset when audiences have not directly experienced the novel product they craft their interpretations based on their understandings of existing products as well as relying on the interpretations being made by other similar actors. This suggests that different audiences, due to a lack of familiarity with the novel product will likely use a different analogies to construct a wider variety of product meanings at the outset. Whereas later, each audience will likely draw from a more similar pool of analogies as all audiences become both increasingly familiar with the product and with the analogies used by other audiences due to public discourse. In line with Kaplan and Tripsas (2008), we might also expect that if a product category emerges, then it is likely that different audiences' meanings have tended to converge.

It is also possible that early sense made in the form of analogies used and the resultant meanings by audiences whose public role suggests with more experience (Day & Lord, 1992; Rudolph et al., 2009) making sense of novel products might be more resistant to change. Their role might enable them to craft more plausible interpretations sooner than those who have no such formal role or they might be less inclined to alter a previously stated interpretation. Alternatively, a more lay audience with less experience making sense of novel products might be less inclined to alter their use of analogies and earlier product meanings because they have fewer and less nuanced understandings of existing products or fewer reliable similar others upon which to draw; alternatively, they may be more inclined to alter a previously stated interpretation since it is less

likely to have an impact on their reputation. Therefore, it is unclear the effect of how the public role of the audience affects how sensemaking about novel products changes over time. Thus I ask the question: *How does the audience's public role affect sensemaking about a novel product change over time?*

Role of Materiality in Audience Sensemaking

How materiality impacts sensemaking about novel products has been largely unacknowledged in the extant literature. There are, however, hints in the existing literature that materiality plays an important role into two ways: first, the tangibility of the product and its constituent parts are presumed to influence sense made; and, second, the type of experience with the product is acknowledged, though rarely empirically examined, to influence sense made. Hence I ask the question: *How does audience sensemaking change with different types of material experience?*

In line with a broader “material turn” that is occurring within the social sciences such as Appadurai’s *The Social Life of Things: Commodities in Cultural Perspective* (1988) or Hicks and Beaudry’s *The Oxford Handbook of Material Culture Studies* (2010), existing research in organizational studies has shown that the physical properties of a novel product provide some of the building blocks for sensemaking (Navis & Glynn, 2010; Ravasi & Canato, 2010; Rosa et al., 1999; Tripsas & Gavetti, 2000). As somewhat objective and finite, these building blocks can act as a cognitive anchor around which sense is made by reducing the number of plausible interpretations available. And, since these properties are only changed periodically, i.e., they are largely constant in the short-term, we would expect that the number of physical properties that are also used to make sense of a novel product is also not subject to wild fluctuations.

More importantly, there are hints that the type of material experience with the product can also influence sense made. Kaplan and Tripsas (2008) theorize that direct experience alters sensemaking, in part, because, the sensemaker becomes less reliant on the interpretations of others. For instance, Verganti (2013) shows how consumers' sensemaking of Nintendo's *Wii* changed to incorporate ideas of physical fitness and family entertainment following material interaction with the console and playing games such as *Wii Fit*. Or, Rosa and colleagues (1999) suggest that consumers' sense made about the minivan altered once they drove one.

For many, the first experience of a new product is vicarious. They hear about the product from a friend, or colleague, or the media, or from the producer in the form of advertising. In these situations, sensemaking about novel products is rooted in public discourse and devoid of material interaction. Even in the situation where a producer launches a new product and simultaneously makes it available for purchase, many audiences will experience the product visually prior to material interaction: they see the new product in the store or in a television commercial, or observe it being used by the person sitting next to them on the train. These experiences are different from one another. In the case of hearing about the new product from a third party, sensemakers are almost solely reliant on the interpretations of others, as theorized by Kaplan and Tripsas (2008). However, in the case of observing the new product from afar, sensemakers may be able to incorporate visual cues such as size and shape.

These different material experiences provide different lenses (Kaplan, 2011; Stigliani & Ravasi, 2012; Watkiss & Glynn, 2015) through which the novel product can be seen, understood, and evaluated. Moreover, as the nature of the material experience becomes more direct or tangible, it is possible that product meanings are partially crafted by an embodied as well as a cognitive

process (Whiteman & Cooper, 2011). This is consistent with work in cognitive psychology which shows that categorization often relies on physical interaction with the product (Rosch, 1978). The motor movements engaged in using the novel product influence the perception of that product including the attributes that get noticed (Lakoff, 1973), the analogies that get invoked, its categorical membership. This might also suggest that the user experience provides a different dimension around which novel products can be understood. As the minivan and Nintendo *Wii* studies show, audience sensemaking changed with direct experience to emphasize categorical novelty based on what the *what* the novel product was or did. But, both leave open the possibility that novel products can be understood as categorically distinctive based on *how* it performs its functions.

In summary, we would expect several things to occur as the nature of the experience with a new product changes: 1) although the number of physical properties that are used to make sense of a novel product may not be subject to wild fluctuations, the distribution of which ones get noticed (Kaplan & Tripsas, 2008) would change; 2) the choice of analogies invoked would also change; 3) the categorization of the novel product would change; and 4) how these attributes and analogies are embellished and the subsequent product meanings would change. It is just unclear, *how*. Thus, I ask two questions: 1) *How do audiences' use of physical properties, analogies, and categorization change with different types of material experience with the novel product?* 2) *How does audiences' use of physical properties, analogies, and categorization to construct product meanings change with different types of material experience with the novel product?*

We might expect changes in the type of material experience to have less effect on those audiences whose public role is making sense of novel products (Day & Lord, 1992; Rudolph et

al., 2009). Their role might afford them more varied technological frames (Kaplan & Tripsas, 2008) that enable them to craft plausible interpretations vicariously that would be subject to less updating with different types of material experience; or, they might be less inclined to alter a previously stated interpretation for fear of a negative impact to their reputation. In contrast, we might expect that a lay audience with less experience making sense of novel products might be more reliant on a variety of types of experiences with the novel product to craft stable, plausible meanings; or they may be more inclined to alter a previously stated interpretation since it is less likely to have an impact on their reputation.

We might also expect that as an audience's interactions with a new product become both more varied and more tangible, the audience is able to triangulate interpretations to arrive at more stable product meanings. As a result of the similar nature of the material experiences with the novel product, this might suggest that different audiences' use of attributes, analogies, and the meanings that are crafted are more likely to become similar over time. It might also suggest that use of attributes, analogies, and the meanings that are crafted by general public are more likely to converge on the meanings of those of audiences whose role it is to inform the general public than vice versa. Again, it is just unclear, *how*. Thus I ask the question: *How does the audience's public role affect changes in sensemaking about a novel product with different types of material experience?* Since, the nature of the material experience with novel products has rarely been the subject of systematic attention and novel products routinely require users to materially interact with them, extending research in this direction should bring new insights.

Role of Culture in Audience Sensemaking

Public discourse is the site where sensemaking about a novel consumer product unfolds: audiences rely on others' discourse to influence the aspects of the novel product to which they

pay attention, to what can be done on it or how to use it, and the criteria upon which they evaluate the product. This hints at the idea that these various audiences experience and express meaning through culture—“the publicly available symbolic forms through which people experience and express meaning” (Swidler, 1986: 273). And, because sensemaking is expressed through words, the aspect of culture that is most pertinent is language. Through language that is transmitted via public discourse, culture provides a central vehicle through which novel product meanings can be constructed (Lounsbury & Glynn, 2001; Wry, Lounsbury, & Glynn, 2011).

We know from a number of studies (Christiansen & Lounsbury, 2013; Lounsbury, 2007; Raffaelli, 2013) that producers employ broad cultural themes to frame their interpretations (Anteby & Anderson, 2014; Giorgi & Weber, 2015) in order to make the novel product more credible, distinctive, and desirable. A frame is “an interpretive [schema or script] that simplifies and condenses the ‘world out there’ by selectively punctuating and encoding objects, situations, events, experiences, and sequences of actions within one's present or past environment” (Snow & Benford, 1992: 137). Thus, a cultural frame acts as a mechanism (Giorgi, Lockwood, & Glynn, 2015; Glynn & Watkiss, 2012) that can function to encode shared frames of reference, to direct attention, and to make the novel product both more understandable and more desirable.

In general, this work has shown that producers use functional or symbolic frames to reduce the equivocality associated with novel products by assembling and distilling something complex into “recognizable, cogent, defensible, and seemingly rational collective accounts” (Boje, 1991: 106). Grounded in experience, history, and collective memory (Anteby & Molnár, 2012; Halbwachs & Coser, 1992; Suddaby, Foster, & Quinn Trank, 2010) frames can tie together seemingly independent and disconnected elements in ways that serve to reduce uncertainty (Lounsbury &

Glynn, 2001) and make the novel products more desirable. For instance, Lounsbury (2007) cataloged how New York City money management firms tapped into emerging cultural themes of “portfolio management theory and financial economics” (Lounsbury, 2007: 290) to craft stories of rationalized investment decisions in terms of risk preferences that might vary across the life course of an investor to create a new, active money management model of mutual fund investing in the middle of the 20th century. This challenged the existing understandings, emanating from Boston, of mutual fund investing that focused on the preservation of wealth. The result, over time, was a slew of new mutual fund products that were perceived as more resonant to the growing middle class. By framing the novel product in portfolio management theory and financial economics, the producer was able to embed the functionality of the novel product within a broader cultural discourse to increase its legitimacy.

Frames may also draw from a broad range of cultural themes including notions of place, history, nostalgia, and broader societal trends (Glynn & Halgin, 2011). In doing so, frames help actors craft meanings for the novel product that can move beyond the functional or descriptive to the symbolic or evaluative. For instance, Raffaelli (2013) shows how The Swatch Group was able to symbolically frame a watch as a fashion accessory that should be paired with outfits in the same way one would select a tie. Over time, there is some sense that when the symbolic frames used by producers (Benner & Tripsas, 2012; Christiansen & Lounsbury, 2013; Lounsbury, 2007; Rosa et al., 1999) resonate with their audiences, they are more likely to increase audience interest and commitment (Glynn & Watkiss, 2012; Lounsbury & Glynn, 2001) because they appear natural and familiar. Thus, symbolic frames not only explain the novel product but also lend it authenticity and desirability (Glynn & Watkiss, 2012) and thereby increase its appeal and valuation (Small, Harding, & Lamont, 2010). Such framing can be particularly potent under

uncertainty as in cases when audiences are confronted with a novel product they need to evaluate that they have no experience of using (Lounsbury & Glynn, 2001; Martens et al., 2007), suggesting that such frames may be more widely used before the product becomes familiar.

As this review makes clear, the existing literature has focused on the role of the producer in using both functional and symbolic frames in crafting product meanings that over time, if resonant, are incorporated into audiences' understandings of the novel product. To date, we have limited sense of how if at all audiences use either functional or symbolic frames in their own sensemaking. For instance, one could imagine that audiences would be relatively more inclined to use symbolic frames at the outset because they are unfamiliar with the novel product and move to a more functional framing of the product with increased familiarity. However, one could also imagine the obverse with audiences relatively more likely to ignore the symbolic aspects of the novel product at the outset as they struggle to make sense of the basic technology and functionality of the novel product; once they comprehend the basic functionality, they shift to a more symbolic understanding. Thus, I ask the question: *How does audiences' use of functional and symbolic frames in their sensemaking about a novel product change over time?*

Similarly, symbolic or functional frames might be more or less likely to be implicated based on the nature of the material experience with the novel product. For instance, one could imagine that audiences would be more inclined to rely on symbolic frames when their experience with the novel product is vicarious. And, as they directly experienced the novel product, one could imagine that they would be more inclined emphasize the functional aspects of the product as they became more salient and tangible. Yet, the obverse is also possible. Thus, I ask the question: *How does audiences' use of functional and symbolic frames in their sensemaking about a novel*

product change with different types of material experience? In short, we have a sense that symbolic and functional frames are implicated in audience sensemaking about a novel product, but it is unclear how. Since, the topic has rarely been the subject of systematic attention, extending research in this direction should bring new insights.

Chapter Summary

My literature review has shown that most existing empirical work on the evolution of product meanings has focused on the product category level of analysis, paying attention to the role of the producer. In this work, researchers have emphasized how producers' use analogies evolves over time in the creation of nascent product categories (Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999). In this study, I complement this work by focusing on a single product, which is intended by the producer to be the founding member of a new product category. This allows me the opportunity to observe the nuances of how sensemaking about a particular product unfolds (Weick, 1995). In particular, I examine how audience sensemaking changes over time or with changes in the type of material experience with the product and incorporates the use of cultural frames. In doing so, I seek to build-on a growing body of work in organizational theory that emphasizes the importance of material experience (Kaplan, 2011; Stigliani & Ravasi, 2012; Watkiss & Glynn, 2015) and the temporal sequencing of those experiences on meaning creation in order to understand how product meanings change via public discourse by two key audiences: general public and media. In the next chapter, I outline the research design of this study.

Chapter III: Research Design

I used an inductive, primarily qualitative research design (Strauss & Corbin, 1990) of audience sensemaking about one product, Apple's iPad. I draw from studies on the emergence of new product and market categories (Navis & Glynn, 2010; Rosa et al., 1999), and examine how different audiences may construct different product meanings and that these meanings evolve over time. I focused on the sense made by two key audiences: members of the general public who engage in public discussion about iPad and technology journalists. Existing research (Kaplan & Tripsas, 2008; Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999; Tushman & Rosenkopf, 1992) has shown that these are important actors in the evolution of sense made about novel products and the emergence of product categories. And, since this work has emphasized the importance of the producer's meanings on audience sensemaking, I also focused on the sense given by Apple.

I use a longitudinal design to consider the importance of time and material experience on audience sensemaking of a novel product and a nascent product category. The time period of investigation for this study begins on December 28, 2009 and ends on April 2, 2011. The starting point was chosen because it marked one month prior to Apple's introduction of iPad on January 27, 2010. This allowed me to track sensemaking prior to the confirmation by Apple that a product even existed. This was useful for three reasons: first, this enabled me to focus on meanings that were derived vicariously, absent any form of material interaction with iPad. Second, nascent research (Hannigan, 2012) suggests that meanings crafted from rumors before product launch can solidify and be resistant to change. And, third, it provided a baseline for changes in meaning post-launch. The end point of April 2, 2011, the first retail anniversary of

iPad, marked the arrival of the second-generation of iPad as well as third-party tablets on retail shelves; by this time, the nascent tablet product category had emerged.

Although studying a single product limits the generalizability of the findings, it allowed me to delve deeply into sensemaking by the focal actors. It also allowed me to develop a deep sense of the meanings surrounding iPad, as well as a richer understanding of its evolution and its relationships with other products. Also, due to iPad's success and its producer, Apple, being one of the most storied companies in the world, there has been significant public discourse on the topic, providing the benefit of ample available data.

The remainder of this chapter is organized as follows: first, I describe the data sources and discuss the sampling and data collection processes. Second, I elaborate the various data analytic techniques I adopted. I end with an overview of the research context, focusing on the meanings of iPad advanced by its producer, Apple.

Data Sources

I collected data from multiple sources, allowing me to follow a concurrent triangulation strategy (Creswell, 2003; Yin, 2014), whereby I use these multiple data sources, methods, and analyses to enhance theoretical potency (Anteby & Wrzesniewski, 2014; Anteby, 2010; Navis & Glynn, 2010; Raffaelli, 2013; Tripsas, 2009). Since I am interested in the evolution of sense made about iPad via public discourse, I assess actors' use of language in the form of written texts. I collect and analyze these texts in archival sources, which provides the benefit of being preserved over time. I organize this section by audience. I begin with the public and then move to the media. Finally, I describe the additional archival data I collected to make sense of Apple's claims about

iPad, the broader context of my study, and to help explain my findings. All these sources are summarized in Table 1.

The General Public: Discourse on Online Forums

I collected written communications by the general public who engaged in public discourse about iPad on online forums. Although the demographic make-up of the members of these forums (including my dataset) is unknown, research in marketing has shown that users of these forums are a good proxy for understanding general consumers preferences (e.g., Bickart & Schindler, 2001). Based on my immersion in my dataset, my sense is that forum participants discussing iPad were more likely to be male, less likely to be older, and more likely to be interested in technology than the general public. But, since these were the people engaged in public discourse about iPad, a new technology, they seemed broadly comparable with the early consumers of novel products like iPad.

Online forums are web message boards where people engage in public discussion in the form of posted messages. Each discussion forum is hierarchical in structure: a forum can contain several sub-forums; each sub-forum may include a number of topics. Within a given topic, any person may start a new discussion. People become aware of new discussions by visiting the forum or by signing-up to receive notifications of new discussions. Each discussion is often referred to as a thread, and is frequently organized by the date each discussion started. Each individual message within a thread is referred to as a post, and contains the poster's identifying details and the date and time it was submitted. The first post starts the thread and guides the content of the discussion; posts that follow in the thread are meant to continue discussion about that post, or respond to other replies; although, as in everyday conversation, it is not uncommon for discussions to be derailed. Each discussion or thread can be replied to by as many people as so

wish. Since threads remain open, the discussion in theory never ends; in practice, people rarely post replies more than a day or so after the original post (see Appendix A for illustrative examples from my dataset).

Because I was interested in public discourse, I focused on forums that did not require the public to “log-in” to read existing messages. These forums allow for asynchronous interactions (Im & Chee, 2006), which enable participants to join discussions at their convenience and of interest to them. Asynchronous forms of interaction have been shown to increase the diversity of discussion participants (Byrne, 2007; Im & Chee, 2006). Moreover, the real-time nature of the data that is both date and time stamped provides a window into understanding the evolution of product meanings as they unfolded. Online forums also provide a site where public discourse can be seen unobtrusively (Whitten, Smith, Munday, & LaPlante, 2008), reducing the possibility of bias or resistance from informants using more traditional data collection techniques, such as interviews or focus groups (Anteby, 2014). To find these online forums, I performed a basic search¹ for “iPad Forum”² using Google, Yahoo!, and Bing search engines³. I conducted the search on each of these search engines on the same day and at approximately the same time. I selected only the results from the first page of each search and included those web sites that had forums with public discussions about iPad. I chose the first page of search results because these reflect the most visited public sites (Brin & Page, 1998).

¹ A basic search does not include quotation marks. Quotation marks tell the search engine to consider the exact words in the exact order. For this project, the particular order of terms was not relevant.

² Providers of Internet search engines recommend that search terms be kept simple and described in as few words as possible. However, a search using only the term “iPad” returned a number of sites that sell iPads, iPad Applications, and iPad related accessories. Thus, I modified the search terms to include “iPad” as well as “Forum.”

³ According to a report published by Experian Hitwise in November 2011, these three search engines accounted for more than 94% of all Internet searches in the United States. Google’s search algorithm uses PageRank to rank each web page. According to its creators, “PageRank can be thought of as a model of user behavior. ... The probability that the random surfer visits a page is its PageRank” (Brin & Page, 1998: 110). Bing and Yahoo! (powered by Bing) search engines have proprietary but similar search algorithms.

Within these web sites, I selected only those forums having general discussions about iPad and the experience of using iPad; I excluded those forums that focused solely on the technical specifications or sales of iPad. To ensure that there was adequate public discourse (Byrne, 2007), I removed from the sampling frame those discussions in which there were fewer than 10 replies. Also, I did not collect all data from each discussion since it often occurred over multiple days. Instead, I selected posts (described below) from discussions that began during the relevant day and ceased to collect posts within the discussion that began on a later day. This allowed for broad consistency in the time-length of discussions captured across the dataset. For example, if a discussion began at 12.00pm on January 27, 2010 that in total had 99 replies, but the last 20 of those posts occurred on January 28, 2010 or later, I only collected the original post and the first 79 replies. In all forums within my sample, users were allowed to post a reply many years after the original post, so there was no way to capture to whole conversation. Yet, since most posts (c.80%) from each discussion occurred within a day of the original post, I collected the vast majority of the data from each discussion. Also, in a thematic analysis of a few hundred discussions, I determined that the later posts, not captured using my data collection strategy, were not significantly different.

To capture this public discourse, I adopted a three-fold sampling strategy. First, for the month preceding Apple's launch announcement of iPad on January 27, 2010, I collected data from all the threads. The data totaled 8,941 posts across 103 discussions.

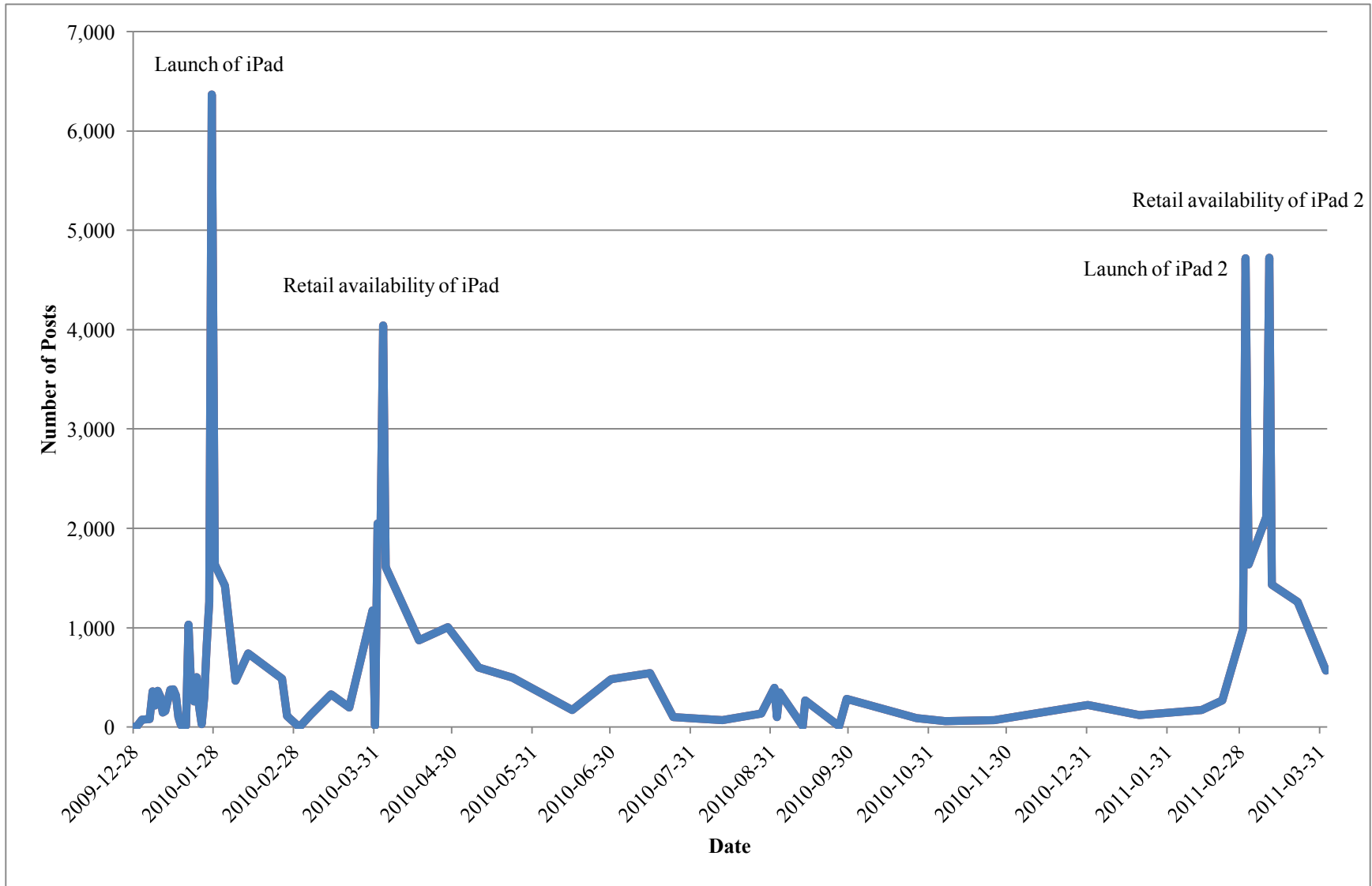
Second, I included data from the following key product events dates: 1) Apple's launch announcement of iPad (January 27, 2010); 2) the availability for purchase of iPad (April 3, 2010); 3) Apple's launch announcement of iPad 2 (March 2, 2011); and, 4) the availability for

purchase of iPad 2(March 10, 2011). To ensure that I was capturing important discussions at these times, I also included the day prior to these key events. This provided 8 days' worth of public discussion (see Appendix B for details of which dates were selected).

Third, I selected thirty days between January 27, 2010 and April 2, 2011 using stratified random sampling. To avoid any potential bias associated with specific days of the week, I sampled a constructed week that included each day of the week within the sample, i.e., I identified all Sundays in the time period and randomly selected them in proportion to the overall size of the sample. I did the same for all other days of the week.

The final data set consisted of 54,875 posts across 1,711 discussions in eight forums over 75 days. Public discourse spiked around the key product events identified above (see Figure 1). On average, each post was 65 words in length with a range of 1-3,455 words. There was no significant difference in word length of posts over time. There were 11,652 individual contributors, who on average crafted five posts with a range of 1-365 posts. Most individuals crafted fewer than five posts with 50% of the posts being crafted by 10% of posters and 90% of the posts by 50%. There were 1,225 different discussion starters within the 1,711 discussions (range 1-135 discussions started). Although some individuals started more threads and posted more frequently than others, beyond the volume of their contribution, there was no discernible difference in the content of their posts or the impact of that content on others' posts.

Figure 1: Forum Participants: Number of iPad Posts in Online Forums between December 28, 2009 and April, 2, 2011



Technology Journalists

I collected articles written about iPad by technology journalists. To identify technology journalists, I relied on two surveys (one in 2010 and the other in 2011) of technology professionals, conducted by PRSourceCode a technology-focused consultancy. These surveys asked technology professionals the journalists and publications they relied on for their technology-related news. The results of these surveys produced a list of the top five publications or actors in the following categories: 1) top technology business publications, online and in print, e.g., Bloomberg Businessweek and Financial Times; 2) top technology trade publications, online and in print, e.g., cnet and Wired; 3) top technology blogs, e.g., Engadget and Gizmodo; and 4) top journalists, e.g., David Pogue at The New York Times and Walt Mossberg at The Wall Street Journal. I used these lists to determine the sampling frame (see Table 1 for the full list of publications included in this data set and Appendix C for illustrative examples of articles by technology journalists).

