

The values of using smart phones

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Abstract. The purpose of this paper is to complement previous research on the adoption and use of smart phones by introducing theories from consumer research and media studies. The focus is on the both intrinsic and extrinsic values that users experience when possessing, interacting with, and using smart phones as well as the media usage associated with the smart phone. As such, it shows how the Theory of Consumption Values and its five value categories: functional, social, emotional, epistemic, and conditional are useful supplements to traditional conceptualizations and explanations of smart phone adoption. Using concepts from consumption values theory to explain the user's activities and experience of the iPhone, we show how smart phone use can be usefully articulated as in terms of consumption. It also implies that the use as such is an end by itself and not only a mean to reach some other objectives, e.g. calling or surfing. In addition, we portray the smart phone use as a question of fit. These can be beneficial perspectives 1) when designing smart phones and wireless devices in the future and 2) when describing, explaining, and predicting the diffusion and adoption of smart phones and other technologies.

1 Introduction

Researchers often employ theories of technological adoption such as the Technology Acceptance Model when investigating the adoption of ICT. While these theories have proven useful when studying individual technologies, exploring different theories can also enhance the understanding of new technology usage. This paper introduces consumption values theories as an alternative perspective in describing, explaining and predicting technology usage.

By doing so, this paper breaks from the study of technology in an isolated environment to address the gap pointed out by Venkatesh et al. (2007) in their call for alternative theoretical perspectives that expand the study of technology diffusion to include contingent models. It also answers Benbasat and Barki's (2007) call to consider as a necessary variable the IT artifact and its design.

The contributions of this paper are two-fold. First, it adds to user behavior research in wireless services by elaborating on user preferences and adoption of new or different technologies. Second, it explores a contextualization of consumption values theory by using a distinction between time-in and time-out media use that draws upon phenomenological media research.

This paper is structured as follows: the first section offers a discussion of relevant theories and literature. The following segment details the research methodology used to collect and analyze the data. The subsequent section presents the findings. After the findings is a discussion addressing the theoretical implications and proposing a new model for understanding technology adoption and use. Finally, concluding remarks bring the paper to a close.

2 Literature review

This section begins with the call for different theoretical approaches to the study of technology adoption within Information Systems research. It then provides an overview to the Theory of Consumption Values (TCV), which can help understand and predict decision whether or not to use a given technology. It then reviews relevant literature that argue how time-in versus time-out media usage shapes the way in which people employ technology in everyday life.

2.1 Call for different approaches

In the study of adoption and use of information technology, researchers have adopted and applied different behavioral models from cognitive psychology (Benbasat and Barki, 2007). To explain the adoption and use of information technology in different contexts, a significant body of literature has built upon the Theory of Reasoned Action (Fishbein and Ajzen, 1975), Theory of Planned Behavior (Ajzen, 1985, 1991), Technology Acceptance Model (Davis, 1989; Davis, Bagozzi, and Warshaw, 1989) and Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis, and Davis, 2003).

Recently, TRA has been used to gauge attitudes about mobile advertising (Wong and Tang, 2008) and to shed light on blog participation (Hsu and Lin, 2008). The Theory of Planned Behavior continues to advance ICT research by expanding to include new types of IT systems (Dinev and Qing, 2007) and to the acceptance of broadband among different groups (Hsieh, Rai, and Keil, 2008). Other studies use UTAUT to study computer applications in non-Western countries (Al-Gahtani, Hubona, and Wang, 2007) or to investigate the adoption of e-commerce in developing nations (Uzoka, 2008).

The most established is the Technology Acceptance Model, which has been and still is used widely in information systems research (Venkatesh et al., 2007), including the recent study of topics such as wireless data networks (Yoon and Kim, 2007) and mobile communications (Zhang and Mao, 2008).

Even though TAM is among the most influential behavioral models, recent literature has questioned whether it directs researchers' attention away from the antecedents of belief and does not take into account the IT artifact or its design; thus neglecting important outcomes of information technology (Benbasat and Barki, 2007). Other authors have argued that TAM is reaching maturity (Venkatesh et al., 2007). This, coupled with the need for alternative perspectives (Venkatesh et al., 2007), establish the need to explore alternative theories that may explain the adoption and use of advanced wireless devices.

