2012

"DAD BOUGHT ANOTHER TOY": MEANING MAKING AND EMOTIONS WITH TABLETS

Efpraxia Zamani
Athens University of Economics and Business (AUEB), ezamani@aueb.gr

George M. Giaglis
Athens University of Economics and Business, giaglis@aueb.gr

Pouloudi Nancy
Athens University of Economics and Business (AUEB), pouloudi@aueb.gr

“DAD BOUGHT ANOTHER TOY”: MEANING MAKING AND EMOTIONS WITH TABLETS

Zamani, Efpraxia D., Athens University of Economics and Business, 47a Evelpidon Street & Lefkados, 11362 Athens, Greece, ezamani@aueb.gr

Giaglis, George M., Athens University of Economics and Business, 47a Evelpidon Street & Lefkados, 11362 Athens, Greece, giaglis@aueb.gr

Pouloudi, Nancy, Athens University of Economics and Business, 47a Evelpidon Street & Lefkados, 11362 Athens, Greece, pouloudi@aueb.gr

Abstract

This paper examines the interplay between meaning and emotion of tablet users during the interaction with these artifacts. Following an interpretive case study approach, we examine users’ meaning making as the context of use changes from the business context to the personal environment, trailing users’ interpretation of the tablet and their overall experience, in order to detect changes in their feeling states and understand their emotional experience with the IT artifact. Having examined mainly on-the-go professionals, our findings illustrate that the tablet is considered as a compelling device, being interpreted simultaneously as an extension of the office environment, while being mobile or at home, as a multimedia and content consumption station and as communal device, awarding or strengthening the social character of group activities. In addition, the findings suggest that users develop an attachment to the device, by either personalizing it and approaching it as a companion, or by attributing to it a symbolic significance, by recognizing a value in its expressive characteristics and assessing it as a ‘possession to own’. Our findings demonstrate that, as the tablet moves from the business to the home environment, gradually losing its utilitarian purpose, changes in feeling states become more significant and the emotional experience intensifies.

Keywords: user experience, mobile information systems, meaning, emotions

1 Introduction

Technological advances in mobile information systems have transformed the way people interact with IT artifacts. In this paper we argue that, while previous research has offered valuable insight into the meaning individuals may attach to IT artifacts, the advent of tablets requires a reassessment of the significance these may hold for their users. This study proposes that the different facets of meaning have an impact on user's emotion, which in turn, affect the evaluation of user experience (Forlizzi & Battarbee, 2004). Approaching user experience as subjective, our study seeks to explore the relationship individuals develop with their tablets in everyday life. It does so by following the case study research method, designed around a paradigmatic case, that of the iPad, specifically because it is considered as the exemplar case among its class; even though tablets have existed for years, it is only recently, with the launching of the iPad, that tablets became popular among everyday users and the mass consumer market.

The paper is structured as follows. The next section discusses our study's theoretical background, followed by the research methodology and the research findings. The discussion section reviews findings, drawing insight from consumer research, social sciences and the industrial design literature, aiming to sharpen the concepts nesting within the constructs of meaning and emotions of individual users, in order to offer rich insight on users' relationship with their tablets. The paper concludes by presenting the study implications and areas for future research.

2 Framing User Experience

The literature of user experience enjoys a long history, during which researchers have explored the phenomenon following different philosophical perspectives. Law et al. (2007) highlight that there are two relatively mutually exclusive traditions; the pragmatist/phenomenological, which emphasizes the situatedness and the uniqueness of the phenomenon, and the experimental, which builds upon experimental psychology, seeking to examine the building blocks and the underlying processes of user experience. The present study separates itself from the experimental approach and adopts the conceptualization of experience as expressed by Wright et al. (2005); experience is perceived as composed of four intertwined threads: the compositional, the emotional, the sensual and the spatiotemporal threads (Wright et al., 2005). By spatiotemporal, the authors refer to the situatedness of one's experience, as it occurs within a given space and time. The sensual thread concerns the aspect of the experience that affects one's sensory modalities, and consequently one's initial reactions and engagement with the IT artifact, while the emotional thread refers to the evaluation of the experience through the attribution of emotional value (*Figure 1*). Finally, the compositional thread concerns the narrative structure of the experience, as it develops through the interaction between user and artifact (Wright et al., 2005).

Following a similar line of thought, Desmet and Hekkert (2007) discuss that one's experience with a product depends upon three different types of experiences: the aesthetic experience, the emotional experience and the experience of meaning (*Figure 2*). In more detail, they propose that one's interaction with a product (the instrumental, the non-instrumental and the non-physical interaction) involves aesthetic pleasure, the attribution of meaning and an emotional response towards the product. Even though these three levels of experience follow a distinct formulation process and each of them affects differently the overall user experience, they are highly related.

The two approaches exhibit a common characteristic; they treat the emotional aspect as the mean through which one is able to remember and evaluate the experience, thus considering emotions the vehicle through which one can grasp another's experience. Emotions' integral role finds support in other studies as well. For example, Forlizzi & Battarbee (2004) argue that emotions are the link between users and IT artifacts, while Keltner & Gross (1999) discuss that one's emotional behavior may serve for communicative functions.