I searched for all articles in these publications that were related to “iPad” for the time period between December 28, 2009 and April 2, 2011. This yielded more than 10,000 unique articles. I reviewed each article that my search uncovered and included in the data set only those articles that described or evaluated iPad. I excluded those articles that focused primarily on 1) the technical specifications or sales of iPad, 2) Apple as an organization rather than iPad, or 3) another product besides iPad.

The final data set consisted of 20,612 paragraphs in 1,586 articles. Public discourse spiked around the key product events (see Figure 2). I treated each paragraph as a coding unit because they formed a syntactically closed unit (Krippendorff, 2004) and were the most obvious unit of

discourse in my data. It was also the most comparable unit of analysis to the post that I was using for the general public. On average, each paragraph was 45 words in length with a range of 1-327 words. There was no significant difference in word length of paragraphs over time. There were more than 400 authors, who on average wrote 50 paragraphs with a range of 2-523 paragraphs. I used many of the remaining unique articles to supplement the primary data and to construct a broader understanding of how the media made sense of iPad.

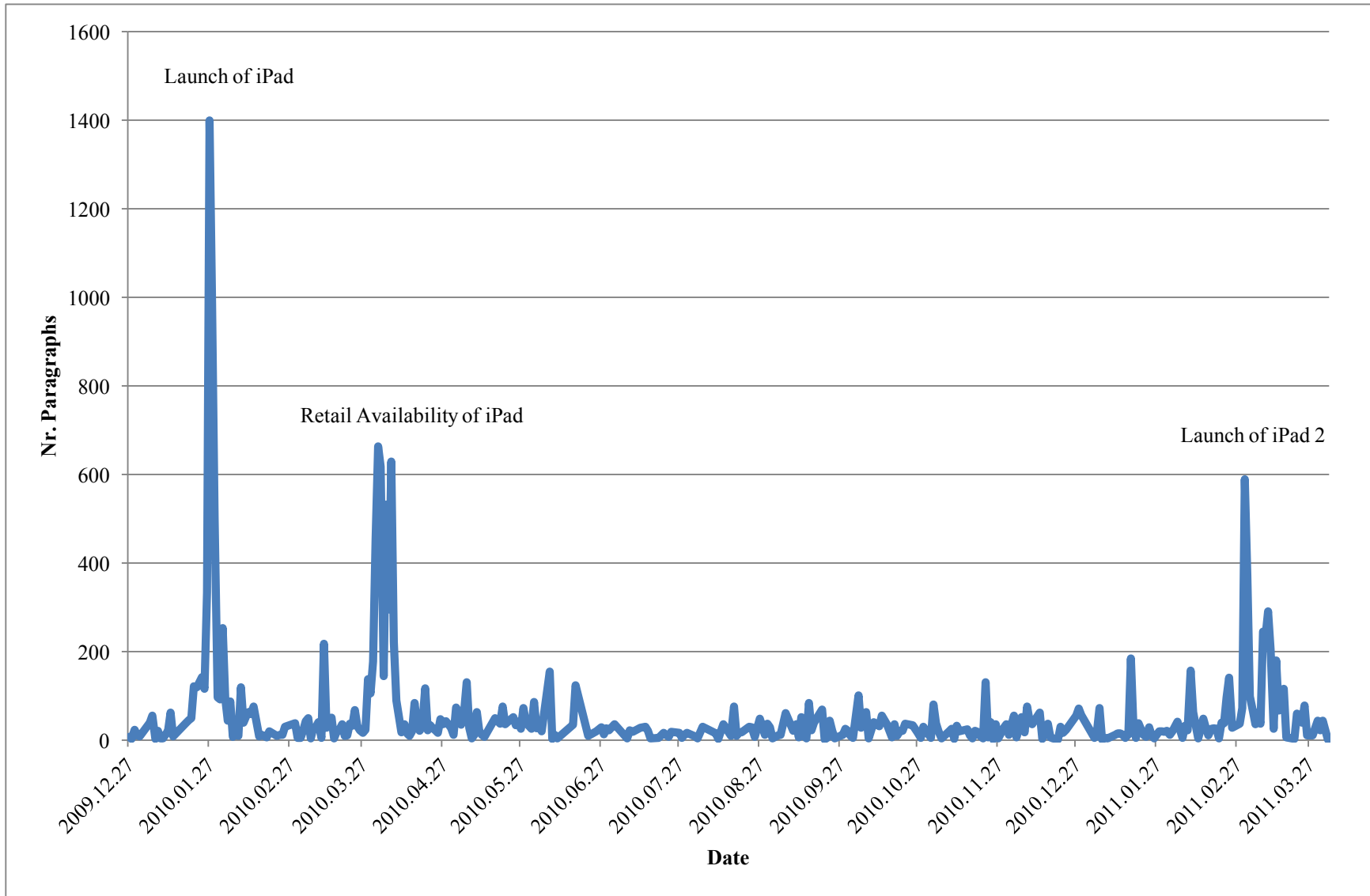
Other Archival Data

To capture the claims made by Apple about iPad, I relied on public statements by Apple. These included press releases, launch announcements of both iPad (January 27, 2010) and iPad 2 (March 2, 2011), and the company web site from different days between January 27, 2010 and April 2, 2011. Since these data provided the public projections of Apple's meanings for iPad and were readily accessible to Apple's audiences, they provide a good measure of Apple's meanings for iPad. Finally, I relied on a wide range of additional archival data to make sense of the broader context of my study and to help explain my findings. These included news articles on iPad, other Tablets, Apple, and its other products. I also collected books on the history and success of Apple or its founders Steve Jobs and Steve Wozniak, case studies of Apple, financial analyst reports for Apple, financial statements for Apple, and sales data for iPad and related products. A detailed description of these sources can be found in Table 1.

Table 1: Data Sources

Audience	Description of Data & Timeframe Captured	Dissertation Chapter
The General Public	54,875 individual posts within 1,711 conversations across 22 forums on 8 host web sites (Dec 28, 2009–Apr 2, 2011) from the following forums: <ul style="list-style-type: none"> • http://www.ipadforums.net/; http://www.macrumors.com/; http://www.everythingicafe.com/; http://www.ilounge.com/; http://www.mac-forums.com/; http://www.ipadforum.org/; http://www.imore.com/; http://www.radipad.com/forum.php 	Chapters IV & VI
Technology-related Media	20,612 paragraphs in 1,586 news articles or editorials or product reviews (Dec 28, 2009–Apr 2, 2011) from the following sources: <p><u>Top Technology (online and in-print) Publications</u></p> <ul style="list-style-type: none"> • Bloomberg Businessweek; CFOWorld; CIO; cnet; eWeek; Financial Times; Forbes; IDG; InformationWeek; NetworkWorld; PCMag.com; The New York Times; The Wall Street Journal; Wired <p><u>Technology Blogs</u></p> <ul style="list-style-type: none"> • Bits (The New York Times); Engadget; GigaOM; Gizmodo; InformationWeek's Security Weblog; Mashable; Pogue's Posts (The New York Times); TechCrunch; WSJ Blogs Digits <p><u>Technology Lead Journalists</u></p> <ul style="list-style-type: none"> • Ben Worthen (The Wall Street Journal); Chris Kanaracus (IDG News Service); David Pogue (The New York Times); Don Clark (The Wall Street Journal); Walt Mossberg (The Wall Street Journal) 	(Chapters V & VI
General Background & Context	<p><u>Apple's Claims about iPad</u></p> <ul style="list-style-type: none"> • 90-minute video of launch of iPad including transcription (includes promotional videos) (Jan 27, 2010) • 75-minute video of launch of iPad 2 including transcription (includes promotional videos) (Mar 2, 2011) • 235 web pages from Apple web site using <u>The WayBack Machine</u> (incorporates changes to web site during time period of study) (Jan 27, 2010–Apr 2, 2011) including 9 case studies of corporate users (included within 235 web pages from Apple web site) (Sep 14, 2010–Apr 2, 2011) • 60-minutes of video including transcriptions from Apple web site (Jan 27, 2010–Apr 2, 2011) • 93 press releases (Dec 28, 2009–Apr 2, 2011) • 9 iPad television commercials (Mar 1 27, 2010–Apr 2, 2011) • 12 iPad print advertisements (Feb 1, 2010–Apr 2, 2011) <p><u>Other</u></p> <ul style="list-style-type: none"> • Hundreds of news articles on iPad, Tablets, Apple and its other products • >10 books on Apple and Tablets • 31 Harvard Business School Press Case studies on iPad, Apple and its other products • 11 years of Apple's financial statements including sales data for iPad and related products • 31 years of daily closing daily stock prices for Apple • Video of launch of iPod including transcription • Video of launch of iPhone including transcriptions • 731 Financial Analyst reports from Thomson ONE Banker 	Chapter III: Research Context

Figure 2: Technology Journalists: Number of Paragraphs in iPad Articles between December 28, 2009 and April 2, 2011



Analyses

I conducted primarily qualitative analyses that I supplemented with quantitative content analyses. This involved both hand-coded and computer-aided text analysis to reveal underlying patterns in my data as well as a detailed thematic analysis to make sense of these patterns. Qualitative analyses are appropriate for three main reasons. First, Creswell (2003) suggests that qualitative research is appropriate when the research question focuses on how something occurs: the concern in this study is how sense made about iPad evolved over time. Second, qualitative analyses attempt “to make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2008: 4): this is at the heart of this study. Third, qualitative analyses are appropriate because the purpose of this study is to build and elaborate theory (Strauss & Corbin, 1990) around changes in sense made of a new product.

Following common prescriptions for qualitative research, data collection and analysis occurred in an iterative fashion (Pratt, Rockmann, & Kaufmann, 2006) between the data and the unfolding sensemaking process. My analysis began with a detailed reconstruction of the history of key events surrounding the evolution of public discourse about iPad by each market actor (Langley, 1999; Stake, 1995; Yin, 2014) that was followed by in-depth coding of the data.

Development of Coding Scheme

Using a combination of Microsoft Excel and NVivo 11 software, I began by using open coding. Here I broke down the data to identify different ways that I believed would inform a theory of audience sensemaking. Next, I coded for mentions of existing comparative products (e.g., iPhone or MacBook) or product categories (e.g., smartphone or laptop), category labels (e.g., tablet) and the physical (e.g., size) and functional (e.g., web browsing) attributes of iPad. I also coded for

mentions of the categorical positioning of iPad within the broader classification scheme (e.g., between a smartphone and a laptop). Finally, I coded for general cultural frames employed (e.g., symbolic). For the technology journalists, I treated each paragraph as a coding unit; for the forum data, I treated each post as a coding unit. I selected these as coding units because they formed a syntactically closed unit (Krippendorff, 2004) and were the most obvious units of public discourse in my data. A code occurrence thus could span multiple sentences within a post or paragraph, and more than one code could be applied to the same post or paragraph.

I used a structured inductive process to identify the content of these coding categories. I describe in detail the process for the online forums. I conducted a similar process for the technology journalists' data. And, although Apple's claims are provided in this study only as research context, I also conducted a similar process for Apple's data. I sampled approximately 3,000 posts that reflected a broad range of dates, individual contributors, and discussions in order to develop my codebook. This process was essential to enable me to accurately detect codes from the complex content with few conventions that is typical in online forums. I began by reading all posts, identifying and recording words and phrases, grouping together words and phrases that referred to the similar existing products or product categories, categorical positions, product attributes, and frames. I developed a coding dictionary (key word and phrase lists) for each coding category. After several iterations, I was no longer modifying the coding scheme, so I deemed the dictionary satisfactory. A high-level summary of this codebook is presented in Table 2.

I then coded the entire data set using automated content analysis. The coding scheme was equivalent to the one identified in the previous step. I defined the dictionary of words and

phrases that indicated the presence of each coding category. I then developed algorithms using Microsoft Excel and NVIVO 11 to detect instances of these words and phrases from the text and assign codes (Weber, 2005). Although automated coding of a large data set avoids the problem of “coder drift” common to manual coding, it is less able to detect implicit or ambiguous meanings (Carley, 1993). Therefore, the initial stage was essential to enable me to link the accuracy of the manual coding with the consistency of the automated coding.

Subsequently, I tested the automated coding algorithms using the same sample of 3,000 posts that I had hand-coded in the first phase. I examined the coded posts and modified the dictionary as necessary. To determine the quality of the dictionary, I compared the computer and hand coded posts, and calculated a “hit rate” as the percentage of posts coded correctly by the computer, and a “false hit” rate as the percentage of posts coded erroneously by the computer. The third step was then to modify the dictionary until the hit rate was more than 80% and the “false hit” rate less than 10% (I assumed that any misses were random) (Porac, Wade, & Pollock, 1999; Wade, Porac, & Pollock, 1997; Weber, 2005). These levels were reached after several iterations for all categories. I then followed the same procedure using a random selection of 3,000 posts from the remainder of the data set. The hit rate levels were greater than 80% and the “false hit” rate less than 10% on the second iteration. I decided that the automated coding scheme had reached saturation. I then ran the content analysis algorithms on all posts. I was then able to use the results of these coded analyses to consider the role of time, materiality, and cultural framing on audience sensemaking. I subsequently conducted thematic analyses (described below) of these coded posts to ensure that I was capturing the nuance of audience sensemaking.

Analyzing the Role of Time on Audience Sensemaking

To consider the role of time in audience sensemaking, I focused on a subset of the data to compare early- and late-stage sensemaking. For early-stage sensemaking, I analyzed the first month of the full data set (December 28, 2009 – January 26, 2010) and for late-stage sensemaking, the last month (March 2, 2011 – April 2, 2011).

My analyses proceeded in two parts: first I quantitatively compared the use of the various coding categories between early- and late-stage sensemaking. I then conducted a thematic analysis on these coded data to understand how sensemaking differed over time. Specifically, I analyzed how each code was being used to craft product meanings. I then compared and contrasted the use of each code across the two time periods. This provided a richer and more nuanced understanding of the ways in which audience sensemaking changed. For each audience, I created a thick description of the results drawing from the coded analyses conducted earlier. I attempted to triangulate common themes and patterns across the various data sources and various actors that comprised each audience (Creswell, 2003). During this step, I move from analyzing specific data to developing a more abstract and theoretical understanding of how time altered sense made about iPad. Finally, I created tables, timelines, and summary sheets that helped me summarize my findings for each audience.

Analyzing the Role of Materiality on Audience Sensemaking

To consider the role of materiality of audience sensemaking, I focused on a subset of the data to compare how three different types of material experience with iPad influenced sensemaking: vicarious, visual, and direct. For vicarious experience, i.e., experience that relies solely on information provided by others, I analyzed the data for the month preceding Apple's introduction of iPad (December 28, 2009 – January 26, 2010). To analyze the addition of visual experience, I

focused on the data from the time of Apple's introduction of iPad until its retail availability (January 27, 2010 – April 2, 2010). To analyze the addition of direct experience or material interaction, I focused on the data from iPad's retail availability until the introduction of iPad 2 (April 3, 2010 – March 2, 2011).

My analyses proceeded in two parts: first I quantitatively compared the use of the various coding categories as the nature of the audience's material experience changed. I then conducted a thematic analysis on these coded data to understand how sensemaking differed with changes in materiality. I followed a similar process to that outlined above with respect to the role of time.

Comparative Analyses Across Two Audiences

This stage of analysis involved integrating the findings across the two audiences, using comparative analyses suggested by Eisenhardt (1989) to search for replication and differentiation. The goal of this step was to settle on the concepts and relationships that advanced my theoretical understanding of how time and materiality altered sense made about iPad. As patterns emerged between the two audiences, I included them into a broader conceptual understanding. Discrepancies and agreements in the emergent theory were noted and investigated further by revisiting the data. Throughout this iterative process, I tested alternative conceptual frames (Locke, 2001) and also used discussions of my models with colleagues as further validity checks for the emerging interpretations (Lee, 1999).

Research Context

This section provides a narrative description of the research context for this study. It is meant to serve as a sensitizing backdrop for the empirical analyses that follow. It is organized in two main parts: in the first I provide the broad historical context to iPad's introduction. As elaborated in

the theoretical grounding chapter, a novel product is often made more understandable via existing similar types of products, particularly the products of the producer. As a result, I briefly describe the categorical context into which iPad was introduced emphasizing those Apple products that the two audiences used as analogies to make sense of iPad.

In the second part, I provide a narrative summary of Apple's claims about iPad, since existing research has suggested that producers' meanings are important for audience sensemaking. I organize this section around the three key product events identified earlier: 1) Apple's launch announcement of iPad (January 27, 2010); 2) the availability for purchase of iPad (April 3, 2010) and iPad 2 (March 10, 2011); 3) Apple's introduction of iPad 2 (March 2, 2011). Overall, my intention in this section is to highlight those aspects of the research context that I will later show in my empirical analyses are important for audience sensemaking about iPad.

Historical Background of iPad

The introduction of iPad marked the culmination of Apple's redemption. When Steve Jobs returned to Apple in 1997, Apple was only a few months away from bankruptcy. By 2010, Apple was one of the largest companies by market capitalization in the world and had become the world's largest mobile devices company by revenue (Jobs, iPad Launch, January 27, 2010). Its shift to a mobile devices company began in 2001 with the introduction of iPod, was continued in 2006 when MacBook was launched revamping Apple's laptop line, and further enhanced in 2007 with the launch of iPhone and the dropping of "Computer" from the company name (for a summary of Apple's major product offerings and key dates, see Appendix D). These three mobile devices—iPod, iPhone, and MacBook—were central to audience sensemaking. I briefly describe them here.

iPod and iPhone were the most portable of Apple's mobile devices. Offering "1,000 songs in your pocket," iPod was released on 23 October 2001⁴. Apple's design aesthetic for iPod was simplicity and elegance, enabling them to promote iPod as a stylish alternative to existing portable music players and emphasize iPod's unique user experience (Isaacson, 2011).

iPod Touch, introduced in September 2007, was the first iPod with built-in WiFi, a 3.5-inch widescreen display, and a multi-touch graphical interface, that Apple described as "the most advanced browser on any mobile device"⁵. Its appearance closely resembled iPhone; it also performed similar functions except for a lack of telephonic capability. By the time iPad went on sale, Apple had sold 35 million iPod Touch devices⁶.

iPhone is Apple's high-end smartphone—a mobile phone with an advanced mobile operating system that combines the telephonic capability of a cell phone with features such as personal digital assistant (PDA) and media player. In 2004, Apple was concerned about the possibility of another company introducing a mobile phone that also stored music; consequently, Apple responded by trying to transform an iPod into a mobile phone (Isaacson, 2011). But, iPod's user interface was not suited to placing phone calls or typing messages. Fortuitously, Apple was simultaneously attempting to develop a tablet. While designing the user interface for the tablet, Apple made a breakthrough with multi-touch sensitive displays that became the solution to the mobile phone project's user interface problem.

Hailed as Time magazine's "Invention of the Year,"⁷ iPhone was introduced at Macworld on January 9, 2007 with Apple drawing from the past accomplishments of Macintosh and iPod to

⁴ <https://www.apple.com/pr/library/2001/10/23Apple-Presents-iPod.html>

⁵ <http://www.apple.com/pr/library/2007/09/05Apple-Unveils-iPod-touch.html>

⁶ <http://techcrunch.com/2010/04/08/apple-has-sold-450000-ipads-50-million-iphones-to-date/>

⁷ http://www.washingtonpost.com/wp-dyn/content/article/2007/01/09/AR2007010900875_pf.html

suggest that iPhone would change the smartphone category. Apple posited that iPhone was the best-in-class smartphone for two reasons: first, the display—“‘We’re talking about how you feel about the product, not in a physical sense, but in a perceptual sense.’ Jony [Ive, Apple’s Chief Designer] believed the iPhone would be all about the screen. . . . The team made a point in exploring design ideas to avoid any approaches that would diminish the importance of the display. Jony said they wanted the display to be ‘magical’ and ‘surprising’” (Kahney, 2013: 220–221). And, second, the user experience: “‘Today Apple is going to reinvent the phone... [Smart phones are] not so smart and not so easy to use. We don’t want to do these. We want to do a leapfrog product that’s way smarter than these phones and much easier to use. So we’re going to reinvent the phone. We’re going to use the best pointing device in our world. We’re born with 10 of them, our fingers’” (Steve Jobs, MacWorld, January 9, 2007).

Eighteen months later, in July 2008, Apple introduced the iPhone 3G and the iTunes App Store. This App Store allowed iPhone (and iPod Touch) users to download applications (“apps”), developed by both Apple and third parties, directly to their iPhone or iPod. Apps—short for application software—are software programs that are designed to run on mobile devices. Originally, apps provided users with information retrieval services such as email, calendar, contacts, and weather information. Over the next eighteen months, there was an explosion of third-party apps—at the time iPad was available for purchase, more than 185,000 distinct apps had been downloaded a total of 4 billion times⁸—available across a wide range of categories, particularly in the areas of media consumption such as social media, magazines, newspapers, and games. Walt Mossberg, technology columnist for the Wall Street Journal, argued that, “The App

⁸ <http://www.apple.com/pr/library/2008/07/14iPhone-App-Store-Downloads-Top-10-Million-in-First-Weekend.html>

Store is what makes your device worth the price”⁹. The app store enabled users to personalize their device to meet their own individual needs and enhance their user experience.

MacBook, in contrast, is less portable than either iPod or iPhone. It is Apple’s high-end laptop computer and offers the most computing power of Apple’s mobile devices. A laptop is a portable personal computer with a clamshell form factor, suitable for mobile use. Laptops are commonly used in a variety of settings, including at work, in education, and for personal multimedia. The term laptop was coined in the early 1980s to describe a mobile computer that users often operated with it on their laps. When describing either the MacBook Pro or MacBook Air, Apple emphasized the user experience rather than technological features. Conceptualizing MacBook Air as a wireless machine, Apple emphasized the product’s portability, noting that it was the world’s thinnest notebook computer¹⁰. But, Apple was at pains to point out that MacBook Air was still a high-performance, full-size computer¹¹. So, by the time of iPad’s launch in 2010, MacBooks (Pro and Air) commanded 91% of the premium-priced (\$1,000 and above) computer market in the United States¹² based in part on a cutting-edge, tightly integrated user experience¹³.

The Introduction of iPad by Apple

“I can’t think of a product that has defined an entire category and then has been completely redesigned in such a short period of time. It is really defined by the display. There are just no distractions” (Jony Ive, Apple’s Chief Designer describing iPad in Kahney, 2013: 232).

In April 2009, *BusinessWeek* reported that Apple was developing a “‘media pad’ for gaming, music, HD video, and placing calls over WiFi”¹⁴, with *AppleInsider* suggesting that Apple’s new

⁹ <http://online.wsj.com/news/articles/SB123801598971341281>

¹⁰ <http://www.apple.com/pr/library/2008/01/15Apple-Introduces-MacBook-Air-The-Worlds-Thinnest-Notebook.html>

¹¹ <http://www.apple.com/pr/library/2008/01/15Apple-Introduces-MacBook-Air-The-Worlds-Thinnest-Notebook.html>

¹² <http://www.reuters.com/article/2009/10/15/us-windows7-apple-idUSTRE59D5MR20091015>

¹³ <http://www.businesswire.com/news/home/20100113006670/en/Global-PC-Market-Leaps-Double-Digit-Growth-Fourth#.VMr9TsY1TVI>

¹⁴ <http://www.engadget.com/2010/01/26/the-apple-tablet-a-complete-history-supposedly/>

product would be a “low cost tablet computer set to compete with netbooks”¹⁵. Anticipation about an Apple “tablet” intensified at the beginning of 2010. On January 4, 2010 John Paczkowski at All Things D said that Apple was planning a major product announcement on January 27, 2010¹⁶. Fourteen days later, official word came from Apple that there would be an event on January 27, 2010 at Yerba Buena Center for the Arts Theater in San Francisco¹⁷. On January 20, 2010, no fewer than seven out of the top ten most recent technology stories on Techmeme, the technology news aggregator, concerned Apple’s potential new product, a product they labeled as tablet¹⁸. A theme that was repeated across technology news sites around the globe and even in mainstream publications such as The Guardian, The Wall Street Journal, and The New York Times as the event date drew nearer. So when Steve Jobs walked on stage at 10:00am on January 27, 2010, the studio audience and the public were primed for an important announcement. Eight minutes later when Jobs uttered the words, “We call it iPad,” the wait was over.

Apple’s Public Discourse about iPad Prior to its Retail Availability (Jan 27, 2010 – Apr 2, 2010)

The public relations event was important because it provided the first official public statements by Apple about iPad. Apple’s CEO, Steve Jobs, proclaimed “We want to kick off 2010 by introducing a truly magical and revolutionary product today.” This was followed shortly afterwards by an image projected on the screen of an iPhone and a MacBook separated by two vertical lines, with Jobs posing the question “is there a room for a third category of device in the middle? Something that’s between a laptop and a smartphone?”

¹⁵ <http://www.engadget.com/2010/01/26/the-apple-tablet-a-complete-history-supposedly/>

¹⁶ <http://www.engadget.com/2010/01/04/major-apple-announcement-coming-january-27th-devs-already-wor/>

¹⁷ <http://gizmodo.com/5451005/apple-january-27th-come-see-our-latest-creation-event-confirmed>

¹⁸ <http://techcrunch.com/2010/01/20/blow-jobs-off-for-a-week/>

Answering “yes” to this question, Apple’s claim that iPad was a new category of device rested on the user experience when performing the media-consumption tasks that could be performed on iPhone and MacBook: “And what this device does is extraordinary. You can browse the web with it. It is the best browsing experience you’ve ever had. It’s phenomenal to see a whole webpage right in front of you that you can manipulate with your fingers. It’s unbelievably great, way better than a laptop, way better than a smartphone” (Jobs, iPad Launch on January 27, 2010). The meanings Apple offered suggested that the user experience differentiated iPad from other products because “I don’t have to change myself to fit the product. It fits me” (Jony Ive, SVP Design, iPad Launch, January 27, 2010). Echoing this sentiment, Phil Schiller, Apple’s head of marketing, said “It’s going to change the way we do the things we do every day.”