2.2 Consumption values

Consumption values are at the core of consumer research. They address the explicit and implicit reasons and motives when people are making decisions in consumer situations. The academic discipline of consumer research emerged in the mid sixties (Holbrook, 2006). Since the start a number of models, frameworks, and theories have emerged that explain, predict, and describe consumer choices, including Theory of Consumption Values (Sheth, Newman, and Gross, 1991a; 1991b), experiential value (Mathwick, Malhotra, and Rigdon, 2001), and Holbrook value typology (Holbrook, 2006). In the early days the consumer was viewed as a rational economic decision maker who processes information in order to maximize value

(Sheth, 1979). Furthermore, consumer value was primarily conceptualized as a tradeoff between price and quality. In the early 1980s researchers began to criticize and question the logic of the economic rational man and the assumption that consumers resemble a calculator (Holbrook, 2006). Subsequently, Holbrook and Hirschman (1982) proposed what is known as the experiential approach. They introduced new concepts and constructs, such as fantasies (dreams, imaginations, unconscious desires), feelings (love hate, anger, fear, joy, sorrow), and fun (Holbrook, 2006). Consumer research has evolved from a simplistic view of the consumer decision process to embrace many more reasons and motives including both intrinsic and extrinsic values (Holbrook, 2005; 2006).

One effort to integrate the different types of consumption values is Sheth et al. (1991a; 1991b) who proposed the the Theory of Consumption Values (TCV). The TCV is based on the synthesis of a large literature review survey and includes five different types of values that underlie consumer choice, thereby providing an encompassing understanding of the consumer experience. A particular choice may be determined by one value or influenced by several values. The five values are described below:

1. Functional value follows the logic of the rational economic man and assumes economic utility theory. Decisions (consumer choices to buy or use a product or service) are based on characteristics or attributes of the consumable item. For example, the purchase or use of a mobile phone might be based on functionality or price.
2. Social value is important in consumer decisions that involve highly visible products or services to be shared with others (such as gifts). For example, a sports car, mobile phone, or laptop may be chosen more for the perceived social image evoked than for functional performance. The idea that some products or services possess symbolic importance in excess of their functional worth is the foundation of social value.
3. Emotional value is the third type of value influencing consumer choice. To illustrate emotional values, consider the thrill of riding a rollercoaster or buying a new mobile phone. The thrill, joy, or excitement is emotional value. Aesthetic considerations, such as beauty, can add emotional value to a product.
4. Epistemic value applies when consuming or experiencing new products or services, such as buying a new computer or mobile phone. In cases when you are either bored with your current product, curious about something, or just want to learn something new, epistemic value applies.
5. Conditional value applies to products or services that only have a value depending the context (time or place). For example, the telephone number 112 is only valuable when you are in certain countries and need to call for emergency services. Products that have a seasonal value also provide strong examples of conditional value.

The application of TCV has been demonstrated in technology decisions. An early technological application that is relevant to this study comes from Alpert (1994) who studied the decline in functional, epistemic, emotional, and social value of technology over time.

2.3 Time-in, time-out uses of media

Jensen (1995) and Larsen (1998) have proposed a distinction between *time-in* and *time-out* uses of media. The distinction draws upon a sports metaphor in which time-out activities always occur within the time-in of a game. The distinction describes how uses of media within the life-world (i.e. the ordinary, the un-reflected) can be punctuated by time-out media use when a consumer takes out time to consciously use a medium. Similar distinctions can be found in Giddens' structuration theory (Giddens, 1984), where ordinary life is interspersed with reflective moments, as well as in Carey's treatment of media as transmission and ritual (Carey, 1989) and Roger Silverstone's distinction between the *ordinary* and the *ritual* (Silverstone, 1994; Larsen, 1998). To some extent all draw upon a phenomenological tradition that highlights the "lived" uses of media, particularly how certain classes of media (e.g. television or radio) play a role in people's lives. For the purpose of this paper Jensen's and Larsen's distinction provides a suitable framework because it suggests a movement between the two kinds of media use without sacrificing a relational perspective on them. Time-out is integral to "make the game go on," in the sense that new strategies, new knowledge, and new reflections on the state of the *time-in* can be acquired in *time-out* consumption mode. In other words, the dimensions on the consumption of media in either time-in and time-out mode are intimately related. However, as we will show later, observing consumption over time ties specific time-in/out usage patterns to changes in the user's valorization of the technology.