Apple also made symbolic claims about iPad. For instance, immediately after Jobs’ proclamation that Apple would be introducing a magical and revolutionary product, an image appeared on the screen of Moses on Mount Sinai holding the tablet of the Ten Commandments with a quote from the Wall Street Journal “Last time there was this much excitement about a tablet, it had some commandments written on it” (Peers, 2009). Apple was drawing from a powerful religious symbol to suggest a new category for its novel product. A moment later, Apple displayed the image of an iPhone, linking iPad and the sacred. These two symbols linked temporally in the keynote were potent because iPhone had been labeled “Jesus phone” and the “holy grail of all gadgets” (Campbell & La Pastina, 2010: 1192) by a variety of audiences. The implication was that since iPhone was category-defining product, iPad could be too. Naming it iPad further linked it to Apple’s suite of category defining “iP” products such as iPod and iPhone. Thus, Apple was making the case that iPad was another in a long-line of path-breaking Apple mobile devices.

Apple also used cultural touchstones to express how iPad was categorically distinctive. For instance, Jobs demonstrated the photo application in iPad using his own family vacation to Paris, mentioning his wife Liz by name, and showing the family pictures of everyone having fun at the Eiffel Tower and in front of The Louvre. These cultural notions of nostalgia and place are potent touchstones that are brought to life via the family vacation (Glynn & Halgin, 2011). More than just a salient experience that many have enjoyed, the choice of location, Paris, is culturally desirable and aspirational. To experience these moments is possible with iPad, suggested Apple. Thus, Apple's meanings about iPad appears to go beyond rational attempts to simply increase the appeal of the new product (Hsu & Hannan, 2005). Rather they provide a potent and coherent sense of iPad that is symbolically and functionally positioned relative to other product categories including Apple's own products.

Apple's Public Discourse Post Retail Availability of iPad (Apr 3, 2010 – Mar 1, 2011)

Apple did not make iPad available for purchase for nine weeks. When it hit the retail stores on April 3, 2010, iPad was an immediate commercial success. On its first day of sales, more than 300,000 iPads were sold with many retail stores selling out. One million iPads were sold in fewer than twenty-eight days and two million in fewer than sixty.

Functionally, Apple continued to emphasize that iPad was a media consumption device. And, Apple continued to argue that what made iPad novel was the *magical* and *revolutionary* user experience. Apple increasingly emphasized the production capability of iPad. Beginning in April 2010, Apple introduced web pages dedicated to how iPad can be used in education and business.

In a series of vignettes on its web site beginning in September 2010, Apple used blue chip companies such as Hyatt Hotels or General Electric as well as actors in caring businesses such as

healthcare and charities and public services such as police departments, to explain how users' direct experiences with iPad had transformed their businesses: "From Hyatt's headquarters to individual properties throughout the world, iPad is changing the way this company does business. 'With iPad, the interaction between the guest and ourselves is now seamless,' Wallis [Global Head, Marketing & Brand Strategy, Hyatt Hotels Corporation] says. 'iPad has changed our world forever'" (BP Hyatt 10.09.13). Apple was drawing from its high-status customers to help make the case that iPad was a unique product that changed the ways organizations did business. And, it also helped cement Apple's central claim that iPad was a product for everyone: it fits the needs of the user.

Apple was much less likely to make purely symbolic claims during this period. Therefore, largely absent from Apple's claims about iPad was the use of powerful cultural touchstones such as Moses on Mount Sinai or the use of cultural notions of nostalgia and place. This suggests that Apple considered symbolic claims to iPad's distinctiveness were necessary to help audiences make sense of iPad before they had direct experience with iPad. During the pre-retail availability time period, Apple aligned iPad with both Apple's category defining products—iPhone, iPod, and MacBook—to symbolize iPad's distinctiveness and superiority. However, once audiences could have direct experience with iPad post retail availability, these more indirect claims were less necessary. As a result, Apple shifted to placing greater emphasis on the functional or more concrete ways in which iPad was distinctive and could enrich users lives.

Tablet Sales Post iPad

In September 2010, technology analyst Gartner estimated that nearly 63.6 million tablets (the categorical label almost universally applied to iPad at this time) would be sold globally in

2011—an increase from 17.6 million units in 2010¹⁹ (Apple sold 19.5 million units in the first four quarters iPad was on sale). And, by the end of 2015, the Dow Jones Newswires predicted global units sales of 242.3 million²⁰. The increased demand for tablets was expected to negatively impact the demand for personal computers (particularly tablet PCs, netbooks, laptops)²¹, i.e., personal computers were perceived by these financial analysts to be substitutes for tablets or members of the same superordinate product category.

This interest in tablets was not only reflected in strong demand for iPad. Other computer and particularly smartphone manufacturers were introducing their versions of the tablet (see Appendix E). First, on September 2, 2010, Samsung introduced its 7-inch multi-touch tablet²²; it was available for purchase in the U.S. in November 2010. Nine and eleven inch versions followed in early 2011. Albeit, running on Google’s Android operating system, the Galaxy Tab had similar functionality and hardware as iPad. Motorola soon followed: in January 2011 it announced its 10-inch Android tablet, the Xoom. Like iPad, it had WiFi and 3G versions. Unlike the first generation iPad, it had front and rear facing cameras.

Apple’s Public Discourse Post Introduction of 2nd Generation iPad (Mar 2, 2011 – Apr 2, 2011)

On March 2, 2011, Apple introduced the second generation of iPad (iPad 2), making it available for purchase eight days later. Apple’s functional claims continued to suggest that iPad was categorically distinctive from iPhone and MacBook because it enabled users to do things they could do with existing products in new ways. However, now, Apple focused on other members of the tablet category, with Apple claiming superiority over other producers’ tablets.

¹⁹ <http://www.gartner.com/newsroom/id/1800514>

²⁰ <http://www.mediapost.com/publications/article/144496/global-tablets-to-hit-202-million-in-2015.html>

²¹ <http://www.reuters.com/article/2011/09/08/us-pc-market-research-idUSTRE7871NX20110908>

²² <https://www.samsungmobilepress.com/2010/09/02/Samsung-GALAXY-Tab-Opens-a-New-Chapter-in-Mobile-Industry-1>

Apple's symbolic claims emphasized how iPad enabled users to do new things that helped make users' lives and those of their families better. To make these claims, Apple was increasingly drawing from a wider array of users' own claims following their direct experiences with iPad:

"I define a miracle as something that comes in and changes your life for the better that you did not expect, that you never thought could happen. When Leo was first diagnosed with autism, it really knocked me sideways emotionally just to think that things could be difficult for my child. I mean you never want anything to be difficult for your child. It's hard for Leo to be independent. It's hard for him to self-direct. But, with the iPad, it just makes him happy and independent. He didn't have that ability before. This is something that my son can do. He doesn't need me. I don't want him to have to need me all the time" (Shannon Des Roches Rosa, iPad 2 Launch, March 2, 2011).

"What we're seeing with the iPad is that they are engaged. You put the iPad in front of them and you see the kids immediately focused right on that content and work through it. In a short amount of time, we're seeing gains of 50-60% in reading, math, and science with our classrooms using the iPads. I really believe that this is the future of education" (John Connolly, Technology Director, Chicago Public Schools, iPad 2 Launch, March 2, 2011).

Conclusion

From this analytical narrative of the research context, it can be seen that product meanings about iPad evolved between December 28, 2009 and April 2, 2011 from a speculative product to the *de facto* standard of the tablet product category. It also shows that due to the rollout strategy adopted by Apple that the various audiences were subject to different types of material experience with iPad. As a result, this context provides fertile ground to explore the role of time and materiality on audience sensemaking about novel products.

Chapter Summary

In this chapter, I described the methodology followed in this study. In particular, I elaborated the data sources and collection processes, techniques used to analyse these data, and the research context. In the next two chapters, I discuss the findings based on these analyses.

Table 2: Final Codebook Arranged by Category

Category	Code	Code where reference to ...
Product Analogy	MacBook ²³	<ul style="list-style-type: none"> All non-Apple computers including laptops and desktops, but not netbooks MacBook, MacBook Air, MacBook Pro, iMac
	Netbook ²⁴	<ul style="list-style-type: none"> All netbooks
	Tablet PC ²⁵	<ul style="list-style-type: none"> All tablet PCs
	iProduct ²⁶	<ul style="list-style-type: none"> iPhone All non-Apple smartphones iPod, iPod Touch, iPod Touch
Product Attribute	Display	<ul style="list-style-type: none"> Type of screen Resolution of the display Effects to the display of the user experience
	Media Consumption	<ul style="list-style-type: none"> Non-production functionality such as email, web browsing, reading books and magazines, watching television and movies, managing photos, and web conferencing
	Operating System	<ul style="list-style-type: none"> Apple's operating systems iOS and OS X Non-Apple operating systems Windows and Android
	Portability	<ul style="list-style-type: none"> Physical dimensions of iPad including size and weight Ability to use iPad or connect to the internet away from home
	Production	<ul style="list-style-type: none"> Functional capability of creating content on iPad such as documents, spreadsheets, presentations, photo and video editing Performing work-related tasks such as web conferencing
	User Experience	<ul style="list-style-type: none"> How to input data and the experience of inputting data as well as reactions to the experience of interacting with iPad.
Categorically Distinctive	Tablet ²⁷	<ul style="list-style-type: none"> Use of categorical label to describe iPad including derivations of Tablet and Slate Statements suggesting iPad's categorical position within a broader classification of products Statements distinguishing iPad from existing product
Cultural Frame	Functional	<ul style="list-style-type: none"> Statements emphasizing material or functional aspects of iPad Statements explaining material or functional benefits of iPad
	Symbolic	<ul style="list-style-type: none"> Statements emphasizing broader cultural themes including notions of place, history, nostalgia, and broader societal trends to evaluate iPad Statements evaluating iPad using expressive language or explaining how iPad enriches lives of users

²³ When using computer, forum participants primarily used the label of Apple's own member of the categories, MacBook.

²⁴ Introduced in 2007 when Asus unveiled the Asus Eee PC, a netbook was a smaller, lighter, cheaper laptop with reduced computing power.

²⁵ A tablet PC, introduced by Bill Gates, Microsoft CEO, in November 2000 ran a stripped-down version of Windows Operating System and had a stylus activated touch sensitive high-resolution LCD display. Otherwise, a Tablet PC was similar to laptop, and considered a device for business users who needed to take notes while out in the field.

²⁶ When using smartphone, forum participants primarily used the label of Apple's own member of the categories, iPhone. They also used the analogies of iPod or iPod Touch, which they embellished in very similar ways to iPhone. I combined any references to iPod, iPhone, or smartphone under the combined label, iProduct.

²⁷ Other than for a brief period pre-launch in which the label Slate was used, forum participants used the categorical label, Tablet, with public discourse settling on that label before Apple had even launched iPad. I therefore coded all references to iPad as a categorically distinctive product under the label, Tablet.

Chapter IV: Findings

Forum Participants: Sense Made about iPad

In this chapter, I present the findings of my analyses of audience sensemaking by forum participants in two sections. In the first, I analyze how sensemaking changes over time; and, in the second, I consider the role of materiality in sensemaking. In each section, I consider two further things: 1) how cultural frames are implicated in sensemaking; and, 2) how the claims put forward by the producer, Apple, are incorporated into audience sensemaking. I organize each section in two parts: in the first, I present the findings from the quantitative analyses to provide a broad overview of how sensemaking changed over time or with different types of material experience. In the second, I present findings from the thematic analyses in order to provide a nuanced account of how sensemaking changed. Within the presentation of the thematic analyses, I intersperse the narrative with significant quotes intended to illustrate my interpretations, and I provide additional selected quotes in separate tables to demonstrate the robustness of my claims. I present these quotes from online forums verbatim to help provide a flavor for the informality and rawness of the sensemaking as it unfolded.

Role of Time

To understand how sense made by forum participants changes over time, I ask two questions, paraphrased from my theoretical grounding: 1) *How do forum participants a) alter their categorization, b) add new analogies, or c) change their use of functional and symbolic frames, in their sensemaking about a novel product over time?* and 2) *How does forum participants' use of categorization, analogies, and cultural frames to construct product meanings change over time?*

I compared early-stage sensemaking (December 28, 2009 – January 26, 2010) and late-stage sensemaking (March 2, 2011 – April 2, 2011). The unit of analysis was a post (this is in contrast to the journalists' articles, where the unit of analysis was a paragraph). Early-stage sensemaking consisted of 8,941 posts across 103 discussions. On average, each post was 70 words in length with a range of 1-2,346 words. Late-stage sensemaking consisted of 16,455 posts across 517 discussions. On average, each post was 64 words in length with a range of 1-1,556 words.

Quantitative Analyses to Assess Changes in Sense Made Over Time

To compare changes in the use of each analogy, categorization, and cultural frame between the two time periods I conducted a series of statistical t-tests. Table 3 presents these results and values for Cohen's d, indicating effect sizes (Cohen, 1988). In the thematic analyses, I interpret these results.

The analogies used were primarily from four product categories: tablet PC, netbook, iProduct, and MacBook (see Table 2 for a description). Each of these four product categories was used in both time periods. Forum participants were most likely to make sense of iPad using iProduct (predominantly iPhone) and MacBook, i.e., other Apple products. All t-values are significant ($p < 0.01$ level) and Cohen's d figures (-0.20 to -0.38) suggest moderate effect sizes. This supports existing work (Hargadon & Douglas, 2001; Navis & Glynn, 2010; Rosa et al., 1999) that has found a decline in the use of analogies in public discourse as novel products become more familiar (Powell & Colyvas, 2008); since other products perceived to be members of the same nascent tablet product category had emerged by March, 2011, it also provides evidence that as the new category emerges, there is a decline in the use of analogy.

I also find that forum participants did not add new analogies over time. In fact, two of the analogies—netbook and tablet PC—were largely dropped from public discourse by late-stage sensemaking. This suggests that broad categorical understandings of novel products stabilize early. Absent the addition of new analogies to public discourse, forum participants did not modify their sense of the broad categorical position of iPad, but refined it by dropping netbook and tablet PC, two potential categories to which iPad could belong.

Forum participants' public discourse often reflected on iPad as a categorically distinctive product. This included the use of a categorical label to describe this novel product, its position within a broader classification of products, and how it was distinctive from existing products that I coded under the label *Tablet* (for a description, see Table 2). My analysis reveals that 41% of all posts in each of the two time periods was coded as Tablet. The t-value was not significant. This is also consistent with the idea that categorization prior to the launch of a novel product is resilient to change.

Forum participants used two main cultural frames: functional and symbolic (for a description, see Table 2). My analysis reveals that forum participants were more likely to use functional frames than symbolic frames across both time periods. I find that symbolic frames were used more frequently in late-stage sensemaking than in early-stage sensemaking. Both t-values are significant ($p < 0.01$) and a Cohen's d figure of 0.06 for functional frames suggests a small effect size, whereas a Cohen's d figure of 0.16 for symbolic frames suggests a more moderate effect size. This might suggest that functional frames are always central to ongoing public discourse and that as forum participants became more familiar with the functionality or descriptive aspects of iPad, they were able to increasingly emphasize more symbolic framing.

Table 3: Comparison of Mean Instances of Code per Online Forum Posts by Forum Participants Between Early- and Late-stage Sensemakingⁱ

	Early-stage Sensemaking (<Jan 27, 2010)					Late-stage Sensemaking (>Mar 2, 2011)	
	Mean	SD	t-value		Cohen's d	Mean	SD
<u>Product Analogy</u>							
iPhone	0.307	0.461	44.030	***	-0.332	0.168	0.373
MacBook	0.208	0.406	51.271	***	-0.376	0.079	0.269
Netbook	0.028	0.165	13.671	***	-0.199	0.003	0.058
Tablet PC	0.029	0.166	14.396	***	-0.211	0.003	0.050
<u>Product Category</u>							
Tablet	0.414	0.493	1.009		-0.013	0.407	0.491
<u>Cultural Frame</u>							
Functional	0.560	0.496	4.418	***	0.058	0.589	0.492
Symbolic	0.183	0.387	12.266	***	0.159	0.248	0.432
Sample Size (Nr. Posts)	8,941					16,455	

* p < 0.10; ** p < 0.05; *** p < 0.01.

ⁱ Analyses based on unpaired t-test of unequal variance.

Thematic Analyses to Assess Changes in Sense Made over Time

In the thematic analyses, I find that forum participants embellish these analogies and categorical determinations differently in the two time periods to construct quite different product meanings.

To explain these changes, I organize this section by time period.

Early-stage Sensemaking (Dec 28, 2009 – Jan 26, 2010)

Prior to Apple's introduction of iPad, forum participants employed analogies to categorically position Apple's future product relative to existing products. They relied most heavily on iPhone and MacBook to suggest that it would be bigger and more functional (i.e., enable production as well as consumption tasks) than an iPhone and more portable than a MacBook. Although there

was agreement as to the positioning for Apple's future product within a broad classification scheme, there was disagreement as precisely how and where this product might fit-in.

For some, they framed it as a new category of product designed for media consumption "that will let people watch movies and television shows, play games, surf the Internet and read electronic books and newspapers" (Before Launch 138) via the same software applications (known as *apps*) that were deployed on iPhone. For others there was concern that it might be too similar to iPhone or MacBook or not sufficiently distinctive from both:

"I've got a MBP. I've got an iPhone. Can someone please explain to me why I should want / need this device? At 10"ish I can't put it in my pocket so it won't replace my phone even if it could be used for video conferencing. It won't have the HDD size or raw computing power necessary to replace my MBP. Call it a 'tween device..." (Before Launch 2550).

Thus, when using iPhone and MacBook, forum participants were using physical and functional attributes as a way to hedge (Rosch, 1978; Zerubavel, 1993) or to suggest degrees of similarity or difference. In contrast, for others, there was a sense that it would become a member of one of two other categories that were perceived to be between an iPhone and MacBook, namely netbook or tablet PC. For instance, its perceived size and casual computing capability suggested it would be Apple's version of a netbook. Whereas for others, its user interface and operating system suggested that it would be Apple's version of a tablet PC. In these cases, Apple's future product did not require hedging relative to the analogies. In summary, different forum participants embellished similar analogies and the same broad categorical position of Apple's future product in a number of different ways. To do, this relied heavily on the perceived physical and functional attributes of the product. Sometimes, they even relied on similar attributes and analogies to craft different meanings.

In general, there was widespread excitement and anticipation about the pending introduction of Apple's new product. When evaluating the rumors, forum participants emphasized the functional aspects of Apple's future product: "I'm hoping it will be more open than the current iPhone OS we all know. I wouldn't look twice at a 'big iPhone'. . . . I'd like this to be a fully dedicated computer" (Before Launch 688). They occasionally used symbolic or expressive language, but seldom considered broader cultural themes to consider how the product would enrich their lives. Instead, evaluations centered on the functional aspects including whether or not iPad could be understood as categorically distinctive and whether or not forum participants had a need for such a product. Overall, they hoped for a categorically distinctive product, but were somewhat ambivalent about whether Apple's future product would be one.

Late-stage Sensemaking (Mar 2, 2011 – Apr 2, 2011)

Late-stage sensemaking was fueled by Apple's introduction of the second-generation iPad (iPad 2) on March 2, 2011; eight days later, Apple made it available for purchase. By this time, forum participants' ambivalence of early-stage sensemaking had been replaced with almost universally positive evaluations: "YES It's truly deserving of being called Magical!" (After iPad 2 6987) or "Absolutely! I didn't need it at all - but I love it! (After iPad 2 9357). As this last quote suggests, forum participants were no longer solely concerned about the functionality of iPad. This suggests that as iPad became more familiar, forum participants were able to shift their attention to the more symbolic aspects of iPad. And, this allowed for a consideration of need for iPad to be replaced with desire.

Forum participants were also not employing analogies to categorically position iPad. They had made sense of iPad as distinctive from these existing products and considered it to be a member of the nascent tablet product category. Thus, when invoking the analogies of iPhone and

MacBook, they no longer used attributes as hedges to suggest similarity or difference. Instead, they treated these analogies as similes to make sense of iPad, the tablet, more vivid: “The only problem I still see with the iPad is iOS. While I love it on my iPhone I would much more prefer to have something more powerful on a tablet” (After iPad 2 500). There was no confusion as to the appropriate product category in which to place iPad. That had seemingly been addressed earlier.

With the arrival of others’ products such as Motorola’s Xoom and Samsung’s Galaxy, the tablet product category had emerged by March 2011. As a result, public discourse increasingly compared iPad to these other tablets and the first generation product. And, they were using the same attributes of early-stage sensemaking to craft different meanings: “When the iPad is on a display next to a Galaxy Tab or a Xoom the average consumer is going to see a thicker tablet with a higher price and they’ll buy an iPad. I think when the first true iPad competitors come on the scene iPad will have a two-year head start” (After iPad 2 8801). The attribute of size was now used to discuss the thickness of iPad relative to other tablets rather than its physical dimensions relative to iPhone or MacBook. This resulted in forum participants making sense of iPad as the best tablet on the market. This was consistent with the claims made by Apple at this time.

The arrival of the other tablets had provided a more direct type of product comparison. In early-stage sensemaking, forum participants relied on analogy because Apple’s future product did not appear to fit neatly into any existing product category. But, with the emergence of other tablets, this had changed. It was clear to which category iPad belonged. In fact, forum participants had largely come to see iPad as the prototypical exemplar of the nascent tablet product category.

Yet, they were no more likely to emphasize iPad's categorically distinctive position (41% of posts in both periods). This reflected in part that in early-stage sensemaking, without the materiality of the product, forum participants were unable to emphasize the physical or functional attributes in their own right. Instead they could only make sense of them relative to existing products. Since their hopes were that the product would be categorically distinctive, they discussed how. And, because a novel product does not fit neatly into a single category, forum participants needed to rely on several analogies to categorically position iPad. As expected in late-stage sensemaking, discourse emphasized iPad's categorically distinctive position.

Thus early-stage sensemaking influenced late-stage sensemaking in two main ways: first, it provided a stable supply of attributes, analogies, frames, and broad categorical positioning; these acted as a form of cognitive anchor for forum participants' sensemaking. But, these were used to craft different meanings. In early-stage sensemaking, they were used to elaborate how iPad was or could be categorically distinctive, whereas in late-stage sensemaking they now used to confirm iPad's superiority and suggest how iPad was the prototypical tablet. As a result, the same analogies, attributes, and frames that earlier helped explicate *between* category distinctiveness were now being used to explain *within* category prototypicality or superiority. Second, early-stage sensemaking provided concrete meanings that were retained and constrained what was plausible during late-stage sensemaking. For instance, during early-stage sensemaking, there was a strong perception that iPad would be a media consumption product; and, this meaning was retained and influenced forum participants' late-stage sensemaking of iPad 2 as they focused on the need for and the quality of the camera for both taking photographs and video chat with friends and family.

Overall this is consistent with earlier findings that broad categorical positioning of a novel product is resistant to change and that sensemaking shifts to emphasizing within category comparison with emergence of the product category (Navis & Glynn, 2010; Rosa et al., 1999). But, it extends this work to show that this solidification, as demonstrated in the agreement in categorical label, can occur before the producer introduces the product to the market. It also extends this work to show how specific product meanings may vary. For instance, despite the early-stage sensemaking providing a broad understanding of the iPad's categorical position, it was still unclear whether or not iPad would be considered categorically distinctive or simply a member of several existing product categories. By late-stage sensemaking, forum participants were clear that iPad was categorically distinctive and a member of the nascent tablet product category; and with it came an increasingly positive and more symbolic evaluation.

Table 4: Forum Participants: Comparative Sense Made Over Time

Descriptive Summary	Illustrative Quotes
Functional evaluation of iPad via broad categorical positioning	<u>Early stage Sensemaking (Dec 28, 2009–Jan 26, 2009)</u>
	<p>“I’m interested in this if it can do at least a few minimum computer-like things. If I can work on documents, internet, email, print, watch dvds, etc, that might be enough. I’d love to have something like this replace a laptop. Someone mentioed the size relative to a piece of paper. I’d like to see them find a way to use this form to take notes. I’m not sure how to do it without using the screen like a piece of paper (with a pen or stylus? -- and eliminating the ability to use the tablet as your textbook at the same time). Anyway, I’m optimistic that this will be something worth getting.” (Before Launch 122).</p>
	<p>“The tablet is expected to be a multimedia device that will let people watch movies and television shows, play games, surf the Internet and read electronic books and newspapers. Any computer can do this. An iPhone can do it, and it fits in your pocket. Not getting what is so revolutionary about this product. There had better be something else that the rumors haven’t revealed. Oh well, I guess we’ll see tomorrow...” (Before Launch 138)</p>
	<p>The iPhone OS is OS X with a new UI. Making it run Snow Leopard with a few tweaks is a guaranteed failure and a "no buy" for me. I already have a MBP that I don’t use so why would I want a tablet PC that runs the same OS?” (Before Launch 1018).</p>
	<p>“this is apple’s chance to take the netbook market by storm but with all these supposed features missing it seems like they are targeting this to a niche market instead of mass market” (Before Launch 4562).</p>
	<p>“I hope they engineer one inexpensive version that competes in the "Netbook" market: "for surfing the web email and casual computing." It would be nice to have a device priced for all to afford as opposed to another that one might be considered as being the BMW Mercedes Benz and Audi of computer devices” (Before Launch 4849).</p>
	<p>“A stylus may make sense for working on a large device. They always seemed ridiculous on phones but a tablet sized device would allow you to sketch and take notes” (Before Launch 4936).</p>
	<p>“It is also a NetBook competitor with notebook capabilities * Even though it may use a derivative of teh iPhone OS it is intended to be more than just a larger iPod. This is more of a bridge between iPhone and and laptop That’s at least my two cents” (Before Launch 6260).</p>
	<p>“IMO you need the tablet BECAUSE not only will the tablet be a media player and great cheap laptop.. it will ALSO be our new user interface for your primary computer” (Before Launch 7471).</p>
	Functional and symbolic evaluation of iPad as best tablet on the market
<p>“I think it’s great. Faster thinner lighter. What’s not to like?” (After iPad 463).</p>	
<p>“It honestly ended up being exactly what I wanted. I wanted cameras and a lighter body and I got it. ... Also that its thinner makes it even better. I can’t wait to finally have one” (After iPad 2 540)</p>	
<p>“iPad 2 is brilliant and for those people like me who didn’t bother with iPad 1 it’s everything I need plus more. I think that was their target market here since there are already so many more ipad users than all the other tablets combined” (After iPad 2 990)</p>	
<p>“I like it. Faster thinner lighter ... Apple has changed the choice from iPad or xoom to black or white iPad 2” (After iPad 1107).</p>	
<p>“I’m In LOVE. Honestly. I thought the iPad was gonna be thinner with a camera. But no! They made it white; with those epic colored smart cases it has a gyroscope ahh... I’m IN LOVE. Honestly do you think it would be that terrible of me to just feint about the iPad 3 and run a grab a 2? Who else likes the fact it’s WHITE? I honestly don’t care about resolution. I am just freakin’ in LOVE” (After iPad 1135).</p>	
<p>“A one time occurrence. There’s almost not real competitors for the ipad right now. Xoom just came out but its over priced. The tab is not running honeycomb and the sales of the unit have been lackluster. I’d like to see the lay of the land in the 3rd quarter. We’ll probably see a more crowded field at that point. Take a look at the iPhone marketshare and that will show you what will happen with the iPad. The tablet market will be flooded with various android and windows based tablets and apple’s market share will shrink” (After iPad 1890).</p>	
<p>“In my limited Xoom time I did not really like the browser very much. I just couldn’t get used to the Android tap to zoom system. Its far better and cleaner on the iPad. It bothered my a lot” (After iPad 3283).</p>	
<p>“... really don’t think the Xoom is much of a threat. The upcoming Galaxy Tab refresh however may prove to battle with the iPad for thinnest tablet and hopefully they didn’t make ridiculous compromises to get there” (After iPad 2 3495)</p>	
<p>“iPad 2 is so much better than my old iPad which I am going to give to my younger brother. Everything is faster in iPad 2 most probably because of the latest processor” (After iPad 6568).</p>	
<p>“I was on the fence not really 'needing' the upgrade. The tipping point for me is the fact that I do 4-6 video chats every week (mainly Skype some facetime) and often they include chasing my 3 little kids around my house. The iPad 2 is really the ultimate video conference device at least for me where it’s usually 2-4 of us trying to talk to 2 people. ... Also my kids love the iPad 1 so they’ll inherit that and I can finally use iPad 2 near-naked with just a clear skin and smart cover” (After iPad 2 7654).</p>	
<p>“YES It’s truly deserving of being called Magical!” (After iPad 2 6987).</p>	
<p>“I am loving mine.. LOVE it.. Just need to jailbreak it when it becomes available... it’s awesome” . (After iPad 2 7689).</p>	
<p>“Having the Xoom for a couple weeks will make you appreciate your iPad 2 that much more when it arrives” (After iPad 8402).</p>	
<p>“Absolutely! I didn’t need it at all - but I love it! (After iPad 2 9357).</p>	

Role of Materiality

To understand how sense made by online forum participants changes with different types of material experience, I ask two questions, paraphrased from my theoretical grounding: 1) *How do forum participants alter their a) use of physical properties, b) use of analogies, c) categorization, or d) use of cultural frames, in their sensemaking about a novel product with different types of material experience?* and 2) *How does forum participants' use of physical properties, analogies, categorization, and cultural frames to construct product meanings change with different types of material experience?*

I compared three types of material experience: 1) vicarious (experience that relies solely on information provided by others) the month preceding Apple's introduction of iPad (December 28, 2009 – January 26, 2010); 2) visual, from the time of Apple's introduction of iPad until its retail availability (January 27, 2010 – April 2, 2010); and, 3) direct experience, from iPad's retail availability until the introduction of iPad 2 (April 3, 2010 – March 2, 2011). Vicarious experience consisted of 8,941 posts across 103 discussions. On average, each post was 70 words in length with a range of 1-2,346 words. Visual experience consisted of 15,968 posts across 491 discussions. On average, each post was 67 words in length with a range of 1-3,455 words. Direct experience consisted of 13,511 posts across 600 discussions. On average, each post was 61 words in length with a range of 1-1,772 words.

Quantitative Analyses to Assess Changes in Sense Made With Different Types of Material Experience

To compare changes in the use of each physical property, analogy, categorization, and cultural frame with changes in the type of material experience I conducted a series of statistical t-tests.

Table 5 presents these results and values for Cohen's d , indicating effect sizes (Cohen, 1988). In the thematic analyses, I interpret these results.

Six material attributes were primarily used to make sense of iPad: display, media consumption, operating system, portability, production, and user experience. For a description of these attributes, see Table 2. Each of these attributes was used with all three types of experience. When forum participants were able to add visual experience to vicarious experience, there was a significant shift in the use of display, media consumption, portability, and user experience ($p < 0.01$ level) with the Cohen's d figures (-0.05 to 0.15) suggesting small effect sizes. There was no significant shift in the use of two attributes: operating system and production. When forum participants were able to add direct experience with iPad, there was a significant shift in the use of media consumption, operating system, production, and user experience ($p < 0.01$ level) with the Cohen's d figures (-0.13 to 0.10) suggesting small effect sizes. There was also a significant shift in the use of portability ($p < 0.05$ level) with the Cohen's d figures (-0.03) suggesting small effect size. The shift in the use of display was not significant ($p < 0.10$ level).

The analogies used were primarily from four product categories: tablet PC, netbook, iProduct, and MacBook. Each of these analogies was used with all three types of experience. All t -values are significant ($p < 0.01$). When forum participants were able to add visual experience to vicarious experience, the Cohen's d figures (-0.09 to 0.07) suggest small effect sizes; and, when forum participants were able to add direct experience with iPad, the Cohen's d figures (-0.17 to -0.14) also suggest small, although larger effect sizes.

The similarity in the results for changes in the use of material attributes and analogies suggests two things: first, material attributes and analogies act as a cognitive anchor around which sense is

made. Second, it provides empirical support for the idea that the attributes that are noticed and the analogies invoked change with different types of experience with the novel product (Kaplan & Tripsas, 2008; Weick et al., 2005).

Forum participants' public discourse often reflected on iPad as a categorically distinctive product; I coded under the label *Tablet*. When forum participants were able to add visual experience to vicarious experience, there was a significant shift in the use of Tablet from 41% to 14% of posts ($p < 0.01$) with the Cohen's d figure (-0.66) suggesting a large effect size. This suggests that with the shift from vicarious to visual experience, forum participants struggled to make sense of iPad as categorically distinctive. When forum participants were able to directly experience using iPad, there was minimal change in the use of Tablet (from 14% to 12% of posts; $p < 0.01$); Cohen's d : -0.04).

Forum participants used two main cultural frames: functional and symbolic frames. My analysis reveals that forum participants were more likely to use functional frames than symbolic frames. All t -values are significant ($p < 0.01$) and Cohen's d figures of 0.17 and -0.04 for functional frames suggest small to moderate effect sizes, whereas Cohen's d figures of 0.09 and 0.03 for symbolic frames suggest small effect sizes. Overall, this points to functional frames being more central than symbolic frames to ongoing public discourse about iPad.

Table 5: Comparison of Mean Instances of Code per Online Forum Posts by Forum Participants by Type of Material Experienceⁱ

	Vicarious (Before Jan 27, 2010)					Visual (Jan 27, 2010-Apr 2, 2010)					Direct (Apr 3, 2010-Mar 1, 2011)	
	Mean	SD	t-value		Cohen's d	Mean	SD	t-value		Cohen's d	Mean	SD
<u>Product Analogy</u>												
iPhone	0.307	0.461	4.427	***	-0.059	0.280	0.449	14.429	***	-0.168	0.208	0.406
MacBook	0.208	0.406	2.757	***	-0.037	0.194	0.395	11.651	***	-0.136	0.143	0.350
Netbook	0.028	0.165	5.292	***	0.068	0.040	0.197	14.809	***	-0.169	0.013	0.114
Tablet PC	0.029	0.166	6.689	***	-0.092	0.015	0.122	12.200	***	-0.138	0.002	0.048
<u>Product Category</u>												
Tablet	0.414	0.493	97.245	***	-0.658	0.135	0.342	3.318	***	-0.039	0.122	0.327
<u>Product Attribute</u>												
Display	0.132	0.339	3.959	***	-0.053	0.115	0.319	1.808	*	-0.021	0.108	0.311
Media Consumption	0.265	0.441	11.589	***	0.152	0.334	0.472	10.956	***	-0.128	0.275	0.447
Operating System	0.124	0.329	0.683		-0.009	0.121	0.326	5.096	***	-0.059	0.102	0.303
Portability	0.204	0.403	10.809	***	0.141	0.263	0.440	2.248	**	-0.026	0.252	0.434
Production	0.093	0.291	0.233		0.003	0.094	0.292	7.645	***	-0.089	0.070	0.255
User Experience	0.094	0.292	2.976	***	-0.040	0.083	0.276	8.664	***	0.102	0.113	0.317
<u>Cultural Frame</u>												
Functional	0.560	0.496	12.662	***	0.168	0.642	0.479	3.084	***	-0.036	0.625	0.484
Symbolic	0.183	0.387	6.656	***	0.087	0.218	0.413	2.927	***	0.034	0.232	0.422
Sample Size (Nr. Posts)	8,941					15,968					13,511	

* p < 0.10; ** p < 0.05; *** p < 0.01.

ⁱ Analyses based on unpaired t-test of unequal variance.

Thematic Analyses to Assess Changes in Sense Made With Different Types of Material Experience

In the thematic analyses, I find that forum participants embellish these analogies, material attributes, frames, and categorical determinations differently with changes in the type of material experience with iPad to construct quite different product meanings. To explain these changes, I organize this section by type of material experience.

Vicarious Experience (Dec 28, 2009 – Jan 26, 2010)

Public discourse in late 2009 and early 2010 about a potential Apple product was fueled by rumors from a range of sources, though none was directly attributable to Apple. The language used when embellishing an analogy or a categorical determination was often speculative; 41% of all forum posts during this time wrestled with this in some way: “I'm hoping it will be more open than the current iPhone OS we all know. I wouldn't look twice at a ‘big iPhone’” (Before Launch 688) or “The tablet is expected to be a multimedia device that will let people watch movies and television shows, play games, surf the Internet and read electronic books and newspapers.” (Before Launch 138). Sensemaking was focused on describing and evaluating the functional expectations about Apple’s future product, wrestling with whether or not iPad would be categorically distinctive: “IMO you need the tablet BECAUSE not only will the tablet be a media player and great cheap laptop.. it will ALSO be our new user interface for your primary computer” (Before Launch 7471). The upshot of which was that forum participants were cautiously optimistic that it would be categorically novel.

Visual Experience (Jan 27, 2010 – Apr 2, 2010)

Public discourse increased among forum participants on January 27, 2010 following Apple’s introduction of iPad to the market. Apple claimed that iPad is a new category of product located

between a smartphone and a computer, which provides a magical and revolutionary user experience when consuming media such as email, web browsing, organizing photos, and watching video. Forum participants rejected this ready-made interpretation emphatically: “I have never been so underwhelmed by an Apple product. All that hype for this? It does nothing more (that's useful, anyway) than an iPod touch. And it does far less than my iPhone, all for more money” (Before Retail Availability 643). They openly mocked Apple’s given meanings by using Apple’s symbolic language and use of analogy as the building blocks for their own sensemaking: “Give me a break. This isn't even a new product, it's just a larger iPhone. There's something insulting about treating it like it's something revolutionary” (Before Retail Availability 5650). Forum participants were using powerful symbolic frames of Apple to evaluate iPad’s functionality. The broad consensus: why would someone need something that was too functionally and physically similar to existing products, particularly iPhone.

This discordance arose, in part, because forum participants placed greater emphasis on size and overall appearance than Apple or they themselves had earlier: “I think they missed the boat on this one. Had a chance to be revolutionary but it looks like a giant iPod touch” (Before Retail Availability 7126) or “It's absolutely pretty. Apple is great at ‘pretty.’ But what would I use it for? I don't see how it makes my life any different or easier ... I also have an iPhone” (Before Retail Availability 222). The addition of visual cues had cemented forum participants’ sense that iPad was categorically similar to iPhone, therefore rejecting the notion that it was categorically novel. They loved their iPhones. But, they did not understand why they needed another one.

In the vicarious period, forum participants had hedged their use of analogies to help them distinguish Apple’s future product from existing products, e.g., iPad will be bigger and more

functional than iPhone. This had created a variety of expectations that centered on the pending product as categorically distinctive. Yet, when iPad became visually discernible, these expectations were largely unmet. This is further evidenced by the drop in public discourse surrounding iPad as categorically distinctive, from 41% in the vicarious period to 14% in the visual period. The result was disappointment and a discounted evaluation of iPad. There was also a shift in the tone of the discourse towards cynicism that was in some cases directed towards Apple in the form of rejecting their claims of categorical novelty.

The negative evaluation and difficulty in perceiving iPad as categorically distinctive arose in part because forum participants perceived that iPad provided no additional functionality to iPhone or MacBook. Moreover, they rejected Apple's primary claim that iPad was distinctive due to its magical and revolutionary user experience: "I think my big problem is that just throwing the iPhone OS on a tablet without a thorough optimization of the UI and of the capabilities of the device itself is no better" (Before Retail Availability 9893). Instead, by drawing from their own direct experiences with iPhone to make sense of iPad, they considered that a product with the same functionality and the same user interface would result in the same user experience.

Forum participants were no longer only employing analogies to make sense of what iPad is, but also to make sense of the user experience: they were now invoking a second dimension upon which novel products could be made sensible. The importance of analogous experience appeared to become more salient as the information about iPad shifted from being speculative during the prior vicarious period to concrete during the current visual period. And, these cues appeared to override Apple's articulation or demonstration of material interaction with iPad itself, which posited a revolutionary user experience. Thus, forum participants appeared to be anchoring on

their own direct experience with iPhone or on their own initial visual impressions of iPad. And, these experiences told them two things: iPad was too similar to iPhone and they didn't need iPad. Since both their earlier expectations and the claims by Apple suggested a categorically novel product, they were disgruntled.

Direct Experience (Apr 3, 2010 – Mar 1, 2011)

On April 3, 2010, Apple made iPad available for purchase. Apple's claims about iPad were largely consistent with those made at launch. These were claims largely rejected in the earlier period with forum participants being almost universally negative towards iPad. But, with direct experience, they switched to being almost universally positive. Now, instead of mocking Apple's interpretations, they embraced them: "I'd agree with Steve Jobs when he said it was something in-between an iPhone and computer. It's a replacement for neither just something else altogether" (After Retail Availability 4130) or "This thing is truly magical! I can't put this thing down! ... I'm in awe!!" (After Retail Availability 161).

Direct experience had enabled users to recognize the unique user experience that Apple had posited; with that, they were then able to perceive iPad as unlike any existing product. In contrast to the earlier period, when almost all cues suggested similarity with iPhone, direct material experience with iPad suggested difference: "Your hands get used to the iPad, and after it becomes comfortable to hold and use, it makes the iPhone seem so delicate and tiny. I have to squint to see the small screen on the iPhone now. My eyes and hands are adjusting to the iPad very quickly" (After Retail Availability 254). The attribute of size was now used to discuss the effect of the larger screen size on viewing experience rather than its inability to fit in a user's pocket. Or, it was understood with respect to how a user might hold it relative to iPhone—iPhone can be held in one hand whereas iPad has to be held in two. The two products require different

motor skills to hold and operate and therefore changed the user experience and therefore the sense made. This resulted in forum participants making sense of iPad as distinctive from an iPhone. The effect was a vastly more positive evaluation.

Direct experience had enabled forum participants to compare iPad to these analogous products using the same type of material experience. In the visual experience, there was a discrepancy in the type of usage: forum participants had both visual and direct experience with iPhone but only visual experience with iPad; this suggested that iPad was too similar to iPhone, i.e., it was not novel. This defied earlier hopes or expectations reducing the evaluation of iPad. Following direct experience with iPad, they were able to make comparative sense based on a similar type of material experience. This shows how forum participants were able to shift their use of analogies to emphasize not *what* the product is or does, but *how* it does it. This enabled them to categorize iPad as distinctive from iPhone. This suggests that an actors' own direct experiences are particularly salient when the explanation for the product's distinctiveness is based on *how* it performs its functions.

Yet, they were no more likely to emphasize iPad's categorically distinctive position (14% of paragraphs in the visual period and only 12% of posts in the direct experience period). This reflects in part that with direct experience, forum participants were focused on how to use iPad rather than iPad's position within a broad classification system. Second, since there was a sense that iPad was unique, i.e., there were no comparison products on the market, the need to discuss its categorical position was less salient. Third, direct experience enabled them to focus attention beyond the purely cognitive to the experiential; and for that they drew from a different vocabulary, one that didn't include product categories but emphasized symbolic or effusive

language instead. With direct experience, sensemaking, although describing functional things, was littered with symbolic and expressive framing: “This thing is truly magical! I can't put this thing down! ... I'm in awe!! Thanks apple!!!” (After Retail Availability 161). It begins to show how forum participants were beginning to see how iPad enriched their lives in non-utilitarian ways. Their discourse focused not on functionality or direct user experience *per se*, but on how it made them feel. There was some sense that the addition of the dimension of *how* iPad performed its task was a necessary condition for this symbolic dimension to surface.

Forum participants rarely reconsidered earlier product meanings that were deemed implausible during the visual period. For instance, they seldom framed iPad as a content-production product; this was a task for computers and iPad had been perceived as not a computer during the visual experience period. To forum participants, iPad was only a media consumption device. This was despite the fact that Apple had increased its discourse surrounding iPad as a device for production, and third-party app developers were creating thousands of content-production apps. This begins to explain how earlier sensemaking about a new product has a strong effect on later sense made; as plausible analogies are discarded, they are rarely reconsidered. Since sensemaking often relies on analogy, the reduction in the number of analogies available reduces the number of plausible interpretations over time.

Overall, this is consistent with earlier findings that the materiality of the novel product influences sensemaking by providing a cognitive anchor. It also explicates how the nature of the material experience alters sense made. With changes in material experience, forum participants pay relatively more attention to different material attributes and invoke different analogies. Most importantly, the shift to direct experience facilitated the emphasis onto the user experience; as a

result they were able to consider *how* iPad performed its functions as unique relative to other types of product, i.e., iPad was categorically novel.

Chapter Summary

In this chapter, I have provided detailed analyses of sensemaking by forum participants about iPad. In particular, I discussed the role of time and materiality, explicating how product meanings changed with different types of material experience, shifting from strongly negative evaluations with visual experience to strongly positive evaluations once forum participants were able to materially interact with iPad. Within this discussion, I also described how cultural frames are implicated in sensemaking and how the claims put forward by the producer, Apple, are referenced and incorporated into forum participants' sensemaking, but rarely readily accepted. In the next section, I provide a record of similar analyses undertaken for a second audience: technology journalists, also emphasizing similarities and differences between the two audiences.

Table 6: Forum Participants: Comparative Sense Made by Type of Experience

Descriptive Summary	Illustrative Quotes
Use speculative language to set functional expectations of a categorically novel product	<u>Vicarious Experience (Dec 28, 2009–Jan 26, 2009)</u>
	<p>“I'm interested in this if it can do at least a few minimum computer-like things. If I can work on documents, internet, email, print, watch dvds, etc, that might be enough. I'd love to have something like this replace a laptop. Someone mentioed the size relative to a piece of paper. I'd like to see them find a way to use this form to take notes. I'm not sure how to do it without using the screen like a piece of paper (with a pen or stylus? -- and eliminating the ability to use the tablet as your textbook at the same time). Anyway, I'm optimistic that this will be something worth getting.” (Before Launch 122).</p> <p>“The tablet is expected to be a multimedia device that will let people watch movies and television shows, play games, surf the Internet and read electronic books and newspapers. Any computer can do this. An iPhone can do it, and it fits in your pocket. Not getting what is so revolutionary about this product. There had better be something else that the rumors haven't revealed. Oh well, I guess we'll see tomorrow...” (Before Launch 138)</p> <p>“I hope they engineer one inexpensive version that competes in the "Netbook" market: "for surfing the web email and casual computing." It would be nice to have a device priced for all to afford as opposed to another that one might be considered as being the BMW Mercedes Benz and Audi of computer devices” (Before Launch 4849).</p>
Use functional and symbolic language to explicate how expectations of categorically novel product are not met	<u>Visual Experience (Jan 27, 2010–Mar 31, 2010)</u>
	<p>“No, it's a giant iPod touch. The iPad cannot make calls, so how can it be a giant iPhone? Key word here: PHONE” (Before Retail Availability 241).</p> <p>“Disappointing. This is a mega-iPod touch without the camera. Apple's eBook reader. There's certainly nothing revolutionary about making an iPod touch with a bigger screen” (Before Retail Availability 1144).</p> <p>“I'm sure later they'll add Flash, a front camera, video Skype, more memory, and they'll cut the price. It will grow into something cooler. For now, why should I buy this if I already have an iPhone? The only thing I'm getting is a bigger screen. It's \$500 for a big screen. Is that worth it? Maybe. It's a pain to read books on my iPhone, and reading them on my MBP isn't much better. Of course \$500 could buy a hell of a lotta good books...” (Before Retail Availability 793).</p> <p>“I'm kinda with you on this one. It needs to be more of the hybrid between a laptop and an iPhone/iPod Touch it is being touted as. Right now, it is just a big iPhone/iPod Touch that can run the new iWork suite. It's needs a bit more functionality” (Before Retail Availability 1525).</p> <p>“I think you mean to say it would be the perfect iPod for your mom. This is not a tablet Mac, folks... It's a really big clunky iPod Touch that views photos and does eBooks. And nothing else! It's impractical to enter text on by all accounts, you can't surf the web properly because it doesn't do flash, you can't print, you can't play DVDs. It's just a really big ol' iPod Touch! I'm going to put my iPad next to my Apple TV” (Before Retail Availability 2228).</p> <p>“Give me a break. This isn't even a new product, it's just a larger iPhone. There's something insulting about treating it like it's something revolutionary” (Before Retail Availability 5650)</p> <p>“This does nothing my iPhone ... doesn't. Maybe for watching TV shows in bed or surfing the web in full screen while sitting on the sofa, but revolutionary? No.” (Before Retail Availability 820)</p> <p>“I have never been so underwhelmed by an Apple product. All that hype for this? It does nothing more (that's useful, anyway) than an iPod touch. And it does far less than my iPhone, all for more money” (Before Retail Availability 643)</p> <p>“iPad is so weak in term of a 'computer'. People have different expectations for a small screen smartphone, and a big screen computer, what works on a iPhone, might just not gonna be good enough on a computer” (Before Retail Availability 287).</p> <p>“Same here, the "most advanced technology in a magical and revolutionary device at an unbelievable price" is junk to me when I have an iPhone that fits into my pocket. My MBP is nice to have for my school work and I love the iPhone for my maps, Facebook, and other materials I used on the go. I have the internet with me too. Why do I need to get the iPad” (Before Retail Availability 1763).</p> <p>“Quite a disappointing product after so much anticipation. It's a neither here nor there product. Looks cool but in terms of functionality, I would rather stick to my iPhone and macbook. Unless the price drops to \$200, I may then consider buying this product and using it to surf the web occasionally and also using it as one of those photo frame thingies that display photos” (Before Retail Availability 1118).</p> <p>“I don't know just my opinion but the iPhone is a lot different than a computer multi touch apps on the homescreen ability to flick through home screens etc. I love apple but the ipad just seems like a big iPod touch. I was hoping for something like a mac os x computer with multi touch. I was dissapointed and I wonder how this device will sell?” (Before Retail Availability 8313).</p> <p>“TOTALLY agree. I think this iPad is a real cop-out. I REALLY want a new toy (I have just over £3,200 in my "fun stuff" savings account) but, as someone who has an iPhone and a MBP (like a large number of Apple users), I just don't see when I'd want this. The iPhone is more portable and the MBP does things better. No multitasking, no flash... well, all the things that people are no doubt moaning about all over these forums, make this - very unfortunately - a no buy for me” (Before Retail Availability 579).</p> <p>“As it is, we have our Macbooks/Macbook Pros for laptops, our iPhones for cell phones, music, youtube, and games. So what do I need a poorly implemented tablet that functions [like a] rather large iPhone for?” (Before Retail Availability 895)</p> <p>“Less than a netbook for more money. No multitasking--an Apple tradition. No camera--so no skypeing, no teleconferencing” (Before Retail Availability 318).</p>

Direct Experience (Apr 1, 2010–Mar 1, 2011)

Use functional and symbolic language to explicate how unique user experience makes iPad a categorically novel product

- “the iPad handily beats any netbook alternative (and I’ve tested several)” (After Retail Availability 86)
- “This thing is FAST!!!! Way faster than expected. Screen is beautiful -- Enterprise and Captain Kirk looks great on it. Webpages load in faster than new iMac i7 on same network. Wow” (After Retail Availability 112).
- “You have to leave the desk with one -- sit on the sofa with it -- to really grasp how it will begin to change lifestyles. So much more enjoyable than a laptop/netbook. It just changes the whole experience. I am hooked” (After Retail Availability 115).
- “Yes it took me 5 minutes with keyboard and now I love it. My first reaction was eeeewwwwww, then I hung in there, adjusted my fingers and now I am getting it. Like it a lot. Better but very very different feel than iphone” (After Retail Availability 123).
- “This is an absolute pleasure to use. Much heftier than I anticipated, but the speed and (dare I say) intimacy of its usability is worth while” (After Retail Availability 213).
- “After using the iPad for a few hours, when picking up the iPhone, it feels SOOOO SMALL and cramped! Like a little toy. Your hands get used to the iPad, and after it becomes comfortable to hold and use, it makes the iPhone seem so delicate and tiny” (After Retail Availability 254).
- “I absolutely love this thing. Typing is a lot better than I expected. HD movies look great. Web browsing is really good, but I do feel Flash is really needed before it can be called the best. I love my giant iPod Touch” (After Retail Availability 307).
- “It’s a whole new class of device. It’s really revolutionary, and I expect it will become just as ubiquitous as the PC, the MP3 player and the smartphone” (After Retail Availability 432).
- “All I can say is WOW! I love this thing. Very fast and responsive for sure. Screen looks amazing.....I will no longer use my laptop except for when i have to do design projects!” (After Retail Availability 2045).
- “Loving it! Absolutely loving it! The screen is super responsive--you can click on the tiniest spot and have it know what you’re clicking on. Typing on it isn’t bad either. I just have to get used to not having lazy fingers on the keyboard. . I’m typing on it 2-handed in portrait mode and it’s not bad at all. I think I’m in love.....” (After Retail Availability 2254).
- “The browser is really quick and it’s definitely a different experience than my desktop or laptops. I’m posting this from my iPad now. Something else the battery life is insane. I’m in love with it” (After Retail Availability 2762).
- “This has been the biggest surprise for me so far as someone who has had an iPhone since day 1. I expected the web browsing to be good but it’s amazing. I keep being surprised when I remember that I don’t need apps for a bunch of sites like I do for the iPhone since I can just go to the regular site. And with most of these sites it’s just so much easier to touch the link than to move the mouse and click on it” (After Retail Availability 3665).
- “i think its safe to say that my recreational web browsing will now take place on the iPad instead of my MacBook pro. It is so nice to browse and the perfect size! Unfortunately my girlfriend feels the same way so that might cut into my chances to actually use it” (After Retail Availability 3707).
- “I’m finding my desire to use my iPad as my primary browser is definitely increasing as I use it. I expected it to be workable (obviously or else I wouldn’t have bought it) but I didn’t expect it to feel so preferable to my desktop. I never really gave much thought to how much the form factor of the browser influences the experience you get with the same content” (After Retail Availability 3710).
- “Definitely. I was one of the individuals who thought it was just a over glorified iPod touch. Played around with the demo unit and walked out of the store with one. I have been using since this morning in fact writing this very post with it as I simply can’t put it down. Simply put it’s amazing what this device is capable of and will put it to the test when I bring it to work next week” (After Retail Availability 3801).
- “The iPad is a nice device and a great toy. It’s no replacement for my MBP at all. While I do like my iPad it’s still a large iPod Touch and still limited by the iPhone OS. I’d agree with Steve Jobs when he said it was something in-between an iPhone and computer. It’s a replacement for neither just something else altogether” (After Retail Availability 4130).
- “For web surfing which is probably 75% of my non-work computing the iPad has almost entirely replaced my MacBook Pro iMac and iPhone. It’s the best fastest easiest web browsing device I’ve ever used” (After Retail Availability 6132).
- “I’ve been really loving the web browsing experience and the keyboard is getting a lot easier to type on. It’s funny to say but it actually breathes new life into written media... I’ve been reading the blogs, news, gossip all day. YouTube videos integrate nicely as well. I think this will in fact revolutionize the industry. I have a MacBook. But find this to be much more fun and interactive. Can’t explain it. You just need to try it yourself. Not the same as a iPhone or iPod touch” (After Retail Availability 11610).
- “screen real-estate gives it a ton of potential” (After Retail Availability 13325)
- “Nothing like the iPhone, especially safari. Tabs and open are oddly like chrome. Sick and stunning. And the damn thing flies. And not like the ‘brand new iPhone’ fast, like super duper fast. Drop down menus in almost all the apps rock. Pardon the pun, but this is what the iPhone wants to be when it grows up” (After Retail Availability 13271)

Chapter V: Findings

Technology Journalists: Sense Made about iPad

In this chapter, I present the findings of my analyses of audience sensemaking by technology journalists. This includes articles published: 1) in top technology business publications, e.g., Bloomberg Businessweek and Financial Times; 2) in top technology trade publications, e.g., cnet and Wired; 3) in top technology blogs, e.g., Engadget and Gizmodo; and 4) by top journalists, e.g., David Pogue at The New York Times and Walt Mossberg at The Wall Street Journal. I present these findings in two sections. In the first, I analyze how sensemaking changes over time; and, in the second, I consider the role of materiality in sensemaking. In each section, I consider three further things: 1) how cultural frames are implicated in sensemaking; 2) how the claims put forward by the producer, Apple, are incorporated into audience sensemaking; and, 3) the public role of the audience by comparing and contrasting sense made by the technology journalists and the forum participants. I organize each section in two parts: in the first, I present the findings from the quantitative analyses to provide a broad overview of how sensemaking changed over time or with different types of material experience. In the second, I present findings from the thematic analyses in order to provide a nuanced account of how sensemaking changed. Within the presentation of the thematic analyses, I intersperse the narrative with significant quotes intended to illustrate my interpretations, and I provide additional selected quotes in separate tables to demonstrate the robustness of my claims.