Time-In	Time-Out
Integrated practice	Autonomous practice
Social Practice	Aesthetic practice
The ordinary	The extraordinary
Resource	Exposition
Action	Representation

Table 1: Time-in/out dimensions (adapted from Jensen 1995)

As Larsen (1998) argues, neither Jensen (1995) nor Silverstone (1994) give empirical examples of time-outs as suspensions of everyday activities. This paper employs the distinction in order to expand the Theory of Consumption Values by adding the dimension of time-in/out usage to the standard conditional value that is used to predict and explain consumer choices.

A significant contribution of this paper uses the time-in/out distinction to begin the development of a Mundane Consumption Model (MCM) that shows how use of an "extraordinary device" changes over time. By repurposing the time-in/out distinction from the original inspiration from the likes of Habermas (1979), Giddens (1984), and Carey (1989) by way of the theory of consumption values, this paper marks a pragmatic move that allows the time-in/out distinction to be applied in empirical studies of technology artifacts and services.

3 Methodology

The data analyzed in this paper comes from a six-month-long qualitative field study in which 16 participants were given iPhones shortly after Apple's release of the 3G iPhone in Denmark. The participants worked full time or part time and their age varied from 22 to 51. The common denominator is that they were recruited from a university course in e-business strategy. In exchange for participation in the study that included access to usage data from the operator and the commitment to fulfill data collection requirements, participants received six months use of an iPhone including a voice, SMS, and data plan.

Using surveys, focus groups, and one-on-one interviews, data were collected regarding pre-adoption and post-adoption attitudes and expectations. Prior to receiving the iPhone, participants completed a comprehensive survey that included detailed information regarding computer, mobile phone, and other information and communication technology usage. They were also asked what they would like to do with their phone that they were unable to do with their previous phone, and how their usage of ICT would likely change after receiving the iPhone. Flexibility and openness in the direction of the interaction with the participants was kept during the study, allowing new perspectives, theories, and propositions to occur throughout the study.

After adopting the iPhone, participants were divided into three focus groups to discuss the various consumption values that determined their interest in the device and its various uses. The groups reconvened to discuss their interaction with the handset interface. Surveys were repeated at the midpoint and end of the study to track behavior and usage. Responses from the initial survey were used to customize questions for the subsequent open-ended interviews. One interview discussed the features most important to them when selecting a wireless device. Another set of interviews was conducted at the conclusion of the study to discuss the change in behavior and attitudes over the duration of the study. Focus group and interview field notes were analyzed, coded, and a selection of the findings are detailed in the following section.

4 Empirical Findings

This section presents the findings relating to each of the five consumption values. It reflects longitudinal data collected at different points, beginning shortly before the participants received their iPhones through the end of the study. Therefore, it reflects both pre- and post-adoption values, and it describes the change over time. In order to illustrate the theoretical concepts we present the empirical finding according to the theories.

4.1 Functional value

At first glance, the web-enabled smart phone offers great functional value to users. It offers constant access to the internet, email, and information search. It also enables telephone conversation and SMS, two features that have become part of everyday communication. Entertainment features, such as the video player and music player, as well as productivity tools like the calendar add additional functional value to the device. The ability to navigate unfamiliar areas with GPS adds value. The ability to download various programs, be they games or productivity tools, enhances the user experience. A quintessential value of the smart

phone offering stems from the integration of many functional elements into a single, transportable, always-available device. Having so many useful tools literally in the palm of one's hand, ready whenever needed, separates the smart phone from other ICT devices.