Role of Time

To understand how sense made by online technology journalists changes over time, I ask three questions, paraphrased from my theoretical grounding: 1) *How do technology journalists a) alter*

their categorization, b) add new analogies, or c) change their use of functional and symbolic frames, in their sensemaking about a novel product over time? 2) How does technology journalists' use of categorization, analogies, and cultural frames to construct product meanings change over time? and 3) How does the audience's public role affect sensemaking about a novel product change over time? The first two are the same as the questions I asked for forum participants; and, the third compares sense made by the two audiences.

I compared early-stage sensemaking (December 28, 2009 – January 26, 2010) and late-stage sensemaking (March 2, 2011 – April 2, 2011). The unit of analysis was a paragraph (this is in contrast to the online forums, where the unit of analysis was a post). Early-stage sensemaking consisted of 1,250 paragraphs across 115 articles. On average, each paragraph was 48 words in length with a range of 1-203 words. Late-stage sensemaking consisted of 3,088 paragraphs across 217 articles. On average, each paragraph was 46 words in length with a range of 1-254 words.

Quantitative Analyses to Assess Changes in Sense Made Over Time

To compare changes in the use of each analogy, categorization, and cultural frame between the two time periods I conducted a series of statistical t-tests. Table 7 presents these results and values for Cohen's d, indicating effect sizes (Cohen, 1988). In the thematic analyses, I interpret these results, and compare sense made by forum participants and technology journalists.

The analogies used were primarily from the same four product categories used by forum participants: tablet PC, netbook, iProduct, and MacBook (see Table 2 for a description). Each of these four product categories was used in both time periods. Despite their likely wider repertoire of products from which to choose, technology journalists, like forum participants were most

likely to anchor their sensemaking in Apple products, iProduct (predominantly iPhone) and MacBook. All t-values are significant ($p < 0.01$ level) and Cohen's d figures (-0.10 to -0.38) suggest small to moderate effect sizes. This is broadly consistent with my analysis of online forums; and this supports existing work (Hargadon & Douglas, 2001; Navis & Glynn, 2010; Rosa et al., 1999) that has found a general decline in the use of analogies in public discourse as novel products become more familiar (Powell & Colyvas, 2008); it also provides evidence that as the tablet category emerges, there is a decline in the use of analogy. Interestingly, the effect sizes tended to be smaller for journalists than for forum participants, suggesting that journalists' sensemaking may be relatively more stable over time.

I also find that, consistent with my analysis of forum participants, these technology journalists did not add new analogies over time. Absent the addition of new analogies to public discourse, technology journalists did not modify their sense of the broad categorical position of iPad. Instead, they refined their understanding of the categorical positioning by dropping from their discourse, netbook and tablet PC, two used analogies and potential categories to which iPad could belong. It is perhaps surprising that these different audiences did not use different analogies at the outset given their likely different technological frames. One potential reason is that the rumors about iPad during the early-sensemaking stage were broadly accurate and therefore both audiences were able to rely on similar information when selecting their analogies and crafting product meanings, i.e., they were less dependent on extrapolating information from their past experiences or existing technological frames. However, as iPad became more familiar, it is less surprising that these two audiences drew from the same pool of analogies.

Also consistent with my analysis of the online forums, technology journalists' public discourse often reflected on iPad as a categorically distinctive product. This included the use of a categorical label to describe this novel product, its position within a broader classification of products, and how it was distinctive from existing products that I coded under the label *Tablet* (for a description, see Table 2). My analysis reveals that 61% of paragraphs during early-stage sensemaking were coded as Tablet in contrast to 55% during late-stage sensemaking; this stands in contrast to the forum participants, who reflected on iPad as a categorically distinctive product in 41% of both time periods. This hints at the greater salience in journalists' discourse about iPad's categorical positioning. This is consistent with the idea that forum participants are primarily trying to understand iPad with respect to purchase intention or general usage, whereas journalists, as part of providing broader information to the public, also must emphasize iPad relative to other products, including its categorical position. The difference between the two time periods for journalists was statistically significant ($p < 0.01$). The small effects size (Cohen's $d = -0.13$) is broadly consistent with the idea that categorization prior to the launch of a novel product is resilient to change.

Consistent with my analysis of the online forums, technology journalists used two main frames: functional and symbolic (for a description, see Table 2). My analysis suggests that that time has little bearing on the broad nature of the frames selected. Although there was a significant shift in the use of functional frames ($p < 0.01$) between the two time periods, the Cohen's d figure of -0.13 suggests a small effect size; I also find that there was no significant shift in the use of symbolic frames between the two time periods. My analysis also reveals that journalists were more likely to use functional than symbolic frames across both time periods; this might suggest that functional frames are more central than symbolic frames to ongoing discourse about iPad.

Interestingly, journalists were relatively more likely to use functional than symbolic frames compared to forum participants across both time periods. This might suggest that the role of the journalist to inform others called for greater emphasis on the functional aspects of iPad, i.e., those aspects that could be easily verified, whereas the forum participants had greater freedom to use expressive or symbolic language to make sense of iPad in ways that could not easily be subject to verification.

Table 7: Comparison of Mean Instances of Code per Paragraph by Technology Journalists Between Early- and Late-stage Sensemakingⁱ

	Early-stage Sensemaking (<Jan 27, 2010)		Late-stage Sensemaking (>Mar 2, 2011)				
	Mean	SD	t-value	Cohen's d	Mean	SD	
<u>Product Analogy</u>							
iPhone	0.267	0.443	10.538	***	-0.375	0.121	0.327
MacBook	0.126	0.332	4.770	***	-0.167	0.075	0.264
Netbook	0.010	0.101	2.592	***	-0.097	0.003	0.051
Tablet PC	0.011	0.105	3.004	***	-0.115	0.002	0.044
<u>Product Category</u>							
Tablet	0.607	0.489	3.736	***	-0.125	0.546	0.498
<u>Cultural Frame</u>							
Functional-Descriptive	0.674	0.469	3.922	***	-0.130	0.612	0.487
Symbolic-Evaluative	0.139	0.346	1.011		0.060	0.160	0.367
Sample Size (Nr. Paragraphs)	1,250				3,088		

* p < 0.10; ** p < 0.05; *** p < 0.01.

ⁱ Analyses based on unpaired t-test of unequal variance.

Thematic Analyses of Changes in Sense Made over Time

In the thematic analyses, technology journalists embellish these analogies and categorical determinations differently in the two time periods to construct quite different product meanings.

To explain these changes, I organize this section by time period, highlighting the similarities and differences with the forum participants.

Early-stage Sensemaking (Dec 28, 2009 – Jan 26, 2010)

Prior to Apple's introduction of iPad, technology journalists were more likely than forum participants to discuss the categorical position of Apple's future product. In doing so, they relied on the same analogies as forum participants that they also used in similar ways. In general, they relied most heavily on iPhone and MacBook, using hedges (Rosch, 1978; Zerubavel, 1993) to suggest that it would be bigger and more functional than an iPhone, and more portable than a MacBook. Although there was agreement as to the positioning for Apple's future product within a broad classification scheme, there was disagreement as precisely how and where this product might fit-in.

These disagreements were consistent with those that occurred among forum participants. For some, it was framed as a new category of product designed for media consumption. For others there was concern that it might be too similar to iPhone or MacBook or not sufficiently distinctive from both. Whereas for others, there was a sense that it would become Apple's version of a netbook or a tablet PC; and, in these cases, Apple's future product did not require hedging relative to the analogies. In contrast to forum participants, technology journalists were more likely to consider the content production potential of Apple's future product. And, in framing it as a content production as well as a media consumption product, they were more likely than forum participants to consider Apple's future product as relatively more similar to MacBook than iPhone.

“Do I think The Tablet is an e-reader? A video player? A web browser? A document viewer? It's not a matter of or but rather and. I say it is all of these

things. It's a computer. ... And so in answer to my central question, regarding why buy The Tablet if you already have an iPhone and a MacBook, my best guess is that ultimately, The Tablet is something you'll buy instead of a MacBook. ... So what are we looking at? It's another Mac. Straight up. It's not a better iPod or a better Touch or a better Tablet. It's a new computer from Apple" (TechCrunch 2009.12.31).

Similar to my findings from the online forums, technology journalists embellished similar analogies, frames, and the same broad categorical position of Apple's future product in a number of different ways. To do, this also relied heavily on the perceived physical and functional attributes of the product. Sometimes, they even relied on similar attributes and analogies to craft different meanings, demonstrating how analogies and attributes can provide flexible building blocks for sensemaking. For instance, the increased size relative to iPhone was seen by some as providing more screen real-estate and therefore the potential for greater functionality and was positively viewed, or by others as providing no extra functionality and the inability to be carried around in your pocket and therefore negatively viewed. Overall, evaluations were somewhat ambivalent, with those journalists expecting a categorically distinctive product more positive than those who did not.

Yet, these evaluations or their discourse more generally rarely used symbolic or expressive language and seldom included notions of broader cultural themes to consider how the product would enrich users' lives; instead, their evaluations tended to emphasize functional purpose. Relative to forum participants, journalists relied more heavily on functional frames; in doing so, they were emphasizing the more verifiable parts of the emerging rumors about iPad and were less inclined to make idle speculation. But, similar to forum participants, technology journalists were hopeful that Apple's future product would be categorically distinctive, but were somewhat ambivalent about whether it would be.

Late-stage Sensemaking (Mar 2, 2011 – Apr 2, 2011)

By the time Apple introduced the second-generation iPad on March 2, 2011, others' products such as Motorola's Xoom and Samsung's Galaxy had hit the market; as a result the tablet product category had emerged. Journalists increasingly compared iPad 2 to these other tablets as well as to the first-generation product; the arrival of the other tablets had provided a more direct type of product comparison. In early-stage sensemaking, journalists relied on analogy because Apple's future product did not appear to fit neatly into any existing product category. But, with the emergence of other tablets, it had become clear to which category iPad belonged. Journalists had largely come to see iPad as the best or prototypical exemplar of the nascent tablet product category, consistent with Apple's claims:

"It might frustrate the competition to hear this, but it needs to be said: the iPad 2 isn't just the best tablet on the market, it feels like the only tablet on the market. As much as we'd like to say that something like the Xoom has threatened Apple's presence in this space, it's difficult (if not impossible) to do that" (Engadget 2011.03.09).

Thus, the ambivalence of early-stage sensemaking had been replaced with almost universally positive evaluations that, on occasion, embraced symbolic references to history and the nostalgia of the first generation iPad as well as an eye to an improved future:

"TechCrunch Review — The iPad 2: Yeah, You're Gonna Want One. In January 2010, shortly after its unveiling, I first got my hands on an iPad. My initial reaction? "The iPad is like holding the future." And that's funny because here we are, just a little over a year into that future, and something new has come along that makes holding the iPad 1 feel like holding the past: the iPad 2" (TechCrunch 2011.03.09).

This might suggest that as iPad became more familiar, technology journalists were able to shift their attention to the more symbolic aspects of iPad. This is corroborated by an uptick in discourse that to understand iPad, you needed to think beyond its functional parameters: iPad

was increasingly seen as a form of escape. As one journalist put it: iPad “creates a space for cognitive free play, and even, possibly, an invitation to meditative and evaluative thought. I don’t want my life to be surrounded by utilitarian objects. I don’t want everything to be ‘for’ something” (ATD 2011.03.02). As I will elaborate later, this sense of transcendence arose following journalists’ ability to materially interact with iPad.

Technology journalists like forum participants were no longer employing analogies to categorically position iPad. Nor were they using analogies as hedges to suggest similarity or difference. Instead, they used iPhone and MacBook as a point of comparison; they knew that iPad was a different kind of product to iPhone and MacBook, but by using the analogy in the form of a simile, journalists made their sense of iPad more vivid: “the device is thinner than the astoundingly thin iPhone 4 -- quite a feat considering what's packed inside the [tablet]” (Engadget 2011.03.09). This example illustrates another example of how the analogy of iPhone and the attribute of size were used to craft an entirely different meaning, further demonstrating how analogies and attributes can provide flexible building blocks for sensemaking.

Thus early-stage sensemaking influenced late-stage sensemaking in a two main ways: first, it provided a stable supply of attributes, analogies, frames, and broad categorical position; these acted as the building blocks for journalists’ sensemaking. But, these were used to craft different meanings. Instead of using them to explicate *between* category distinctiveness as was the case in early-stage sensemaking, in late-stage sensemaking they were used to explain *within* category prototypicality or superiority. Second, early-stage sensemaking provided concrete meanings that were retained and constrained what was plausible during late-stage sensemaking. This is perhaps most apparent when we consider that technology journalists continued to perceive iPad as a

device for content production. This departs from sensemaking of forum participants who continued to only frame iPad as a device for media consumption. This suggests that, in the case of journalists, they still had retained the meaning from early-stage sensemaking that iPad might be a production device. Such a meaning was discarded by forum participants; as a result it was presumably unavailable to them during late-stage sensemaking. This may suggest that journalists' public role not only provided them with a broader range of possible meanings at the outset, but also the tendency to retain more meanings as plausible that could then be used to construct meaning at a later time. This suggests that journalists might be more flexible and open to change. It might also suggest that when product meanings are rejected, they are no longer retained as possible meanings in the future when new information is provided. So, part of the flexibility exhibited by journalists is the result of having more retained meanings available for selection during late-stage sensemaking.

Overall this is consistent with earlier findings that broad categorical positioning of a novel product is resistant to change and that sensemaking shifts to emphasizing within category comparison with emergence of the product category (Navis & Glynn, 2010; Rosa et al., 1999). But, it extends this work to show how specific product meanings may vary. For instance, despite the early-stage sensemaking providing a broad understanding of the iPad's categorical position, it was still unclear whether or not iPad would be considered categorically distinctive or simply a member of several existing product categories. But, by late-stage sensemaking, these technology journalists were clear that iPad was categorically distinctive and a member of the nascent tablet product category.

These findings also suggest that the broad categorical positioning was shared by both audiences across both time periods. This might reflect the similar information and wide access to public discourse that afforded both audiences to arrive at a shared sense of iPad's categorical position. But, the variation in non-categorical meanings might reflect the differences in interests of the two audiences. For instance, it may not be a problem of retention that resulted in forum participants only framing iPad as a media consumption device during late-stage sensemaking; it might be that their interests in the product were for personal and not business use. Whereas, the journalists' interests were in reviewing the novel product for others; and, part of that involved categorizing iPad and explicating its full range of functional possibilities.

Table 8: Technology Journalists: Comparative Sense Made Over Time

Descriptive Summary	Illustrative Quotes
Functional evaluation of iPad via broad categorical positioning	<u>Early stage Sensemaking (Dec 28, 2009–Jan 26, 2009)</u>
	“If it’s too big to fit in a pants pocket, how are you supposed to carry it around? And but if it does fit in a pants pocket, how is it bigger enough than an iPod Touch to justify existing? And so on” (ATD 2010.01.05)
	“If you already have an iPhone and a MacBook; why would you want this?” (ATD 2010.01.05)
	“‘It’s a combination of e-book reader/Web-surfing device/e-mail/ video player,’ Munster says. Third-party applications, which are so popular on the iPhone, will extend the tablet’s functionality and ‘really let it rip,’ he says” (USA 2010.01.05)
	“An Apple tablet that is bigger than an iPhone and smaller than a laptop ‘is likely to be a terrific product, but unless it meets some need not currently met by a netbook or iPhone, it’s a limited opportunity’” (USA 2010.01.05).
	“The tablet is expected to be a multimedia device that will let people watch movies and television shows, play games, surf the Internet and read electronic books and newspapers. Though companies like Toshiba Corp. and Hewlett-Packard Co. have introduced Windows-based tablet computers before and Amazon.com Inc. and others sell similarly-sized digital-book readers, people briefed by Apple say the company intends to carve out a new product category” (WSJ 2010.01.05).
	“Multiple independent reports have described the tablet’s appearance as a 10- to 11-inch iPhone or iPod Touch. (AppleInsider’s sources describe the tablet as “a first-generation iPhone that’s met its match with a rolling pin.”) The tablet, many have reported, will serve as a slate-like substitute for magazines, newspapers and books, while also offering the general-purpose functions seen in the iPhone, such as gaming, viewing photos, web surfing and using apps” (Wired 2010.01.24).
	“The tablet device clearly targets consumers. The mix of applications observed comprises mainly of media and entertainment consumption as opposed to enterprise, productivity and computing... With rumors of large newspaper and book publisher deals, combined with its reading-friendly form factor, we speculate that the new Apple tablet will focus heavily on daily media consumption” (ATD 2010.01.25a).
	The team working on the Apple tablet likely began creating the user experience for the new device with a blank sheet of paper. Simply trying to scale the iPhone interface would be too limiting, and wouldn’t result in the optimum user experience. ... Ultimately, I expect Apple to create a third operating system (after Mac and iPhone, not including Apple TV or iPod since they don’t support app development) for the new tablet. It will be based on OS X, but will have an entirely new user interface that is optimized for the screen size and purpose of the device (GigaOM 2010.01.21).
	To be novel, will need to provide unique user experience
Functional and symbolic evaluation of iPad as best tablet on the market	<u>Late-stage Sensemaking (Mar 2, 2011–Apr 2, 2011)</u>
	“One reason that this is wonderful is that we all spend a great deal of time doing nothing in particular, and doing nothing in particular is central to doing everything else in particular. “Nothing in particular” is a big part of our lives—probably one of the biggest parts, if we added it all up. We don’t notice the interstitial moments, though. The distractions, noodling around, passing time, and taking a break. But even when we’re doing something in particular, our tools are useful not just in the mechanics of the particular task at hand, but in our approach and mood” (ATD 2011.03.02).
	“I mean it has a faster chip. It has two cameras. It has a new OS. It has a gyroscope. It can do HDMI video out. It can play nice with all iTunes content. It sure is thinner — about one-third thinner than the current iPad — and 0.2 pounds lighter than the current iPad, which weighs 1.5 pounds” (GigaOM 2011.03.02a).
	“That said, if you’re a first-time tablet buyer, it’s perhaps your best option on the market right now. It has a fast processor, is light, is ultra thin, is available in a week, and more importantly, it’s far ahead of what else its rivals are selling (or are planning to sell.)” (GigaOM 2011.03.02a)
	“Let me explain. On an iPad, you have four elements — big screen, touch, connectivity and location — that make it unique. The iPad 2 has added two cameras and a gyroscope to the mix, making the device even more potent” (GigaOM 2011.03.05).
“The iPad 2 received a higher rating than the Xoom because we think that it’s a better device overall. But again, the Xoom is no slouch. If you aren’t tethered to iTunes, the Xoom is the best non-Apple tablet you can buy. Will the BlackBerry PlayBook or other Android tablets change that? Stay tuned” (PCmag 2011.03.12a).	
“So is the Galaxy Tab 10.1 an iPad 2 killer? I don’t think so, but it’s a lot closer to being competitive than Samsung’s first attempt. Tell us in the comments if you agree” (Mashable 2011.03.22).	
“Although the iPad 2 isn’t the dramatic redesign that some observers had hoped it would be, the company has managed the difficult feat of balancing expectations and economics, and in the process has raised the bar for the competition” (eWeek 2011.03.30).	

Role of Materiality

To understand how sense made by technology journalists changes with different types of material experience, I ask three questions, paraphrased from my theoretical grounding: 1) *How do technology journalists alter their a) use of physical properties, b) use of analogies, c) categorization, or d) use of cultural frames, in their sensemaking about a novel product with different types of material experience?* 2) *How does technology journalists' use of physical properties, analogies, categorization, and cultural frames to construct product meanings change with different types of material experience?* and 3) *How does the audience's public role affect changes in sensemaking about a novel product with different types of material experience?* The first two are the same as the questions I asked for forum participants; and, the third compares sense made by the two audiences.

I compared three types of material interaction: 1) vicarious (experience that relies solely on information provided by others) the month preceding Apple's introduction of iPad (December 28, 2009 – January 26, 2010); 2) visual, from the time of Apple's introduction of iPad until its retail availability (January 27, 2010 – April 2, 2010); and, 3) direct experience, from iPad's retail availability until the introduction of iPad 2 (April 3, 2010 – March 2, 2011). Vicarious experience consisted of 1,250 paragraphs across 115 articles. On average, each paragraph was 48 words in length with a range of 1-203 words. Visual experience consisted of 5,177 paragraphs across 417 articles. On average, each paragraph was 44 words in length with a range of 1-313 words. Direct experience consisted of 11,097 paragraphs across 837 articles. On average, each paragraph was 44 words in length with a range of 1-327 words.

Quantitative Analyses to Assess Changes in Sense Made With Different Types of Material Experience

To compare changes in the use of each physical property, analogy, categorization, and cultural frame with changes in the type of material experience I conducted a series of statistical t-tests. Table 9 presents these results and values for Cohen's d, indicating effect sizes (Cohen, 1988). In the thematic analyses, I interpret these results, and compare sense made by forum participants and technology journalists.

Consistent with my findings for forum participants, six material attributes were primarily used to make sense of iPad: display, media consumption, operating system, portability, production, and user experience. For a description of these attributes, see Table 2. Each of these attributes was used with all three types of experience. When journalists were able to add visual experience to vicarious experience, there was a significant shift in the use of media consumption, operating system, and portability ($p < 0.01$) with the Cohen's d figures (-0.09 to 0.09) suggesting small effect sizes. There was no significant shift in the use of display, production, and user experience. When technology journalists were able to add direct experience with iPad, there was a significant shift in the use of media consumption, portability, and production ($p < 0.01$) with the Cohen's d figures (-0.09 to 0.10) suggesting small effect sizes. There was also a significant shift in the use of display ($p < 0.05$) with the Cohen's d figures (0.03) suggesting small effect size. The shift in the use of operating system and user experience were not significant.

The analogies used were primarily from four product categories: tablet PC, netbook, iProduct, and MacBook. Each of these analogies was used with all three types of experience. When technology journalists were able to add visual experience to vicarious experience, there was a significant shift in the use of netbook ($p < 0.01$) with the Cohen's d figure (-0.05) suggesting a

small effect size. The changes in the use of iPhone, MacBook, and Tablet PC were not significant. When technology journalists were able to add direct experience with iPad, there was a significant shift in the use of iPhone and netbook ($p < 0.01$) with the Cohen's d figures (-0.17 to 0.20) suggesting small to moderate effect sizes. The changes in the use of MacBook and Tablet PC were not significant.

The similarity in the results for changes in the use of material attributes and analogies suggests two things: first, material attributes and analogies act as a cognitive anchor around which sense is made. Second, it provides empirical support for the idea that the attributes that are noticed and the analogies invoked change with different types of experience with the novel product (Kaplan & Tripsas, 2008; Weick et al., 2005). Relative to forum participants, there were fewer shifts of smaller effects, suggesting that journalists are less prone to changes in the type of material experience affecting which analogies are invoked and which attributes are noticed. This might suggest that the journalists' experience enabled them to construct more plausible sense of the novel product with less direct forms of experience; and, that these product meanings required less updating as the nature of the experiences became more direct. This corroborates my findings comparing changes in use of analogies and attributes over time.