At the same time, the functions that resonate most strongly with users gain much of their value from the other consumption values: social, emotional, epistemic, and conditional. These values influence the significance the smart phone offering (specifically the iPhone in the case of this study) to the end users.

Users' perception of functional value changes over time. From pre-adoption to the end of the study, significant value changes occur. For example, the functional value increased for some participants, while it decreased for others. For example, Participant #10 explains that the smart phone-based email is decent, but it is significantly less robust than his laptop's personal computer email system. Participant #12 noted a decline in the functional value once she experienced the product, citing difficulty-in-use and problems with wireless connectivity. Participant #11 said: "It's only when you use it that you find out about the negative things." At the same time, others found that the functional value increased post-adoption. Participant #1 indicated that some things do not work well, while other functions exceed expectations. Likewise, participant #7 said that when she first adopted the iPhone, she was unaware of what it could do or how easy it would be to use. After using it, she sees the benefit to having certain features available on her mobile device. Participant #9 describes the growth in functional value over time. She experiences a progression from not using it to not wanting to be without it. She declares that certain uses have become habit, perhaps even addictions.

4.2 Social value

The iPhone itself creates social value. It can be a conversation piece about which many people ask questions and strike up conversations. It provides an icebreaker for iPhone users to begin talking to other users, thereby facilitating social interaction and establishing new relationships. As described by Participant #8: "It brings people together and creates an inner circle." The iPhone serves a social value similar to many fashion items. Participant #10 explains as follows: "It must be high tech, cutting edge and fashionably designed. This is important because it tells my surroundings about me, my interests, and my preferences." Participant #8 describes it as personal branding that sends a message to affect friendships and relationships, similar to the personal identity associated with wardrobe choices. Participant #11 describes the iPhone as being "like golden chains or expensive cars. It's a fashion icon. 'Look I can afford this iPhone. I have money.'"

The reaction can be different based on different social settings and groups. Participant #16 gives a good example by juxtaposing his work environment: "all my colleagues have one, so it's not interesting to them" with the positive reception in his domestic setting: "I got 30 seconds of attention from the kids." While the iPhone may garner admiration for its owner, it can also be deemed unfashionable or inappropriate in certain settings. Participant #6 indicates that "in some groups I like to flash it; in other groups I feel like a follower because my friends have it." He also says, "I don't like to show my phone some places. People ask me how I can afford it – I don't like to talk about money and finance." Participant #2 echoes this sentiment, saying: "When people ask me why I got it, I always say I got it for free [as part of the study]... I'm not paying for it myself. That is important to me. I don't like to flash it this way in public, late at night [because it might make me a robbery target]."

Social value changes over time, which can result from intrinsic reasons or from social responses. For example, the social value declined for Participant #10. His attitude changed

as he realized social confirmation was not as important to him as he thought. He explains: “Before I got the iPhone, I saw it as a social phenomenon. Over time, I realized that I didn’t get gratification socially by talking about the iPhone.” Participant #12 experienced a paradoxical change over time. During the study she received much more positive attention because she owned an iPhone, which raised the social value. At the same time, she found much of the attention bothersome and annoying, which lowered the social value. Participant #7 continues to derive strong social value from her iPhone over the course of the study: “The iPhone gives an impression to people. It makes a statement, even though it is more common than six months ago. People know the brand, the phone, and what it is; but not many people have it.” Participant #9 offers a different opinion: “When it came out it was cool. Now it is common.” Likewise, Participants #6, 8, and 13 explain that the phone no longer offered the caché that it afforded at the beginning of the study. Similarly, at the commencement of the study, Participants #15 and 16 envied people with iPhones and expected their social groups to share the opinion. Once they received their phones, however, they learned that their peers did not care.

Participants #1, 2, and 11 expressed a drop in social value over time that was causally linked to a decline in functional value. As more people gained first-hand or vicarious experience with the iPhone, many began to notice the functional shortcomings. Therefore, as the functional value of the phone declined, so did the social value. At the extreme, Participant #11 explained that the decline in functional value affected the social value by creating a situation in which adopters were viewed negatively – as unwise for spending too much money on a product with limited functionality. He explained that some users found themselves in the position of defending their decision to purchase an iPhone to the members of their social groups.