Journalists' discourse often reflected on iPad as a categorically distinctive product; I coded under the label *Tablet*. When journalists were able to add visual experience to vicarious experience, there was a significant shift in the use of Tablet from 61% to 18% of paragraphs ($p < 0.01$) with the Cohen's d figure (-0.98) suggesting a very large effect size. This suggests that with the shift from vicarious to visual experience, journalists struggled to make sense of iPad of categorically distinctive. Yet, when they were able to add direct experience with iPad, there was minimal

change in the use of Tablet (from 18% to 19% of paragraphs; $p < 0.05$; Cohen's d : 0.04). This pattern between different types of material experience was consistent with that of forum participants.

Consistent with my analysis of the online forums, journalists used two main frames: functional and symbolic. My analysis suggests that the type of material experience had some bearing on the broad nature of the frames that are selected. For each change in type of material experience, there was a significant shift in the use of functional frames ($p < 0.01$) with Cohen's d figures of -0.14 and 0.19 suggesting moderate effect sizes. For the change from vicarious to visual experience, there was a significant shift in the use of symbolic frames ($p < 0.01$) with a Cohen's d figure of 0.17 suggesting a moderate effect size. For the change from visual to direct experience, there was no significant shift in the use of symbolic frames. My analysis reveals that journalists were more likely to use functional frames than symbolic frames; this might suggest that functional frames are more central than symbolic frames to ongoing public discourse about iPad. Moreover, journalists were relatively more likely to use functional than symbolic frames when compared to forum participants across all three type of material experience. This is consistent with my findings comparing changes in use of cultural frames over time.

Table 9: Comparison of Mean Instances of Code per Paragraph by Technology Journalists by Type of Material Experienceⁱ

	Vicarious (Before Jan 27, 2010)				Visual (Jan 27, 2010-Apr 2, 2010)				Direct (Apr 3, 2010-Mar 1, 2011)			
	Mean	SD	t-value	Cohen's d	Mean	SD	t-value	Cohen's d	Mean	SD		
<u>Product Analogy</u>												
iPhone	0.267	0.443	1.507	-0.048	0.246	0.431	11.426	***	-0.197	0.167	0.373	
MacBook	0.126	0.332	0.346	0.011	0.129	0.335	1.157		-0.020	0.123	0.328	
Netbook	0.010	0.101	8.701	***	0.046	0.209	9.289	***	-0.169	0.017	0.128	
Tablet PC	0.011	0.105	1.329		0.007	0.083	1.498		-0.026	0.005	0.070	
<u>Product Category</u>												
Tablet	0.607	0.489	82.051	***	-0.975	0.179	0.383	2.198	**	0.037	0.193	0.395
<u>Product Attribute</u>												
Display	0.060	0.238	1.087		-0.035	0.052	0.222	2.085	**	0.035	0.060	0.237
Media Consumption	0.365	0.482	2.719	***	0.085	0.406	0.491	5.509	***	-0.093	0.361	0.480
Operating System	0.083	0.276	2.609	***	-0.086	0.061	0.239	1.142		0.019	0.066	0.248
Portability	0.176	0.381	3.057	***	0.094	0.213	0.410	4.203	***	-0.071	0.185	0.389
Production	0.090	0.286	0.255		-0.008	0.087	0.282	6.659	***	0.109	0.121	0.326
User Experience	0.222	0.416	1.324		-0.042	0.205	0.404	0.244		-0.004	0.203	0.403
<u>Cultural Frame</u>												
Functional-Descriptive	0.674	0.469	6.116	***	0.198	0.763	0.425	8.477	***	-0.141	0.701	0.458
Symbolic-Evaluative	0.139	0.346	2.892	***	0.170	0.203	0.402	1.097		-0.052	0.182	0.386
Sample Size (Nr. Paragraphs)	1,250				5,177				11,097			

* p < 0.10; ** p < 0.05; *** p < 0.01.

ⁱ Analyses based on unpaired t-test of unequal variance.

Thematic Analyses to Assess Changes in Sense Made With Different Types of Material Experience

In the thematic analyses, I find that journalists, like forum participants, embellish these analogies, material attributes, frames, and categorical determinations differently with changes in the type of experience with iPad to construct quite different product meanings. To explain these changes, I organize this section by type of experience, highlighting the similarities and differences with the forum participants.

Vicarious Experience (Dec 28, 2009 – Jan 26, 2010)

The focus of journalists' discourse was on describing and evaluating whether or not Apple's future product would be categorically distinctive; 61% of all paragraphs wrestled with this in some way. Yet, because journalists relied relatively more heavily on functional frames than the forum participants, they tended to emphasize those aspects of Apple's future product that were verifiable. As a result, their use of language appeared more declarative and less provisional than the forum participants:

“We expect a tablet interface that strives to appeal to everyone, like the iPhone OS does with its 3.5-inch screen, SpringBoard user interface and fingertip-sized icons. The ergonomics of text entry will especially be challenging on a device that size. People briefed on the product say it will incorporate a virtual keyboard. But if the tablet is going to serve as an alternative to a notebook or netbook, an ordinary virtual QWERTY isn't going to cut it. We're predicting Apple will incorporate new multitouch gestures, and maybe even the accelerometer, to trigger functions of the traditional QWERTY keyboard. Imagine if pressing two fingers down anywhere triggered the Shift key, for example” (Wired 2010.01.24).

Also, journalists were more likely than forum participants to consider *how* iPad performed these media consumption and content production functions:

“The hurdles for a tablet like this aren't just technological. This is a device that's going to have to convert its usership to a whole new kind of physical experience. We're used to laptops and smartphones, and we take the things they're good and

bad at for granted. The tablet's software may be a wonderful mystery box with massive potential, but the tablet form factor, like any other, won't be for everyone” (Gizmodo 2010.01.25a).

Thus, they recognized a second dimension upon which a new product could be discussed, understood, and evaluated. A product could be novel not just for its technological capability but also for the experience it provided the user when performing that functionality. This is interesting because this dimension required a sense of the material experience of a product that was as yet unseen. This might suggest that their role in the media afforded them a wider range of tools in making sense of novel products; and, these additional tools enabled them to vicariously consider user experience, something that forum participants could not. It also provides hints as to an additional tool available to journalists: the ability to consider the future. To make sense of the user experience of a product that was yet was immaterial required the journalists to place themselves in an imaginary future position of using that product. Such a position was seldom considered by forum participants. This suggests that journalists’ role provided them with more experience making sense of novel products; as a result they were able to think beyond the present and into the future.

Visual Experience (Jan 27, 2010 – Mar 31, 2010²⁸)

Technology journalists were less likely to reject Apple’s interpretations than were forum participants that iPad is a new category of product located between a smartphone and a computer. They were also more likely to leave open the possibility that iPad could be categorically distinctive with future changes. This resulted in discourse that was less hostile and negative. For forum participants, their hopes that iPad would be categorically distinctive were

²⁸ At the end of March 2010, many of the technology journalists received iPads in advance of the April 3, 2010 retail availability date for the general public. As a result, these technology journalists began publishing articles about their direct experiences with iPad on April 1, 2010. Therefore, I end the visual experience for technology journalists on March 31, 2010.

perceived as unmet with the shift from vicarious to visual experience; this resulted in negative evaluations. For journalists, there were no such wild swings in evaluations; in part, because they were less likely to deviate from the possibility that iPad could be categorically distinctive. It also meant that the discourse maintained relatively more of a functional flavor than did the discourse of the forum participants.

Also, unlike forum participants who placed great emphasis on the size and overall appearance of iPad, journalists focused relatively more on iPad's functionality or user experience when they invoked the analogy of iPhone. For instance, they were more likely to frame iPad in terms of content production. Forum participants had largely dismissed this functionality due to the visual and experiential similarities with iPhone as well as the dearth of production apps currently available on iPad. In contrast, journalists emphasized the pending arrival of production apps created by third parties. In doing so, they retained as plausible the possibility that iPad might be a form of portable computer, something largely dismissed by forum participants. This provides further evidence that an additional tool available to journalists was the ability to consider future possibilities for iPad. This was largely lacking among forum participants, whose sensemaking emphasized the present.

However, there was a strong sense that those attributes shared by both iPad and iPhone suggested that the way that iPad users would perform these tasks would be similar to the ways they would perform them on an iPhone: "It has a large touchscreen keyboard and the interface is very similar to the iPhone which is something many will be happy with. It's also got some built-in location services that lets the Map app auto-locate, and the iTunes store is built-in for previewing and buying media" (TechTarget 2010.01.28b). By inferring that the same operating system and user

interface would result in a similar user experience to that of iPhone, journalists were able to distinguish iPad from other portable computers. They had used a similar analogy (iPhone) and similar attribute (user experience) to create a broadly similar sense of iPad (user experience is similar on iPhone and iPad) to forum participants; but, because that sense was subsequently applied to compare iPad to MacBook—a step largely not considered by forum participants—journalists were more likely to understand how iPad could be distinctive from both iPhone and MacBook.

But, in suggesting that the user experience of iPhone and iPad would be similar, they, like forum participants, were drawing from their own direct experiences with iPhone and visual experience with iPad. These experiences told them that iPad was similar to iPhone. These more personal experiences appeared to override Apple's articulation or demonstration of material interaction with iPad itself, which posited a revolutionary user experience. This is particularly interesting because during the vicarious period, journalists had been able to consider the possibility that the user experience could be different on iPad, something that was absent in forum participants' sensemaking. Yet, their visual experiences with iPad and direct experiences with the analogous iPhone appeared to override the possibility of distinctiveness that they had raised during the vicarious period. This might suggest that despite the wider range of prior understandings that journalists had to draw from compared to forum participants, and their ability to consider the future, they were still strongly reliant on immediate direct cues to make sense of iPad; and since these direct cues were visual, they suggested similarity to iPad.

Consistent with the findings from the online forums, these recognized journalists were less likely to emphasize iPad's categorically distinctive position than they were during the vicarious period

(61% of paragraphs in the vicarious period and only 18% of paragraphs in the visual period).

This reflects in part that they were currently unconvinced that iPad was categorically distinctive, instead considering it more similar to either iPhone or MacBook. It also reflects that with the tangibility that arose as a result of visual experience enabled journalists to make direct comparisons with specific analogies to construct product meanings; there was less of a need to speak in terms of generalities about broad categorical positioning that had been true when experience was purely vicarious.

Overall, journalists used the visual cues to complement and extend the sense made during the vicarious period. They were able to continue using analogies as hedges to help them distinguish iPad from iPhone, something that was largely missing from forum participants' discourse. As a result, the technological frames through which they made sense of iPad were richer and more nuanced than those of forum participants. The end result was that they were less disappointed than forum participants as their expectations had been less drastically dashed: iPad may not be a categorically distinctive product; but they were still open to the possibility that it might be.

Direct Experience (Apr 1, 2010 – Mar 1, 2011²⁹)

At this time, Apple's claims about iPad as a categorically distinctive product were largely consistent with those made at launch. These claims were reservedly accepted in the earlier period and verified when the journalists had direct experience with iPad. And with them, more positive evaluations.

²⁹ At the end of March 2010, many of the technology journalists received iPads in advance of the April 3, 2010 retail availability date for the general public. As a result, these technology journalists began publishing articles about their direct experiences with iPad on April 1, 2010. Therefore, I start the direct experience for technology journalists on April 1, 2010.

With direct experience, journalists perceived iPad as a unique product because of its user experience. To elaborate this change in sense of the user experience, journalists embellished the same analogies and attributes differently to make sense of iPad as categorically novel. For instance, in contrast to the visual experience period, when the attributes of size and user interface were used to suggest similarity with iPhone, direct experience suggested difference. Now iPad's larger size was understood with respect to how a user might hold it relative to iPhone—iPhone can be held in one hand whereas iPad has to be held in two. The two products require different motor skills to hold and operate, changing the user experience. Only becoming knowable with direct experience, journalists' sense altered:

“It's best to think of the device not as the world's next laptop but as the world's first couchtop. ... Much of what we do with computers these days--casually checking e-mail, grazing around the Web--we do sitting on a couch, often with a laptop, though sometimes with a phone. It's these sorts of interactions that the iPad is brilliant at--fast and light, with a bright screen full of richly saturated colors, something you can snuggle up with” (Forbes 2010.05.10).

With this enhanced understanding, direct experience had crystallized the sense that iPad provided a unique user experience and evaluations of iPad increased, even hinting at ways in which iPad could enrich users' lives, something that was absent prior to direct experience: “‘It's going to be our chance to change how we teach,’ Wiecking said. ‘I'm so excited to be a teacher these days’” (Edtech 2010.08.27). They perceived iPad as categorically novel in *how* it performed the same functions that iPhone performed. Absent experience, they could only make sense of the user experience as similar to iPhone. With direct experience, they could distinguish iPad and iPhone, and also understand how iPad enriched their lives in non-utilitarian ways. There was some sense that the addition of the dimension of *how* iPad performed its task was a necessary condition for this symbolic dimension to surface. Absent the understanding that iPad

provided a unique user experience and therefore was categorically distinctive, it is hard to imagine that the symbolic sense that iPad enriched users lives would have materialized. This is consistent with the findings of forum participants.

In part this shift to understanding iPad as categorically distinct arose because now they were able to compare user experience between the two products using the same type of experience. In the visual experience, there was a discrepancy in the type of usage: they had both visual and direct experience with iPhone but only visual experience with iPad; this suggested that iPad was too similar to iPhone. Following direct experience with iPad, they were able to make comparative sense based on a similar type of experience, enabling them to categorize iPad as distinctive from iPhone. This corroborates the findings of forum participants, suggesting that an actors' own direct experiences are particularly salient when the explanation for the product's distinctiveness is based on *how* it performs its functions.

With direct experience, journalists could now understand how users might be able to produce content and were therefore increasingly likely to frame iPad as an important device for production. This stands in contrast to forum participants, who only framed iPad as a device for media consumption. In part, this points to the importance of prior sense made on current acts of sensemaking. The possibility that iPad could be a device for production had been retained as a plausible interpretation by journalists that wasn't retained by forum participants.

As I explicated earlier, forum participants strongly rejected the possibility that iPad was a content-production device when Apple introduced iPad; in contrast, journalists provided a more muted response: iPad in its current form was not a content-production device, but it had potential to be. Over time, journalists were proven correct with the flood of content-production apps

hitting the market. This suggests that by being less prone to strong statements of product meaning, i.e., by holding product meanings lightly, journalists were open to the possibility of different product meanings in the future. This suggests that journalists might have more experience making sense of novel products. It also points to their being more flexible and open to change. And, this is partly due to the fact that journalists appeared to retain a larger number of plausible meanings for later use (in addition to having a larger range of possible meanings available at the outset) than did forum participants. As a result, journalists were able to perceive iPad as a categorically distinctive form of portable computer that allowed both the consumption and production of content. It was joined with a more positive evaluation, further suggesting the importance of meeting prior expectations as a necessary condition for favorable evaluations.

Overall, this is consistent with earlier findings that the materiality of the novel product influences sensemaking by providing a cognitive anchor. It also explicates how the nature of the material experience alters sense made. Specifically, I show that as the nature of the material experience with the product changes, journalists pay relatively more attention to different material attributes and invoke different analogies. Most importantly, following the shift from visual experience to direct experience, journalists emphasized the uniqueness of the user experience and iPad's categorical novelty.

These results also suggest that although forum participants exhibited greater volatility in their use of analogies and attributes, journalists were more likely to change the non-categorical meanings with changes in material experience. My findings suggest that they did this by holding meanings, after a particular experience, more lightly than did the forum participants; as a result, journalists were able to modify these product meanings as the type of material experience

changed. In contrast, forum participants had discarded the same meanings during earlier similar experiences; as a result, that particular meaning was no longer retained, and therefore not available for modification. As with the role of time, this suggests that part of the flexibility exhibited by the journalists might have been the result of retaining more meanings that are available for selection.

Chapter Summary

In this chapter, I have provided detailed analyses of sensemaking by technology journalists about iPad, focusing on the role of time and materiality, comparing my findings between forum participants and technology journalists. Within this discussion, I also described how cultural frames are implicated in sensemaking and how the claims put forward by Apple, are incorporated into journalists' sensemaking. Similar to forum participants, I explicate how journalists' product meanings changed with different types of material experience, stabilizing once they were able to materially interact with iPad. I also show how technology journalists' public role of informing the public about novel products seemed to provide them with tools unavailable to forum participants: these enabled journalists to consider an imagined future in current acts of sensemaking as well as to retain a larger supply of plausible product meanings that they could use for later acts of sensemaking. In the next chapter, I summarize my findings, and discuss the theoretical implications of my analyses and possibilities for future research.

Table 10: Technology Journalists: Comparative Sense Made by Type of Material Experience

Descriptive Summary	Illustrative Quotes
<u>Vicarious Experience (Dec 28, 2009–Jan 26, 2009)</u>	
Use speculative language to set functional expectations of a categorically novel product; this includes consideration of user experience	<p>“If it’s too big to fit in a pants pocket, how are you supposed to carry it around? And but if it does fit in a pants pocket, how is it bigger enough than an iPod Touch to justify existing? And so on” (ATD 2010.01.05)</p> <p>“If you already have an iPhone and a MacBook; why would you want this?” (ATD 2010.01.05)</p> <p>“An Apple tablet that is bigger than an iPhone and smaller than a laptop ‘is likely to be a terrific product, but unless it meets some need not currently met by a netbook or iPhone, it’s a limited opportunity” (USA 2010.01.05).</p> <p>“Multiple independent reports have described the tablet’s appearance as a 10- to 11-inch iPhone or iPod Touch. (AppleInsider’s sources describe the tablet as “a first-generation iPhone that’s met its match with a rolling pin.”) The tablet, many have reported, will serve as a slate-like substitute for magazines, newspapers and books, while also offering the general-purpose functions seen in the iPhone, such as gaming, viewing photos, web surfing and using apps” (Wired 2010.01.24).</p> <p>“I think it has a certain wow factor that is well within Apple’s grasp; they’ve already implemented the solution in myriad devices, but it will seem like a brand new experience on the tablet with a new touch interface” (GigaOM 2010.01.24a).</p> <p>“The tablet device clearly targets consumers. The mix of applications observed comprises mainly of media and entertainment consumption as opposed to enterprise, productivity and computing... With rumors of large newspaper and book publisher deals, combined with its reading-friendly form factor, we speculate that the new Apple tablet will focus heavily on daily media consumption” (ATD 2010.01.25a).</p>
<u>Visual Experience (Jan 27, 2010–Mar 31, 2010)</u>	
Use functional language to explicate ambivalent sense that iPad may or may not be categorically novel product	<p>“We see iPad as a new product category that is superior as a shared device in a group setting (such as a living room or meeting) or as an ultra-portable computer. Sure, there could be some cannibalization, but it doesn’t quite replicate the functionality or form factor of either device” (ATD 2010.01.28a).</p> <p>“The device lacks a keyboard, but offers a multi-touch user interface, like the UI on the iPhone. It includes an on-screen keyboard, iTunes music library, iBook, eReader software, plus the usual mix of personal digital assistant software to support email, calendar and contacts applications” (TechTarget 2010.01.28a).</p> <p>“It has a large touchscreen keyboard and the interface is very similar to the iPhone which is something many will be happy with. It’s also got some built-in location services that lets the Map app auto-locate, and the iTunes store is built-in for previewing and buying media” (TechTarget 2010.01.28b).</p> <p>“The device can run applications designed for the iPhone and operates much like the smaller device, relying largely on finger gestures, though it includes an on-screen keyboard” (WSJ 2010.01.28).</p> <p>“The iPad is clearly one of those universal technologies that will be as useful in the home as in the office. Much like the iPhone, people will want it for work simply because it will be useful for getting work completed. Like any Apple product, it’s easy to use. It’s lightweight. And it’s mobile. Plus, this baby is as sleek as it gets” (TechTarget 2010.01.29).</p> <p>“The iPad with iWork may not be enough to challenge the supremacy of Microsoft Office, but it could give enterprise business travelers second thoughts about lugging their laptops around” (IW 2010.02.01).</p> <p>“In contrast to the snack-sized apps that are typical for the iPhone, where use-time may be only a few minutes ... foresees more substantial apps emerging for the tablet ... designed so that you’ll interact with them for ... longer” (IW 2010.02.01)</p> <p>“The iPad is a great tool for mobile Web surfing (which is, let’s face it, pitiful on a smartphone’s small screen), a great way to show pictures, and a nice e-book reader. But it is not enterprise-ready!” (InfoWorld 2010.02.03).</p> <p>“What’s so great about tablets for health care? When connected to a Wi-Fi network, they’re perfect for looking up medical information or working patient charts while on the move. The iPad in particular would be perfect, having no keyboard to disinfect or lid hinges to break. In addition, the most expensive Wi-Fi iPad is priced at just US\$699, while many traditional Windows Tablet PCs used in health care start in the neighborhood of \$2,000” (Engadget 2010.02.03c).</p> <p>“I want an instant-on, reasonably-sized screen for Web surfing on the fly. The iPhone/iPod touch come close, but I wanted something that looks like a full page, and that’s iPad. I even want to write on such a thing, and not with my thumbs; I never thought Apple would let me. But with the Bluetooth keyboard option, I can consider selling my almost new netbook” (PCmag 2010.03.12a).</p> <p>“Actually, you have a really versatile thin client. Imagine what the iPad could mean for corporate health care environments where a doctor or nurse needs to access real apps for patient management while moving from room to room. Previous solutions either involved a desktop in every room or a laptop, which was difficult to use while standing up. But the iPad, complete with its Wi-Fi, on-screen virtual keyboard and ability to connect to back-end Windows apps, might flood the halls of every hospital” (TechTarget 2010.03.10).</p> <p>“They fill a gap. The rapid growth of mobile Internet and touch screens has created a new class of computing devices for consumers, says Phil McKinney, Hewlett-Packard’s CTO. Tablets enable mobile access to online content like newspapers, movies and games” (CIO 2010.03.25).</p> <p>“I love my Amazon Kindle and have fallen in love with flipping pages back and forth with my thumb. Even so, this is not a tablet innovation; even the ability to gesture page turns on a screen—as you’ll do with the iPad—started with the iPhone and can be found on touch-screen desktops and laptops” (PCmag 2010.03.28).</p>

Direct Experience (Apr 1, 2010–Mar 1, 2011)

Use
functional
and symbolic
language to
explicate
iPad is a
categorically
novel
product

“Of course, the iPad—the actual product that millions will buy in the coming months—won't replace all computers. ... But Steve Jobs' Next Big Thing is the first computer that requires no training whatsoever, one that is truly accessible and useful for everyone. Just like the iPhone changed the idea of what a phone should be without anyone truly realizing it, Apple's new computer will completely and permanently change our idea of what a computer is and how it should behave” (Gizmodo 2010.04.02a).

“That is what is important about the Apple's new mobile computer. It shows that computers have—must—be an invisible platform, one that shifts its appearance to give people the tools to complete the tasks they want to accomplish, whatever these are. To enjoy and create content. To play. To communicate. To work. By being invisible and letting the applications do the work in the most simple way possible, the power of the computer will, at last, be available for everyone. No previous knowledge required. From a 3-year-old baby to your 90-year-old grandma, people will be able to just do things” (Gizmodo 2010.04.02a).

“To put a point on the iPad's UI and the user experience: there is no question that Apple has created an engaging, simple, and surprisingly powerful platform for this device. For many of the applications -- especially some of the third party titles starting to trickle out -- the stuff people are coming up with is insanely clever, just plain cool, or both. For many consumers, it will be easy enough to accomplish much of what you would with a netbook or laptop on the iPad, and yet other experiences will extend far beyond what you would do on a typical computer. It's not a laptop replacement, and this OS can't do everything a laptop can do - - but maybe it doesn't have to” (Engadget 2010.04.03e).

“Sure, I can type really really fast on the iPhone keyboard, but the iPad keyboard was an unknown. In the past, when using virtual keyboards on tablet-sized computers, I've been disappointed. So with some trepidation, I tried typing on the iPad. So far, what was virtually impossible for me to do on other devices feels almost natural on this one” (GigaOM 2010.04.03).

“The iPad let Robert Pharr, CFO of North Texas Real Estate Information Systems, a provider of IT systems for real estate data, ditch the laptop he used to lug around. “ pretty much decided over a week or so that there wasn't anything I wanted to do remotely that I couldn't do with an iPad, Pharr says” (IW 2010.12.06)

“This isn't a computer the way you think of a computer. All of these UI additions to the iPhone vocabulary help you do more and go further than what is possible on an iPhone, and a lot of the applications you'll use on the iPad are far more expansive than what the iPhone offers, but it's not like any computer you've ever used. This is something totally different -- a hybrid of sorts -- and while the user interface will feel familiar to most, it's also simply not a PC in any way. You will get work done with it, play with it, consume content with it, but the underlying framework of the real operating system is almost completely invisible” (Engadget 2010.04.03e).

“The results also indicate that people may be seeing the iPad as a new type of device, which could be good for Apple. But, as the Journal's Walt Mossberg wrote in his review of the iPad earlier this year, consumers may eventually want more out of their iPads than media consumption — and if Apple provides that, the iPad could become a laptop killer after all” (ATD 2010.05.17).

“Here's what I think is going on. The iPad hits a sweet spot between a “device” and a piece of printed matter. If you see someone at dinner whipping out a phone, they're a douche. But the iPad requires a bit more preparation and since it looks like a book or a magazine, we process its intrusion differently. If you pull it out in mixed company, it's to show them something. It's not so you can check 50 email messages and send tweets while everyone else is toasting the bride and groom” (TechCrunch 2010.05.27).

“The laptop is at its end. You may have already purchased your last one. We've touched the future, and it feels a lot like the iPad. The gesture-based interface is instantly understandable and better than anything else we've tried—ever. It's addictive, and we find ourselves attempting to swipe and tap and stroke the displays on our desktops and are disappointed when they ignore our caresses. But the deep hotness here is the Internet everywhere—3G flowing through a rich, eyeball-friendly screen on a device lighter than, well, some issues of this very magazine. After just a few months, we already feel genuine affection. We loved it when we checked into our flight from the taxicab, navigating drop-downs that would have been too tricky on a phone. When we used it to sidestep the hotel's exorbitant Wi-Fi fees. When we carried it to our brother's hospital bedside, where the Netflix app helped him forget his pain. We love it every time we bring up a map at the trailhead, every time we find a new recipe on Epicurious, every time we watch a game on MLB at 35,000 feet” (Wired 2010.11.01).