4.3 Emotional value

The Maslowian need of belonging (Maslow, 1946), which is an emotional need fundamental to many of the participants, is filled by the ability to be constantly connected. Participant #13 explains: “Connections to other people. It is obvious that whenever we switch off our phones we are not important anymore.” For example, the ability to access social networks and various twitter sites enables people to maintain their social relationships in a way that other types of communication do not offer. Participant #9 uses such sites to “see what everyone else is doing.” As Participant #2 describes: “It’s easy to stay updated on what’s going on in my friends’ lives without really committing to a dialogue.” Communication features such as telephone and SMS provide a connection to family and friends. Participant #4 describes how the many different communication media make it easy to keep in touch with friends and “it helps me keep in touch with some people that I normally wouldn’t talk to so often.”

The technology integrated within the smart phone provides tools for altering one’s emotional state. Many participants use the music player because the choice of music can bring about a desired mood. Others have downloaded specific applications, such as Participant #8 who downloaded a program named Tranquility that plays relaxing sounds. In addition to the emotion-enabling features, the phone itself can trigger emotions, as described by Participant #15: “it’s also beautiful [and] the aesthetic feeling.” She also uses it to listen to spiritual e-books.

According to Participant #7, “I like to always have my pictures with me -- reminds me that a situation was fun, and I get in a better mood.” By carrying her photo albums with her, Participant #8 describes how her iPhone provides the familiar feeling wherever she may be: “You can take a little bit of home with you. It makes you feel secure.”

Emotional value changes over time. Some people, such as participant #7, remain excited about having their phones. Others compare their emotional relationship with the iPhone to a love affair. Participant #16 says: “It’s like a girlfriend. In the beginning, it’s fun and sexy, but after half a year, the excitement is gone.” Participant #9 paints a similar picture: “It’s like being in love. You have to touch it all the time, but then it’s just part of your everyday life.” Other participants expressed a shift from enthusiasm to disappointment during the course of the study. Participant #11 describes it as follows: “When I get new things, I’m leaning toward optimism and not focusing on negative things. It’s only when you use it that you find out about the negative things.”

4.4 Epistemic Value

The iPhone derives epistemic value in three ways. First, the artifact itself inspires curiosity. People like trying new technology and learning how to use a new device and experiencing a new graphic user interface. The device itself therefore provides novelty value and appeals to those seeking to satisfy their curiosity. Several described this quality as the “cool factor.”

The second way the iPhone derives epistemic value is through the availability of downloadable applications and various media. There are thousands of programs that can be downloaded, many for free. Access to video websites such as youtube further provides a constant stream of novelty. The applications themselves can be used to explore and see what each application is like. Participant #12 explains: “The iPhone is a new product. It’s interesting to see what people make. What applications are there? You really have everything in the apps.” Participant #6 indulges his intellectual curiosity by finding out about the latest programs: “I read a lot on the web, new ways to use it [the iPhone]. How to make your everyday easier with new applications...” Participant #11 explains: “I’ve been looking at the development tools – how to make things for the iPhone.”

Third, the integration of a standard web browser enables users to find whatever information they seek. This helps satisfy curiosity, and it can end confusion. Participants #2, #4 and #13 suggest that users visit Wikipedia when they disagree on something. Participant #10 declares: “It can awaken creativity. I’m a musician as well. I can come up with new ideas. Music puts me in a different mindset– thinking in a different way when you work.”

Of the five consumption values, in this study epistemic value experiences the greatest decline over time. As indicated by the literature, curiosity and novelty are key drivers of epistemic value. As familiarity with a device grows, the epistemic value declines. In the beginning, participants explored the iPhone features, and downloaded applications simply to experiment with something new. As the study progressed, the amount of tinkering declined. Participant #11 sums up this phenomenon by explaining that at the beginning of the study, the iPhone was a toy. It increased his technical knowledge, but by the end of the study a future increase in technology knowledge was unlikely. The epistemic value declines rapidly.