“Walters nonetheless has high hopes for iPad enterprise applications. ‘If Apple continues in the direction they've been heading, the iPad could end up as a desktop replacement,’ he said. ‘The iPad is capable of doing anything a desktop can, and it's more portable than a laptop or netbook, making it easy to use on the plant floor. The problems lie with the developers. The interface is different, so developers need to rethink their applications’” (TechTarget 2010.12.03).

“Who's buying all these tablets? Today, mostly consumers. Apple and other vendors are pushing into enterprise accounts with these devices, but consumers remain the vast buying majority. But they're not just for consumer use. Many people are using tablets for business purposes as well, bringing them into the office and asking their IT staff to support them. The software vendors have made support easier by releasing apps that provide functions similar to a notebook” (ChannelNomics 2010.12.09).

Chapter VI: Discussion and Conclusion

This dissertation set out to explore how different audiences make sense of a novel product and novel product category. Drawing from prior work on sensemaking and the emergence of new products, I asked *How do audiences make sense of a novel product and a nascent product category?* Using the introduction to the market of iPad by Apple as my empirical setting, I examined the role of time and materiality to examine changes in audience sensemaking. I focused on the sense made by two key audiences: the public in the form of forum participants and technology journalists. I presented my analyses in two empirical chapters that employed primarily qualitative methods supplemented by quantitative content analyses. In Chapter IV, I presented my findings from the analyses of the forum participants; in Chapter V, I presented my findings from the technology journalists; I also considered how the public role of the audience affects their sensemaking, and I compare and contrast sensemaking between the two audiences more generally. In this chapter, I summarize my findings and then discuss the theoretical implications, offering a series of theoretical propositions. I conclude with a summary of the theoretical contributions and managerial implications of this dissertation, offering ideas for future research.

Summary of Findings

I summarize my findings in five sections. In the first two sections, I summarize the role of time and materiality respectively on sense made by the two audiences. In the third section, I summarize the role of cultural frames; and, in the fourth, I consider how the public role of the audience impacts sensemaking. Finally, I provide a high-level overview of how the two audiences incorporate the claims made by the producer of iPad, Apple.

Role of Time

I asked *How does audience sensemaking change over time?* I find that broad product meanings about iPad were common across audiences; these meanings stabilized prior to Apple's introduction of iPad in response to a series of rumors. To construct these meanings, both audiences relied on the same analogies, the same frames, and the same material attributes, i.e., the same building blocks for sensemaking. The commonality of these building blocks allowed for the broadly shared meanings; but they also provided sufficient flexibility for actors to construct a wide variety of more specific product meanings, that changed over time. This had implications for late-stage sensemaking in two ways: first, specific product meanings constructed in early-stage sensemaking provided additional building blocks for late-stage sensemaking; and second specific meanings that were rejected in early-stage sensemaking were no longer building blocks for late-stage sensemaking. Importantly, my analysis suggests that the more forceful the rejection of a particular meaning, the less likely it appeared to be reconsidered when new information arrived later. For instance, by forcefully rejecting the idea that iPad could be a device for content-production when Apple introduced it in January 2010, forum participants were highly unlikely to consider iPad as a content-production device during late-stage sensemaking in March 2011 despite a wide variety of information suggesting that it was. And, since these rejections appeared to occur for specific audiences, my findings suggest that specific product meanings will vary more widely across audiences over time.

More specifically, I find that during early-stage sensemaking, both audiences employed analogies to emphasize the metaphoric similarity or distinctiveness of iPad. But, in late-stage sensemaking, both audiences used these same products as analogies but treated them as similes to make their sense of iPad appear more vivid: "The only problem I still see with the iPad is iOS.

While I love it on my iPhone I would much more prefer to have something more powerful on a tablet” (After iPad 2 500). This provides additional explanation as to how analogies can be a potent and flexible tool for sensemaking about novel products, even hinting at a broader range of analogies than existing products that is possible when treating them as similes.

Role of Materiality

I asked *How does audience sensemaking change with different types of material experience?* I find that both audiences relied on the same material properties to craft product meanings. I also find that as the material experience with the product changes, both audiences pay relatively more attention to different material attributes and invoke different analogies.

Changes in material experience also affected how both audiences embellished the attributes and analogies to construct product meanings. For instance, with visual experience, the idea of portability was understood relative to iPad’s size suggesting similarity with iPhone; but, with direct experience, this shifted to emphasize weight, to suggest how different it felt compared to holding an iPhone. More significant are the changes in the ways analogies were used. For instance, during the vicarious and visual periods, both audiences used analogies to emphasize how similar or different iPad was from existing products. Yet, with direct experience, there was a shift to use analogies to discuss *how* the user experience was different from these other products: “Nothing like the iPhone ... Sick and stunning. And the damn thing flies. And not like the ‘brand new iPhone’ fast, like super duper fast ... Pardon the pun, but this is what the iPhone wants to be when it grows up” (After Retail Availability 13271). This was important because both audiences considered the basic functionality to be similar to iPhone; therefore until they perceived of iPad as offering a unique user experience, they were not able to make sense of iPad as categorically novel. This suggests that an actors’ own direct experiences are particularly salient when the

explanation for the product's distinctiveness is not *what* a product is or does but *how* it does it. Direct experience had enabled both audiences to make comparative sense of iPad based on a similar type of experience. This enabled them to categorize iPad as distinctive from iPhone (and MacBook). This further explicates how analogies can have potent effects on sensemaking. Not only is it difficult for audiences to understand a novel product outside what we already know or understand, but also it is difficult for audiences to comprehend those analogies across different types of material experience.

Changes in the type of material experience with iPad provided a new dimension around which iPad could be perceived as categorically novel. With direct experience, audiences focused not on *what* iPad was but *how* it did it. This is consistent with work in cognitive psychology which shows that categorization often relies on physical interaction or experience with the product (Rosch, 1978).

Changes in the material experience highlighted the importance of expectations on sensemaking. For instance, during the vicarious experience period both audiences expected that Apple's future product would be categorically distinctive. Yet, when Apple introduced iPad, both audiences' visual experience suggested that iPad was too similar to iPhone; their expectations had been dashed. Evaluations shifted from hopeful ambivalence to disappointment, particularly among forum participants. But, as visual experience made way for an embodied direct experience, evaluations shifted to excitement. With direct experience, both audiences were immediately able to perceive iPad as offering a unique user experience, i.e., it was different from iPhone and MacBook. Their original expectations had been realized and their evaluations adjusted in a vastly

more positive direction. Absent direct experience, audiences struggled to envisage the user experience as novel; they relied on the visual cues, which suggested similarity to iPhone.

Role of Cultural Frames

I asked *How does audience sensemaking incorporate the use of cultural frames?* I find that both audiences relied primarily on functional frames to make sense of iPad in both early- and late-stage sensemaking. Symbolic frames became relatively more prominent in late-stage sensemaking; they were often used to make the functional aspects of iPad appear more vivid. However, in strong contrast to early-stage sensemaking, during late-stage sensemaking both audiences used symbolic frames to explicate how iPad could enrich users lives in non-utilitarian ways.

Both audiences relied primarily on functional frames to make sense of iPad during all three types of material experience. As changes in the material experience brought changes in evaluation due to discrepancies between expectation and perception, symbolic frames took on greater importance. In general, these evaluations became more infused with symbolic language as the strength of the evaluation increased. First, with the disappointment of iPad being perceived as too similar to iPhone with the visual experience, forum participants tended to mock Apple by using the producer's own symbolic language to reject the claims that iPad was *magical* and *revolutionary*. Next, with the excitement of realizing that expectations of a unique product had been met with direct experience, both audiences would use the same language to concur with Apple's claims. Moreover, both audiences became more inclined to use symbolic frames to suggest how iPad could enrich their lives. Since this enrichment was perceived to occur because of *how* iPad enabled you to perform certain tasks, this sense was largely unavailable to both audiences absent direct experience.

Role of Type of Audience

I asked *How does the audience's public role affect sensemaking about a novel product?* First, I find that forum participants exhibited greater volatility in their use of analogies and attributes, but journalists were more likely to alter the way these were embellished to construct product meanings. My findings suggest that journalists did this by holding meanings more lightly than did the forum participants. Consequently, journalists were able to modify product meanings when they received additional information. By contrast, forum participants were quicker to judgment, as evidenced by their relatively greater use of symbolic or expressive language and their stronger negative and positive responses to changes in material experience. As a result, they discarded the same meanings held lightly by the journalists. Since that particular meaning was no longer retained, it was not available for modification in later acts of sensemaking. This suggests that part of the flexibility exhibited by the journalists might have been the result of retaining more meanings that are available for selection by being less quick to judgment.

Second, journalists were more able to take into account the future in their sensemaking. For instance, they were able to consider iPad's potential content-production capability as well as imagine the user experience when the product was as yet unseen. This might suggest that journalists' role provided them with more experience making sense of novel products. And, part of this experience provided them an additional sensemaking tool: to think beyond the present into the future.

Third, I find that the different roles afford different interests that result in audiences focusing on different things. For instance, journalists were more likely than forum participants to discuss iPad's categorical positioning or relatively more likely to use functional than symbolic frames. The first is consistent with the idea that forum participants are primarily trying to understand

iPad with respect to purchase intention or general usage, whereas journalists, as part of providing broader information to the public, also must emphasize iPad relative to other products, including its categorical position. And, the second suggests that journalists are more likely to emphasize those functional aspects that could be more easily verified. Overall, this suggests that the different public roles of audiences result in different sense made about a novel product.

Role of Producer

At the outset of this study, I wondered how important was the role of the producer's preferred meanings on audience sensemaking. My analyses suggest that it may be less important than the other factors discussed throughout this dissertation. This is surprising given the emphasis of prior research and the fact that celebrity-firms like Apple often find that their evaluations or perceptions are more readily accepted (Rindova, Pollock, & Hayward, 2006).

However, I summarize here the two primary ways that Apple's preferred meanings for iPad were incorporated into audience sensemaking: 1) audiences referenced Apple's claims during their own sensemaking; and 2) audiences evaluated the veracity of Apple's claims.

The first of these was used throughout audience sensemaking. My analysis suggests that audiences frequently reference Apple's preferred meanings for iPad in their discussions, but they did not always accept them. Instead, these meanings tended to provide a readily available starting point for discourse. As a result, Apple's preferred meanings were rarely accepted without consideration. And, audience sensemaking was more likely to concur with Apple's preferred meanings once audiences had direct material experience with iPad. Audiences were unable to accept Apple's claims of unique user experience without first experiencing it themselves. And, since vicariously or visually, both audiences struggled to make sense of iPad as providing a

unique user experience, it did not become plausible until they had direct experience with iPad. Thus, rather than accepting Apple's claims of categorical novelty, this suggests that audiences needed to make this determination independently.

Second, the trigger to evaluate the veracity of Apple's claims was often changes in the type of material experience with iPad because these changes often resulted in modifications to product meanings. These modified product meanings were understood relative to expectations. A significant aspect of these expectations was associated with Apple's claim that iPad was categorically distinctive. Thus, when audiences perceived iPad to be categorically novel, they evaluated Apple and its claims positively; and, when audiences perceived iPad to be categorically similar to existing products, they evaluated Apple and its claims negatively.

Discussion

So far, I have described how different audiences make sense of a novel product that emerged from my data. Specifically I have elaborated how this changes over time and with different types of material experience, and incorporates the use of cultural frames that emerged from my data.

These analyses suggest the following propositions:

Proposition 1. Over time different audiences are i) more likely to converge on their categorization of a novel product and ii) less likely to converge on their product meanings.

Proposition 2. Audience sensemaking of a novel product is more likely to stabilize following direct material experience.

Proposition 3. Audiences are relatively more likely to use symbolic frames than functional frames when making sense of a novel product following direct material experience.

Proposition 4. Audiences with more experience making sense of novel products are i) more likely to consider the future during current acts of sensemaking and ii) less likely to reject possible meanings, than audiences with less experience.

More broadly, my findings offer a general view as to how audiences make sense of novel products and the implications for producers. Joining a growing body of researchers, I conceptualize products and the product categories they inhabit as supple conceptual systems (Lounsbury & Glynn, 2001; Navis & Glynn, 2010, 2011; Rosa et al., 1999; Watkiss, Glynn, Hills, & Lounsbury, 2014; Wry et al., 2011; Wry, Lounsbury, & Jennings, 2014). As such, novel products and the nascent product categories in which they emerge are understood as a cultural-cognitive process unfolding through interrelated processes of sensemaking and sensegiving. To balance existing work, which has emphasized the processes of sensegiving by producers, in this study I have focused on the processes of audience sensemaking.

By analyzing audience sensemaking, I was able to see the variety of ways that analogies were used, particularly as a result of changes in the audiences' material experiences with iPad. As a result, I find that there are two primary equifinal paths by which audiences can perceive novel products to be categorically novel: the first emphasizes *what* are the physical attributes or functionality of the novel product and the second, *how* that functionality is achieved and experienced. This has important implications for the emergence of novel products and the categories they inhabit. I discuss each below.

The first path emphasizes *what* the novel product is or does. My analysis shows that from the outset audiences' primary attempts to make sense of a product's categorical novelty rely on this pathway. For example, in early January 2010, both audiences emphasized that Apple's future tablet will be categorically distinctive assuming that it can perform the same functions as can currently be performed on an iPhone and a MacBook. By providing the same functionality of two products in one, audiences suggested that Apple's future tablet would be categorically novel.

My analyses suggest that this path can be seen as the baseline for a product's meanings; categorization of iPad stabilized once audiences perceived that they had a grasp of its technological specifications and basic functionality. In many ways, my analyses suggest that meanings derived in this way were often seen not simply as a plausible interpretation, but as reflecting some underlying reality. More pragmatically, it also seems to address a primary audience question of why would a person want to buy this product, particularly when the product in question is a consumer product.

To construct meanings of *what* the novel product is or does, my analysis shows that audiences at first rely on information provided by others or on actors' visual or auditory understanding of the product. As such, these meanings are often associated with an indirect type of material experience with the product. Actors frequently experience a novel product vicariously before they materially interact with it (this is perhaps why producers often offer hands-on trials of their novel products). But, more generally, this path does not rely on audiences to have direct material experience with the product, it can be used as an inducement to potential customers or potential critics from the media. By suggesting that your novel product is categorically distinctive for *what* it is or does, the producer may entice audiences to come see for themselves. Thus, it can also be used prior to retail availability.

The challenge for producers, as my findings attest, is that audience sensemaking is grounded in analogy, making it difficult to understand novel products apart from what we already know or comprehend. It is why producers needing to make their novel products comprehensible often ground their explanations in existing products. But, in doing so, the novel product is less likely to appear as categorically distinctive. For instance, when Apple introduced iPad, Apple exploited

the similarities in physical and functional characteristics with iPhone to make iPad more comprehensible. Yet, this diluted Apple's overall message that iPad was categorically distinctive from iPhone (while simultaneously strengthening the idea that it was categorically distinctive from MacBook). And, journalists were themselves likely to make sense of the physical and functional similarities as suggesting iPad and iPhone were categorically similar. It was not until journalists had direct material experience that they understood that iPad provided the same functionality as both iPhone and MacBook; and it was this joint functionality that enabled them to perceive iPad distinctive in terms of *what* is or does. More generally, I find that product meanings stabilized with direct experience. This suggests that as the range of material experiences increased, audiences were able to triangulate product meanings; as result, product meanings stabilized. This suggests that although direct material experience may not be necessary for audiences to make sense of a novel product for *what* it is or does, it increases the likelihood that product meanings will afterwards.

The second and more novel path emphasizes *how* the product performs its functions. The potential advantage of such an approach is that the product does not have to be technologically or functionally distinctive. It simply requires the sensemaker to perceive the way in which the task is performed is distinctive. My empirical analysis suggests that to understand a novel product in terms of *how* it performs its functions is often a difficult task to do vicariously. Recall how Apple made the case that iPad was categorically distinctive because it performed the same tasks as iPhone in a "magical and revolutionary" way. Yet, when audience experience with iPad was vicarious, they struggled to comprehend that the way iPad performed its tasks would be sufficiently different from iPhone; as a result, they perceived iPhone and iPad as categorically similar. Vicariously, it is likely much easier for audiences to comprehend the similarity in *what*

the product is or does than it is to comprehend the dissimilarity in *how* it does it. This suggests that understanding a novel product in terms of *how* it performs its functions is likely more easily understood via direct experience. This suggests that product meanings derived via direct experience is an embodied process (Whiteman & Cooper, 2011) that is “not necessarily an information-processing activity but draws on an intuitive and informed feeling” (Cunliffe & Coupland, 2012: 77). Recall how forum participants almost instantly perceived iPad as categorically distinctive from iPhone after they were able to play with iPad; yet, they also struggled to articulate exactly how the experience was different. Therefore, audiences are more likely to comprehend a product as categorically novel based on how it is experienced when audiences are able to have direct material experience with the novel product.

Overall, this suggests that a producer wishing to make claims that its novel product is categorically distinctive based on *how* it performs its functions is likely best served waiting until the retail availability of the product. At which time, audiences will be able to materially interact with the product. The problem with waiting until audiences are able to materially interact with the product to make such claims is that the meanings the producer wishes to advance may no longer be deemed plausible by its audiences. Recall how forum participants, during the visual experience stage, had discarded the meaning that iPad was a device for content-production because the user interface suggested that it was ill suited for such tasks. As a result, this potential meaning was not retained for later use; forum participants were not swayed by Apple’s claims during the direct experience period that iPad was also a device for content production. It might also suggest that if such product meanings are important, the producer may wish to consider reducing the time lag between introducing the product and making it available for purchase. In the case of iPad, there was discordance between Apple’s meanings and both audiences because

those audiences were unable to vicariously make sense of iPad as distinctive in terms of *how* it performed its functions. Had those same audiences been able to materially interact with iPad at the time of Apple's introduction of iPad, it is possible that this discordance might have been reduced.

In summary, this general view suggests that time and materiality depend on and reinforce each other in the creation of nascent product categories. Drawing on this line of reasoning, I propose that:

Proposition 5. Audiences are more likely to perceive a novel product as categorically distinctive as the type of material experience moves from vicarious to direct.

Proposition 6. Direct material experience is relatively more important for audiences to perceive a novel product as categorically distinctive when the distinctiveness is based on how the product performs its functions rather than what its functions are.

Proposition 7. If audiences are to perceive a novel product as categorically distinctive for what it is or does, it is more likely to occur earlier in time than if audiences are to perceive a novel product as categorically distinctive for how it does it.

Proposition 8. Minimizing the time lag between product launch and retail availability is more important for a producer of a novel product that hopes its audiences will perceive its product as categorically distinctive for how it does it rather than what it is or does.

My analysis also hints at a symbolic dimension around which novel products can be perceived as categorically distinctive. When explaining the unique user experience, both audiences began to explicate how iPad enriched their lives in non-utilitarian ways. Their discourse focused not on *what* iPad is or does or *how* it does it, but on the effect of who they were and how they felt. But, audiences did not incorporate this symbolic dimension around which iPad was understood as categorically distinctive until after they considered iPad as categorically distinctive in functional

terms. There was some sense that the addition of the dimension of *how* iPad performed its task was a necessary condition for this symbolic dimension to surface. Absent the understanding that iPad provided a unique user experience and therefore was categorically distinctive, it is hard to imagine that the symbolic sense that iPad enriched users lives would have materialized. Drawing on this line of reasoning, I propose that:

Proposition 9. Audiences are unlikely to perceive a novel product as categorically distinctive in symbolic terms until they have perceived it as categorically distinctive in functional terms, i.e., what it is or does or how it does it.

Since my analyses suggest that the producer's claims are primarily used as building blocks for audience sensemaking rather than as ready-made interpretations, the relationship between a producer's claims and audiences' meanings is not straightforward. My analyses suggest that the relationship is better understood via audience expectations. I find that audiences hope for a categorically distinctive product, but struggle to understand iPad outside of existing ones. So, despite their hopes, there is likely a tendency for audiences to discount novelty at the outset in order for the product to appear more comprehensible. When audience expectations are not met, there is likely to be a shift in evaluations. And, when the gap between expectations and perceived reality is greater, there is a stronger evaluative response. In the case of a novel product, this likely leads to a discrepancy between the claims of the producer and sense made by its audiences; and this discrepancy is likely to lead towards more negative evaluations, particularly at the outset. According to my analysis, audiences with more experience making sense of novel products are less likely to discount the possibility of novelty than less experienced audiences for two reasons: first, they are better able to consider an imagined future in current acts of sensemaking and are therefore less beholden to the past. Second, they are also less likely to consider novel meanings as implausible in the early-stages of sensemaking, thereby retaining

such meanings for future acts of sensemaking. Therefore, my analysis suggests, perhaps counter intuitively, that because audiences tend to engage in their own sensemaking process rather than accept the claims of a producer, audiences with more experience making sense of novel products are more likely to comprehend the product's categorical novelty. Drawing on this line of reasoning, I propose that:

Proposition 10. Audiences with more experience making sense of novel products are more likely to concur with a producer that its product is categorically distinctive than audiences with less experience.

Contributions

This dissertation makes several contributions to existing cognitive understandings of product innovations (Benner & Tripsas, 2012; Kaplan & Tripsas, 2008; Tripsas, 2009) and new product emergence (Hargadon & Douglas, 2001; Navis & Glynn, 2010; Rosa et al., 1999) by providing a detailed analyses of audience sensemaking. A primary contribution is the identification of two paths for how a novel product can be perceived as categorically novel and superior. The first builds on the well-known strategy for explicating the novel products physical and functional dissimilarity with existing products. The second relies on a new dimension of meaning, *how* a product performs its functions, emphasizing direct material interaction with the novel product for the creation of product meanings. This pathway is particularly relevant to many consumer products. With material interaction, users focused on the tactile experience of touching, holding, or manipulating the product when making sense of that product. The result: audiences noticed different attributes, invoked different analogies, and crafted different meanings. These meanings were largely imperceptible when those same actors could only experience iPad vicariously. Thus, this second pathway provides new explanations for how novel products can be perceived as

categorically novel and superior. It also provides an additional choice for producers of novel products when attempting to influence the sense made by their audiences.

A second contribution is to elaborate the multiple dimensions upon which meanings about a novel product can be derived. I focused on two, *what* a novel product is and does, and *how* the novel product performs its functions. However, by opening-up the possibility for meanings to be constructed along multiple dimensions, I also suggested a different way for novel products to be made sensible. Recall how my analyses hinted at a symbolic dimension around which novel products can be perceived as categorically distinctive. When explaining the unique user experience, both audiences began to explicate how iPad enriched their lives in non-utilitarian ways. By opening-up the possibility that there are multiple dimensions of meaning, this study contributes by providing fertile ground for future research.

A third contribution is to elaborate how the type of material experience affects the meanings that are crafted. When elaborating the primary contribution, I articulated how the type of material experience altered the aspects of the novel product that were noticed, the analogies that were invoked, and the meanings that were crafted. Yet, my findings also suggest that direct experience had an oversized role in sensemaking about novel products, especially for the evaluation of a consumer product such as iPad. Following the launch of iPad in January 2010, audiences did not internalize the meanings proffered by Apple. Instead, audiences relied on their own material experiences with other types of product they perceived as similar to make sense of the user experience of iPad. This suggests that sensemakers rely more heavily on direct material interaction with an analogy than either the vicarious experience of others such as the producer or their own visual experience with the focal product. It also begins to explain why audiences were

disinclined to internalize Apple's own meanings for iPad: they were inconsistent with their own direct experiences with the most salient analogy, iPhone. In summary, my study makes it clear that any research into the creation and evolution of product meanings must pay careful attention to the type of material experience the audiences will have with the product.

A fourth contribution of my study is to provide a more nuanced understanding of sensemaking about a novel product. My study shows that the various audiences use the same building blocks for sensemaking as one another; it also shows that each audience uses the same building blocks over time. This is consistent with existing research into the cognitive underpinnings of novel product emergence (Benner & Tripsas, 2012; Kennedy, 2005; Navis & Glynn, 2010; Rosa et al., 1999) and sensemaking more generally (Weick et al., 2005; Weick, 1995). My analyses show that as sensemakers engage in different types of material experience with the novel product, they utilize these building blocks in different ways to craft different meanings. For instance, my analyses show that audiences use analogies in a variety of ways that change over time and with different experiences with the novel product. Vicariously, both audiences used existing products as analogies to suggest that iPad was synonymous with the analogy, e.g., Apple's future product is a netbook. They also used hedges to suggest that the iPad was similar and different to the analogy, e.g., Apple's future product is bigger and more functional than an iPhone. With direct material experience, both audiences used analogies differently again to emphasize not what was different, but how the user experience was different to existing products. And, finally, by the end of the study, I show that the same analogies were being used a similes to make their sense of iPad appear more vivid, e.g., I love my iPad as much as I love my iPhone. My analyses also show that sensemaking did not begin anew each time audiences were in receipt of new information. Instead, audiences updated existing meanings by sifting through the interpretations

and fragments of interpretations crafted earlier (Weick et al., 2005; Weick, 1979) as long as those interpretations had not been discarded as implausible. Overall, this provides greater explanation as to how earlier acts of sensemaking about a novel product serve to both constrain and winnow the meanings that are plausible in current acts of sensemaking.

Finally, my study begins to show how the different public roles of an audience may be important for sensemaking about novel products. For instance, technology journalists were more likely to consider an imagined future; this enabled them to consider the dimension of user experience as a distinguishing factor earlier. They were also less likely to discard potential product meanings. This enabled them to consider the possibility of that same meaning at a later point in time; something that the less experienced forum participants did not. This suggests that part of the flexibility exhibited by the journalists might have been the result of retaining more meanings that are then available for selection later. This is important because by retaining the possibility of iPad as a content-production device, journalists, unlike forum participants, retained the additional dimension of *what* iPad is or does as a plausible explanation for iPad's categorical distinctiveness.