4.5 Conditional value

A significant impact of the iPhone stems from its omnipresence. The participants almost always have their iPhone with them, and through the 3G and EDGE connections are always connected to the internet. The integrated tools, such as music player, camera, and other applications add significant value to the iPhone. However, many of the features are viewed as inferior substitutes to equipment that is focused on a single purpose. The preferences varied by individual participants, but all believed the iPhone was a satisfactory, not optimal, device for many of its uses. Participant #10 articulated that smart phones do many things, but they do not do any of them well.

In general, the conditional preference for the iPhone was based on convenience-related measures. Much of the conditional value stemmed from the availability of a laptop computer and internet connection. In general, if a computer were close and connected to the internet, the computer would be the device of choice. If time were limited, the long-boot up time of a computer added conditional value to the iPhone, which was ready for use. When a Wi-Fi or land line internet connection was unavailable, the conditional value of the smart phone rose dramatically because it was the only alternative. For example, none saw much value in typing email on the iPhone unless a computer was unavailable, the message must be sent immediately, and the message could be conveyed in a few words. At the same time, some preferred reading email on their iPhone, even when the computer was ready-at-hand. Such preference was often discussed as a habit, rather than a conscious choice. Participant #2 frames her thought process: "I use the [mobile] internet on the go. I don't sit at home and say 'I want to sit on a bench and surf.'"

5 Towards a consumption theory of mobile use

This section discusses the empirical findings by focusing on the consumption values, followed by a discussion of the implications of time-out and time-in media use reflected in the data. It then discusses the correlation of the two theories and proposes a new framework that synthesizes of the two theories.

5.1 Consumption values

The data from this study evinces the significance Consumption Values have in understanding the usage of technology by end users. All five values impacted the user experience. The study examines theoretical generalizability, not aiming to develop a probabilistic model. Participant data indicate an interrelation between different values such that a change in one value may cause a change in others. Additionally, the study presented extreme facilitating conditions by providing an iPhone and six month subscription at no cost to the user. This creates a pro-adoption bias that results in an inability to determine real-world intention to adopt the iPhone. While most participants expressed the intention to use a different type of mobile device after the study, the recall of the phones at the conclusion of the study also created an artificial stimulus, which impedes measuring accurately whether participants would have continued to use the phone if they were permitted to keep the phones.

At the same time, the study highlights how the iPhone does not derive its primary value from stand-alone capabilities. Through this empirical study we have seen how value is not a discrete activity on the phone, but a mixture of consumption values enabled and embedded

within a portable media device such as the smart phone. Through this longitudinal study, we have seen how the iPhone changed (for most participants) from being an object for “conspicuous consumption” (Veblen, 1912; Veblen and Howells, 1965) and intense epistemic curiosity to becoming a mundane, ordinary artifact.

At the beginning of the study, the “coolness” factor (social and emotional values) and epistemic value were the primary drivers. The potential functional benefits also drove interest, but to a lesser extent. Over time, the perceived functional benefit declined for most of the participants; however, the conditional value increased. While the iPhone never served as a viable replacement for a personal computer, the use of the iPhone when a computer was unavailable became a standard part of many users’ daily lives. Several participants described, for instance, checking their email or using the iPhone to “kill time” as a habitual activity that blended in with a range of other activities.

5.2 Going time-out to time-in

These findings present an interesting scenario that can be examined using Jensen’s (1995) and Steeg Larsen’s (1998) distinction between time-in and time-out media consumption. The social value reaped by “showing off” the iPhone is clearly a time-out task. It involves deliberately dedicating time and effort to the social, conspicuous practice of promoting the phone, discussing the phone, or otherwise flaunting it as a gadget. The emotional value gained by the aesthetic beauty of the product design is also a time-out event. Users take time away from other activities to look at it, caress the shape, and feel the glassy texture of the device. At this stage, the iPhone has a representative meaning greater than its functional value. It is extraordinary and its owners treat it as such. Jensen’s (1995) distinction highlights the way in which media can be both integral to the flow of daily activities and can also facilitate a reflective distance from the mundane. In the case of the iPhone, the time-in/out distinction shows how new portable media and communication devices give rise to time-in integration activities that previously occupied time-out situations.

The novelty, and therefore the associated time-out activities, of the iPhone declines rapidly after its adoption. The aspects that originally filled epistemic needs quickly serve primarily utilitarian functions. As the iPhone becomes more ordinary, its usage becomes primarily time-in use. Checking email, making phone calls, and other uses that are “invisible,” or seamlessly integrated with life. Music is used during jogging, commuting, or other activities; e-mail was regularly checked during other activities (attending class, commuting, eating breakfast, etc.). By the midpoint of the study, participants were not specifically playing with the iTunes function or setting aside time to listen to music. The conventional mobile phone features were used in a similar manner to pre-iPhone behavior, with the exception of SMS, which for most participants declined because typing on the iPhone requires concentration, making it more of a time-out activity than their old phones, on which typing was almost an unconscious activity. This shift in usage supports Jensen and Jankowski’s (1991) argument that media usage is generally changing from a time-out mode of consumption to a time-in mode in which multiple activities coincide with or are supported by media usage.

Table 2 presents examples of time-in and time-out activities are represented by the research data.

Time In	Time Out
<p>Integrated practice Example: using the MP3 player while jogging, checking e-mail in class</p>	<p>Autonomous practice Example: Watching downloaded movies</p>
<p>Social Practice Example: keeping in touch with friends, using the phone as a general communication device in daily life</p>	<p>Aesthetic practice Example: product design, enjoying the form-factor of the device, comparing iPhone form to “regular” phones</p>
<p>The ordinary Example: calling a friend to talk, e-mail client and browser on the iPhone resembling large screen equivalents</p>	<p>The extraordinary Example: demonstrating the device for a friend, comparing iPhone functionality to “regular” phones</p>
<p>Resource Example: using GPS for wayfinding</p>	<p>Exposition Example: conspicuous public display of phone</p>
<p>Action Example: Using device to get address from internet, using device as a decision tool (getting information off the web, using GPS)</p>	<p>Representation Example: Using device to be "cool", life-style considerations, watching others who carry iPhones</p>

Table 2: Examples of time-in vs. time-out (adapted from Jensen, 1995)

5.3 Synthesis

The Theory of Consumption Values is intended to predict and explain the intention to purchase a consumer good (Sheth et al., 1991a; 1991b). Information and communication technology experiences rapid decrease in monetary value . The data from this longitudinal study indicate that four of the five consumption values that lead to initial adoption decline rapidly over time, affecting the way people use the ICT device and affecting the perceived desirability of the device compared to other offerings in the market. By itself, the Theory of Consumption Values does a good job describing this change. At the same time, applying Jensen (1995) adds additional explanatory power to TCV. As the consumption values decline for a given product, the usage follows a parallel pattern that shifts from time-out use of media to time-in use of the product. Realistically, this change does not apply to the whole range of consumption values, and the figure below merely illustrates a shift that is arguably more pronounced in terms a change towards an emphasis on functional value and a corresponding change towards time-in usage.

Figure 1 illustrates the shift in consumer value placed on a device and the change from time-out to time-in use.