Although the primary focus of this study has been on evolution of sense made about a single novel product, it also has implications for the broader literature on product category emergence (Benner & Tripsas, 2012; Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999; Wry et al., 2014). This study extends prior findings by incorporating the importance of material experience. For instance, existing work has emphasized materiality in the form of physical and functional attributes as important factors when emphasizing within category similarity and between category distinctiveness. Yet, it has largely ignored the nature of the material experience when

constructing these meanings. Second, my analyses provide hints as to the emergence of iPad as the prototypical, or most representative member, of the category. In part, my analysis corroborates prior research by showing that for other products to be perceived as members of the tablet category, they must have certain physical and functional attributes. This is consistent with work in cognitive psychology (Mervis & Rosch, 1981; Rosch, 1978). Yet, given that audiences tended to perceive iPad as the prototypical, or most representative member of the nascent tablet category, my findings also suggest that a perception of categorical membership will involve more than simply the presence or absence of specific technical attributes. It will also likely incorporate a consideration of whether or not the other product is visually and aesthetically similar to iPad, the user experience, as well as whether or not audiences use similar motor properties when materially interacting with the product.

My study also deepens our understanding of sensemaking. I reveal the essential yet often overlooked role of materiality in sensemaking, thus shifting the cognitive emphasis that dominates research. In recent years, there has been a re-focusing as to the importance of experience for sensemaking (Cunliffe & Coupland, 2012; Humphreys, Ucbasaran, & Lockett, 2012; Whiteman & Cooper, 2011). Joining this work, my study suggests that the materiality of the object being made sensible and the nature of the sensemakers' material interactions with that object have a direct effect on what gets noticed and the resultant interpretations. For instance, I show that when engagement with the subject of sensemaking is primarily vicarious, sensemaking tends to emphasize the overall shape or holistic representations as well as those aspects of that are visually accessible. And, when engagement is materially interactive, sensemaking is more likely to emphasize the motor movements used when operating with the object. Thus, not only are the building blocks of sensemaking (i.e., what gets noticed) different, the interpretations

derived from those building blocks are also likely to be different. This suggests that scholars of sensemaking should pay greater attention to how actors engage with the objects of their sensemaking in order to gain greater insights into the content of sense made.

This study provides a second contribution to sensemaking research: empirically I use online forums as a novel form of data that allows me to understand audience sensemaking as it unfolds. Forums are web message boards that allow public discourse by enabling participants to engage in discussions at their convenience (Byrne, 2007; Im & Chee, 2006), and that simultaneously increases their degree of comfort and reduces their resistance to contribute freely. This enabled me to highlight the variety of nuanced ways that the same building blocks are made sensible as time passes and audiences engage in different types of experience with the focal object. I find that when audiences engage in a new type of experience with the object, sensemaking occurs providing the opportunity for updated, new meanings. Yet, the consistency in meaning is preserved because prior sense made provides the starting point for any updated sense. This provides empirical support to the notion that sensemaking is both ongoing (Weick, 1995) and tied to the past. This also provides support to the idea that meanings are at best only relatively stable.

Methodologically, by using novel data in the form of online forums, I contribute to management scholarship by providing an early examination of this increasingly important avenue for public discourse. The volume of the data necessitated a quantitative approach in the form of the automated content analysis. But, the qualitative creation of the coding dictionary and subsequent thematic analyses provided unique insights into the data. This suggests that for scholars interested in sensemaking and meaning more generally, my study shows that it is essential to

consider the richness and nuance that qualitative analyses can provide with the practicalities of the volume of data that researchers are likely to encounter.

Practical Implications

I believe that my study has practical implications for producers of new products. I highlight three of the most salient. First, I illustrate that new products are made sensible along a number of dimensions. And, these dimensions are not simply limited to the functional purpose of the new product. For iPad, the categorical novelty arose not for *what* it did, after all Apple's own other products performed similar functions. Instead, the categorical novelty was for *how* it did it: iPad created a magical and revolutionary user experience. And, it was this novel user experience that resulted in the perception of a new product category. Another dimension that was pursued by Apple was to emphasize symbolic meanings. Using this strategy, Apple crafted meanings for iPad that suggested it was novel because it was akin to categorically defining products such as iPod and iPhone irrespective of any similarity in functionality. The lesson here for managers is to consider how one might go beyond the functionality of products to embrace non-functional aspects that can influence audience understanding and therefore consumer buying behaviors. In my empirical setting, Apple partially used a symbolic strategy to encourage its audiences to perceive iPad as a new category of product between iPhone and MacBook. The effect was to create demand for its new product without severely cannibalizing sales from these neighboring products. Although my findings suggest that these experiential or symbolic aspects will unlikely precede functional meanings or even trump them, developing symbolic explanations for categorical distinctiveness may provide organizations with additional tools to increase demand for its products.

Second, my study suggests that the sequencing of material events is important as product meanings evolve. Therefore, producers might want to think carefully about when to make their new products available for purchase. For instance, Apple's decision to introduce iPad nine weeks prior to its retail availability facilitated forum participants' perceptions of iPad as visually and functionally similar to iPhone and dissimilar to MacBook. This perception of categorical distance persisted even after sensemaking changed with material interaction to suggest that iPad had greater functional similarities with MacBook than previously perceived. Thus, if Apple had wanted its forum participants to consider iPad as similar to both iPhone and MacBook, it might have been better advised to make iPad available for purchase at the same time that it introduced the product, thereby mitigating the possibility that iPad and MacBook would be perceived as categorically distant. However, the nine-week gap facilitated spirited discourse among various audiences that kept iPad in the public domain. And, although audiences were somewhat unconvinced of iPad's categorical novelty, it did not appear to have an impact on early sales: on its first day of sales, more than 300,000 iPads were sold with many retail stores selling out. Thus, the greater public discourse may have offset the less positive product evaluations.

Finally, producers may wish to consider introducing their preferred meanings for their products long before they are ready to launch those products into the marketplace. It was clear that the meanings that were in play before Apple launched iPad were also the primary source of meaning afterwards. Thus, if earlier meanings are a starting point for the creation of later meanings, it may be important for producers to make their own preferred product meanings public before its audiences have a chance to create their own. Of course, this might lead to competitive disadvantage: by previewing their preferred meanings, producers are providing competitors with advanced warning of not only these meanings but also the underlying technological aspects of

the new product. The important lesson from this study is that producers recognize that product meanings are not determined by the underlying technology. Meanings are subject to both variation and creation that must be carefully managed. So, if producers have preferences for the types of meanings attached to their product, it is important that they actively manage the process to increase the chances that their preferred meanings are the ones also crafted by their audiences.

Limitations and Future Research

My study has allowed me to build and elaborate theory about the evolution of meanings of a product innovation, i.e., the case enabled analytic generalizability (Yin, 2014). It has also created the opportunity for future research. First, despite the possibility that meanings can be understood on a symbolic level, my empirical analysis suggests that this is difficult to achieve and may often follow the stabilization of functional meanings. At first, actors are more likely to be trying to figure out *what* it is and does and *how* it does it. Issues of symbolic meaning are likely to come later. As an abstract form of meaning making, symbolic meanings provide an almost limitless well of potential meanings. Thus, in the future, researchers may wish to explore how, if at all, and when symbolic meanings are incorporated into audience sensemaking.

Also, it might be useful to consider how producers can influence this process. For instance, we know from existing research (Christiansen & Lounsbury, 2013; Lounsbury, 2007) that producers can influence the symbolic meanings that audiences construct about novel product. Yet, my study suggests that many of the attempts by Apple to infuse symbolic meanings into the public discourse were not picked-up by the two audiences. This is not say that audiences were not incorporating these symbolic meanings into their understandings of iPad; it is simply that they were not part of public discourse and therefore not part of my analyses. This therefore suggests that we can benefit from future research that explicitly considers how producer's symbolic

meanings are incorporated into audience understandings of novel products. For instance, researchers may wish to interview members of different audiences to ask them directly about how their sense of the symbolic meanings influenced their understandings of specific novel products. Or, perhaps researchers could conduct experiments whereby groups are subjected to different symbolic meanings and then asked to make sense of a focal product.

Second, by focusing on one of the most successful products of one of the most storied producers, it is possible that public discourse is of heightened importance for audiences. By contrast, sensemaking of other products may involve less public discussion. It is also unclear as to the effect of the producer on this discourse. In the case of iPad, Apple's popularity did not seem to dissuade forum participants from questioning their meanings for iPad. Yet, it is also possible that with less popular products, audiences may be more inclined to internalize the meanings provided to them by significant others such as producers, expert critics, or their friends. And, in the case of entrepreneurial ventures, when the producer is unknown, it would seem more likely that audiences are more disinclined to readily accept product meanings given to them. One can also imagine that sensemaking would be different with different types of product. For consumer products such as iPad, there may already be an abundant supply of other similar products that can act as analogies. But, in other fields such as biotechnology or financial services, the nature of the product innovations may be both more arcane and offer few similar others; this may suggest that analogies are less useful or simply that the analogies used have to be more symbolic than functional. It may also suggest that audiences rely more on a few key savants than engage in their own sensemaking process. Thus, in future work, researchers may wish to more explicitly compare audience sensemaking across a wider range of products and producers.

Third, by studying iPad, I was able to focus on the change in meanings of a single product that broadly defined the emerging tablet product category. However, as existing studies attest (Kennedy, 2008; Navis & Glynn, 2010; Rosa et al., 1999), a product category often emerges as a confluence of multiple products and meanings. In such cases, it is therefore less clear if and how particular product meanings converge to form the foundations of the nascent product category. In future work, researchers may wish to explicitly compare the meanings of alternative similar products as a product category emerges and the role of the type of material experience on that process. Also, it is possible that iPad is a particular kind of consumer product that lends itself to being better understood by material interaction. After all, its categorical distinctiveness arose in part because of its unique user experience. Therefore future work into a wider range of products might facilitate better understanding of the limits of materiality on the emergence of product meanings.

Fourth, by focusing on public discussions in online forums, I was able to analyze sensemaking as it unfolded in real time. However, it is possible that forum participants engaged in sensemaking about new products in qualitatively different ways from other actors. For instance, the partial anonymity that the forums offer might alter the social dynamics of public discourse that could not be replicated in other social settings. One could imagine that in face-to-face focus groups, the immediacy of the comments from others and the visual cues of power and status might reduce people's willingness to offer their own understanding of the product; instead individual contributors may remain silent or offer the meaning they perceive to correspond with the collective understanding. And, although this might tell us less about how different individuals make sense of the novel product, it might tell us more at the level of the focus group. Thus,

researchers might want to consider how audiences in a variety of public settings engage in discourse to make sense of new products.

Finally, my analysis focused on the change in meanings of a new product. Yet, there's nascent work that suggests that meanings of existing products can change to create new product categories (Raffaelli, 2013). Therefore, in future work, it might be interesting for researchers to consider how time and the nature of the material experience can interact to alter sense made about longstanding products and whether these mechanisms work in different ways to the change of perceptions of new products.

Conclusion

In this study, I have analyzed how audiences engaged in public discourse to make sense of iPad as it emerged as the *de facto* standard of the nascent tablet product category. In doing so, I have expanded our understanding of how meanings about novel products are constructed, focusing on the interdependent mechanisms of time and the nature of the material experience with the product to provide a more nuanced understanding of audience sensemaking. Although I believe that this dissertation makes several important contributions to the management literature, I am most excited about the broader research program that it has inspired me to explore.

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Appendices

Appendix A: Forum Participants: Illustrative Forum Posts

<http://forums.everythingicafe.com/threads/101-reasons-ipad-is-fail-go.51298/>

The screenshot shows a forum thread on the website 'everythingicafe.com'. The thread title is '101 reasons iPad is fail, Go!'. The thread was started by 'The Apple' on Jan 27, 2010. The current page is page 6 of 7. The thread contains two posts:

Post 1: User: MrMike6byg (GOLD). Post date: Nov 16, 2008. Post content: "If it had the underpinnings of a MacBook Air, then you'd really have something that would be compelling for me. I'm guessing that's a few iterations in the future and I'll have to wait." Post date: Jan 28, 2010. Likes: 102. Thread ID: #101.

Post 2: User: Youngbinks (GOLD). Post date: Jun 4, 2007. Post content: "Owning an iPhone and a MacBook Air really makes the iPad a bit useless for me. Especially with the lack of a real web browser."

NEWS FORUMS GALLERY ACTIVE TOPICS

SEARCH FORUMS FEATURED THREADS ACTIVE TOPICS Q Search...

News Forums Apple iPad Discussions iPad General Discussions

Did the iPad disappoint you?

Discussion in 'iPad General Discussions' started by Apple, Jan 30, 2010.

Page 2 of 4 < Prev 1 2 3 4 Next > Previous Thread Next Thread

Jan 31, 2010 #16

DG~X
iPad Junkie

Joined: Jan 23, 2010
Messages: 796
Thanks Received: 19
Trophy Points: 18
Location: Uganda
Ratings: +19 / 0

RORACLE SAID: ↑

HTML 5 will take care of the video issue regarding flash in the future, and youtube will be using h.264 (I think is what it is) so it should be fine (although Google is a company built on open source, their neglect for using ogg vorbis may hinder them, and pave a new path for a video site to compete with them using open and unrestrictive standards).

As for flash everywhere else? Totally missed. Don't know why they didn't do this. Yet also, lack of a camera is a big downer for me. I would like to have a file system to keep my stuff organized (which means a SD card reader and at least one USB port would be a very nice addition).

True, iChat would be an epic quality for the [ipad](#). But, i saw the way they store pictures on it and thats pretty cool.

5 steps to speed up Mac.

Here are 5 easy steps to make your Mac running faster. Learn how.

Log in or Sign up

User Name...

Password...

LOGIN REGISTER ?

Stay logged in

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<http://forums.everythingicafe.com/threads/the-ipad-is-heavy.53414/>

everythingiCafe FORUMS HOW TO REVIEWS BEST APPS LOG IN SIGN UP Search...


Search Forums Recent Posts

Forums iPad Forums iPad

The iPad is heavy

Discussion in 'iPad' started by doom, Apr 3, 2010.

Page 1 of 2 1 2 Next >



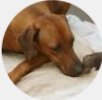
dcom
GOLD

Aug 7, 2007

3

dcom, Apr 3, 2010 #1

They said it weighed 1-1/2 lbs which doesn't sound so bad at first, but I don't know how long I'd be able to hold it in one hand and read or watch movies. After 10 minutes, my hands are aching. A case with a stand or some way to support it will be a requirement for me.



dturner
GOLD

Dec 15, 2007

I just got back for the Apple Store and haven't really played with it yet. I did get the Apple case that has the stand so we will see. I really want to get a few books on this thing and see how it goes.

Log in or Sign up



iPad FORUMS .net

The Ultimate Apple iPad Site

NEWS FORUMS GALLERY ACTIVE TOPICS

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News Forums Apple iPad Discussions iPad General Discussions

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When you buy 5 QTS Valvoline Motor Oil
*after mail-in rebate
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Day 1 first impressions

Discussion in 'iPad General Discussions' started by briloop, Apr 10, 2010. [Previous Thread](#) [Next Thread](#)

Apr 10, 2010 #1



briloop [OP]
IPF Novice

Joined: Mar 22, 2010
Messages: 14
Thanks Received: 0
Trophy Points: 0
Location: Earth
Ratings: +0 / 0

It's great for watching Netflix.

More convenient than a laptop or a desktop. You don't have to sit at a table or a desk. Just curl up on a couch or kick back in a recliner.

I'll probably [download](#) some books.

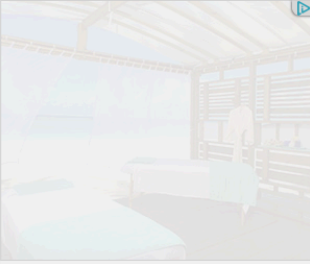
I'm a little disappointed that I couldn't watch "Weather in Motion" on weather.com because it requires flash player.

Definitely worth the money.

I own a Macbook and an iPhone, and now an iPad. I don't consider myself a fanboy or a shill. Apple seems to be making some of the best products right now.

Just my two cents....

SPONSORED LINKS



IPad, Truly Magical

Discussion in 'iPad' started by **sameon**, © Mar 5, 2011.

Mar 5, 2011

sameon
macrumors newbie

Aug 7, 2008
London

I always taught of the ipad as an oversize ipod touch before I got the rev 1 due to the price drop. I raise my hands up what a product, my 8 year loves it, the Mrs loves it and myself i am thinking of buying the rev 2. #1

Introducing the new Square Reader
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[RESERVE NOW](#) square.com/apple-pay

Mar 5, 2011

BergerFan
macrumors 68020



I've had my iPad since late April 2010. So many of my friends criticised it as "a big iPod touch", etc, as well. That is, until they held and used it for the first time. It's only when you have real hands-on time with it, do you really *'get it'*, if you didn't beforehand. #2

Appendix B: Forum Participants: Dates Sampled within Online Forums

For the public forums, the specific days sampled are detailed below:

- All days where discussions took place between Monday, December 28, 2009 and Tuesday, January 26, 2010
- Wednesday, January 27, 2010 (launch announcement of iPad)
- Thursday, January 28, 2010
- Monday, February 1, 2010
- Friday, February 5, 2010
- Wednesday, February 10, 2010
- Tuesday, February 23, 2010
- Thursday, February 25, 2010
- Saturday, March 6, 2010
- Sunday, March 14, 2010
- Sunday, March 21, 2010
- Tuesday, March 30, 2010
- Thursday, April 1, 2010
- Friday, April 2, 2010
- Saturday, April 3, 2010 (retail availability of iPad)
- Saturday, April 17, 2010
- Wednesday, April 28, 2010
- Monday, May 10, 2010
- Sunday, May 23, 2010
- Tuesday, June 15, 2010
- Wednesday, June 30, 2010
- Thursday, July 15, 2010
- Saturday, July 24, 2010
- Thursday, August 12, 2010
- Friday, August 27, 2010
- Wednesday, September 1, 2010
- Thursday, September 2, 2010
- Monday, September 13, 2010
- Wednesday, September 29, 2010
- Tuesday, September 26, 2010
- Saturday, November 6, 2010
- Thursday, November 25, 2010
- Friday, December 31, 2010
- Thursday, January 20, 2011
- Sunday, February 13, 2011
- Monday, February 21, 2011
- Tuesday, March 1, 2011
- Wednesday, March 2, 2011 (launch announcement of iPad 2)
- Thursday, March 10, 2011
- Friday, March 11, 2011 (retail availability of iPad 2)
- Tuesday, March 22, 2011
- Saturday, April 2, 2011

Appendix C: Technology Journalists: Illustrative Articles

http://pogue.blogs.nytimes.com/2010/01/27/the-apple-ipad-first-impressions/?_r=0



Pogue's Posts

The Latest in Technology From David Pogue

The Apple iPad: First Impressions

JANUARY 27, 2010 3:54 PM



Tony Avelar/Bloomberg

Today Apple finally unveiled its tablet computer, the iPad. Thus concludes Phase 1 of the standard Apple new-category roll-out: months of feverish speculation and hype online, without any official indication by Apple that the product even exists.

Now Phase 2 can begin: the bashing by the bloggers who've never even tried it: "No physical keyboard!" "No removable battery!" "Way too expensive!" "Doesn't multitask!" "No memory-card slot!"

That will last until the iPad actually goes on sale in April. Then, if history is any guide, Phase 3 will begin: positive reviews, people

<http://www.bloomberg.com/news/articles/2010-01-28/apple-ipad-will-need-content-as-cool-as-it-is-rich-jaroslovsky>

Apple iPad Will Need Content as Cool as It Is: Rich Jaroslovsky

by Rich Jaroslovsky

January 28, 2010 – 4:00 AM EST



The Apple iPad tablet is pictured in this undated handout photograph provided to the media on Jan. 27, 2010. Source: Apple Inc./via Bloomberg

Jan. 28 (Bloomberg) -- With all due respect to Steve Jobs, he chose the wrong name for Apple Inc.'s new iPad.

A far better name would be iWonder. As in, it certainly is a consumer-tech wonder. And also as in, I wonder if the content providers who may determine its success are prepared to take full advantage of it?

The half-hour or so I spent playing with the iPad at its San Francisco unveiling yesterday was much too short a time to evaluate it authoritatively. What I can say is that it's fast, beautiful and loaded with potential.

The half-inch-thin iPad looks something like an iPod Touch on steroids. While it uses the iPhone/iPod Touch operating system -- meaning it runs just about all the 140,000 or so

	BUSINESS	DESIGN	ENTERTAINMENT	GEAR	SCIENC
--	----------	--------	---------------	------	--------

SHARE



SHARE



TWEET



PIN



COMMENT
0



EMAIL

APPLE IPAD

LEARN HOW WE RATE

WIRED

Compact, cool-running, speedy — and a groundbreaking new way to consume media. You already know how to use it. Thousands of apps will make it more useful and fun.

TIRED

No multitasking means no gadgets or widgets: Does IM really need a full screen? Virtual typing is tricky when holding iPad upright. No way to print directly. Apps are only available from Apple's App Store.

BUY IT NOW | APPLE

On the eve of the launch of Apple's iPad, I am thinking of Ed Roberts. He never became a household name, but as the man behind the Altair computer — a kit for lunatic tech hobbyists released in 1975 — he was responsible for launching the microcomputer era.

When nearly everyone in technology thought that computers would forever be restricted to big institutions, Roberts envisioned the machines as tools of empowerment. "If I were to give you an army of 10,000 people, could you build a pyramid?" he said. "A computer gives the average person, a high school freshman, the power to do things in a week that all the

PERSONAL TECHNOLOGY

Laptop Killer? Pretty Close

iPad Is a 'Game Changer' That Makes Browsing and Video a Pleasure; Challenge to the Mouse



When held horizontally, the iPad's virtual keyboard is roomy and easy to use. REUTERS



By WALTER S. MOSSBERG

Updated April 1, 2010 12:01 a.m. ET

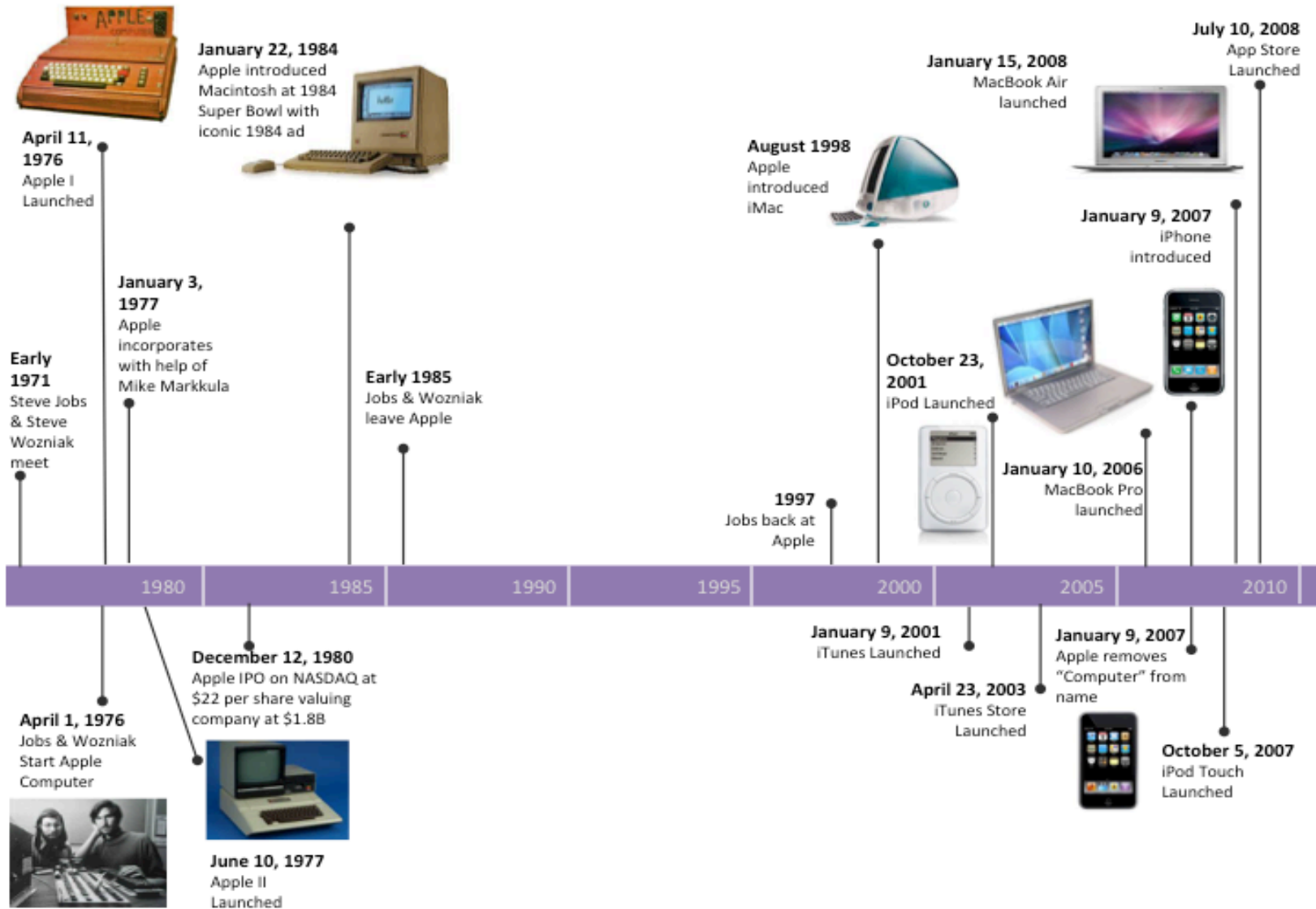
For the past week or so, I have been testing a sleek, light, silver-and-black tablet computer called an iPad. After spending hours and hours with it, I believe this beautiful new touch-screen device from Apple has the potential to change portable computing profoundly, and to challenge the primacy of the laptop. It could even help, eventually, to propel the finger-driven, multitouch user interface ahead of the mouse-driven interface that has prevailed for decades.

But first, it will have to prove that it really can replace the laptop or netbook for enough common tasks, enough of the time, to make it a viable alternative. And that may not be easy, because previous tablet computers have failed to catch on in the mass market, and the iPad lacks some of the features—such as a physical keyboard, a Webcam, USB ports and multitasking—that most laptop or netbook users have come to expect.



If people see the iPad mainly as an extra device to carry around, it will likely have limited appeal. If, however, they see it as a way to

Appendix D: Apple's Major Product Offerings and Key Dates



Appendix E: Tablet Product Category in March 2011