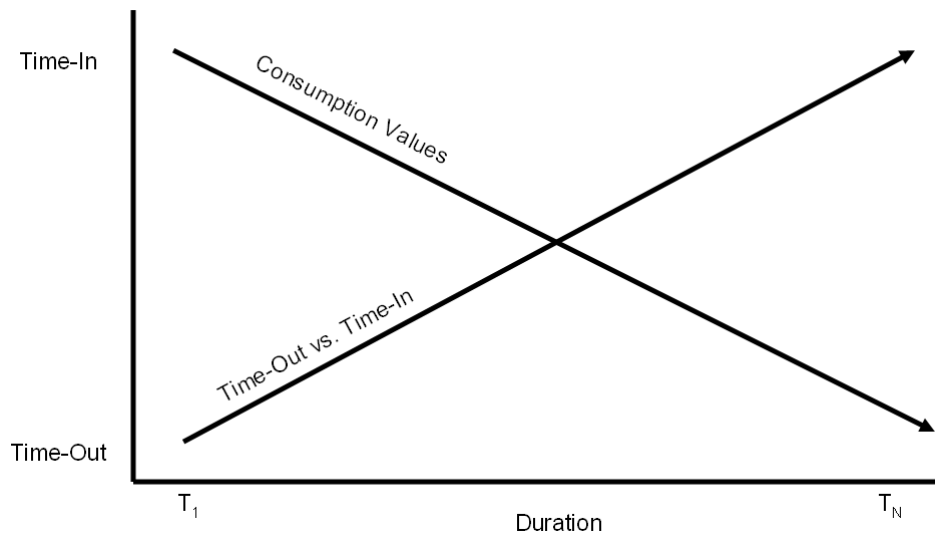


Figure 1. Tentative model of changes in consumption values and time-in/out usage

We argue that these changes are correlated, and that a change in one can be used to predict a change in the other. However, we emphasize that the figure is tentative, and that further analysis should be made to understand the differences in the rate and nature of the change over time for consumption values. By combining the two frameworks, we can gain a better understanding of the product lifecycle of technology-based consumer products. Therefore, we propose further research be conducted to further formulate and validate a Mundane Consumption Model (MCM). Such a model has both methodological as well as theoretical consequences. From a methodological perspective, it highlights the phenomenological perspective on consumption values, i.e. that consumption values are embedded in everyday life and everyday activities. This emphasizes the importance for continued advancement in the research on consumption values, and it demonstrates the importance that rich data contributes with to the study of consumption values as a way to understand technology adoption.

On a theoretical level, applying the distinction between time-in and time-out use has the advantage of highlighting the contextual nature of consumption values by drawing attention to the importance of an artifact's conditional value. This study shows how consumption values are articulated differently across a continuum of time-in and time-out usage. As noted in the simplified model above (fig. 1), the ways in which users articulate value for their products shifts over time. However, in a short lifecycle model, the contextual manner by which values are expressed is also worthy of notice. Thus some values are articulated in the realm of time-in use, some in the realm of time-out. While this study has not explicitly researched this new model, we believe that it provides a fruitful vista for further research. As mentioned, particular care should be taken to better model the differences in how various consumer values change, and how the dimensions of the time-in/out model of media consumption are related to that change.

6 Conclusion

This paper uses the Theory of Consumption Values to understand the value of the iPhone over time as perceived by its users. TCV provides a rich framework for researchers, marketers, and product developers alike. A detailed analysis of the qualitative data finds a relationship between the changing consumer value of the device and whether it is integrated into the user's daily activities or is used in a time-out situation that entails taking time from everyday, mundane activities. From the point of view of the time-in/out proposition, Jensen and Jankowski (1991) argue that new media technologies increasingly creates a space of time-in media usage, where the ritual meanings of usage (e.g. representational use, aesthetic forms of use, ritualized, time-critical forms of reception such as regular tv-news and so on) are gradually disappearing. This change can be demonstrated on the level of the individual consumer whose behavior and value attributions on single-product and service level changes over time, as well on a cultural macro scale where the form factor of technological media devices is shrinking, while wireless access, and accesability of media content is rapidly increasing.

While we identify the relationship between Sheth et al. (1991a; 1991b) and Jensen (1995), this paper modestly seeks to introduce the relationship into the lexicon of scientific discussion. Further research is necessary to determine how strongly the two theories correlate with each other and to examine how a change in one causes a change in the other. Additionally, while this study provides a theoretical investigation rich with qualitative data collected from each participant, our goal is to provide theoretical generalizability, not to create a probabistic model statistically generalizable to general population. Future studies should add both qualitative research to gain new insights, and quantitative data collection to provide theoretical validation. Whereas this study introduced faciliating conditions that led to the adoption of specific smart phones, other studies should study first-time adopters without significant incentive in order to avoid the bias inherent in this study.

Acknowledgment

This work was in part supported by the DREAMS project via a grant from the Danish Agency of Science and Technology (grant number 2106-04-0007) and by Copenhagen Business School. The authors would like to thank the reviewers for their constructive comments and the field study participants for their involvement.

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