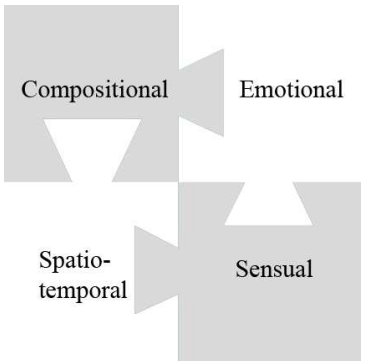

Figure 1. The four threads of user experience, adapted from McCarthy & Wright (2004).

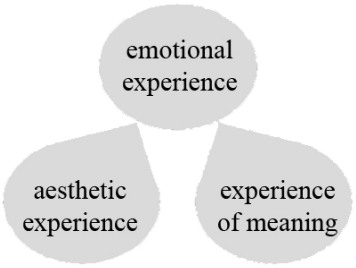

Figure 2. Framework of product experience, adapted from Desmet & Hekkert (2007).

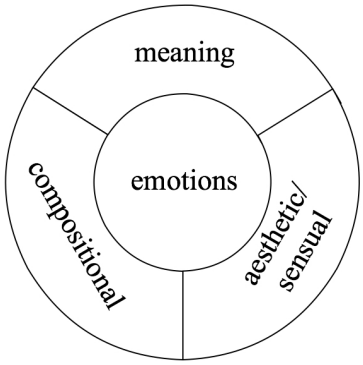

Figure 3. Combined UX framework, adapted from Vermeeren et al. (2008).

Vermeeren, Kort, Cremers and Fokker (2008) attempted to combine the aforementioned frameworks, as depicted in *Figure 3*, aiming to develop quantifiable measurements of user experience building elements, capturing quantitative and qualitative data. Building upon Vermeeren et al.'s work, the present study seeks to investigate meaning and its relationship to users' emotions.

2.1 Examining Emotions

The emotional thread acts as the mean through which users express their evaluation regarding the overall user experience (Desmet & Hekkert, 2007; Wright et al., 2005). We build upon Russell's core affect theory (Russell, 1980), as per Desmet & Hekkert (2007) recommendation. Core affect develops as a circumplex model of two separate dimensions, pleasure - displeasure and activation – deactivation, which combine to form a single feeling (Russell, 1980). People experience constantly core affect, and even though it is different from emotions, during their interaction with products, such as IT artifacts, they perceive changes in core affect (e.g., interacting with the tablet can cause disappointment if it doesn't satisfy user needs or satisfaction if it lives up to one's expectations) and attribute these changes to the particular interaction (Desmet & Hekkert, 2007).

2.2 The relationship between Meaning and Emotion

Ever since IT artifacts begun being used by individuals, researchers were fascinated with what they could connote for the individual. Turkle, for example, explored the way users relate to computation in general and illustrated that the laptop, an otherwise inanimate object, can become the extension of self. She pinpointed that, users often develop intense relationships with their portable computers and feel at one with them (Turkle, 2007). IT artifacts, by being reactive and interactive and by providing connectivity, can be seen as companions rather than plain computing devices, thus inviting users to project on them life and personality, even though they are inanimate (Turkle, 2008).

Regarding such relationships, Desmet & Hekkert (2007) discussed attachment. They highlighted that a user may develop a relationship with an object and seek to repair it if broken or handle it particularly carefully. They indicate that an individual may feel attached to a product with a similar personality to hers/his and argue that such relationships usually surface when objects have a profound meaning for the user. Likewise, Medeiros, Crilly & Clarkson (2008) illustrate that, younger users attribute meanings of freedom, peace and safety to their laptops, while they recognize them as productivity enhancers, organizers or simply a necessity. Moreover, they report that even though these users may feel less attached to their laptops and ready to replace them for newer models, they cannot function without their personal data or without "anytime anywhere" connectivity through the particular devices. Another meaning users may ascribe to their IT artifacts is that of luxury (Desmet & Hekkert, 2007), while the list can be virtually endless (Hassenzahl, 2007).

Focusing on the relationship between meaning and emotional experience, "meanings and outcomes bring emotions with them" (Cockton, 2008). Indeed, users attach meaning to the artifact through sense making processes, i.e, anticipating, connecting, interpreting, reflecting, appropriating and recounting (Wright et al., 2005). Experience of meaning, depending on one's personal characteristics and goals, and within the spatiotemporal character of the experience, will have an impact on the appraisal of the interaction (Desmet & Hekkert, 2007). This 'appraisal' is a direct reference to appraisal theory, according to which one's evaluation of her/his interaction with an IT artifact will bring about an emotional response (Lazarus, 1991). For example, an individual whose goals for the anticipated interaction are primarily utilitarian will interpret the IT artifact relatively to those goals and will evaluate the experience by comparing the outcomes of the interaction with those of other experiences. If the appraisal is positive, this will result in feelings of satisfaction, achievement, joy or excitement; if the appraisal is negative, it will result in disappointment or even anger (Vermeeren et al., 2008).

3 Research Approach and Method

Since we approach user experience and interaction with IT artifacts as highly subjective and as phenomena bounded to their social setting, our choice to follow the interpretive paradigm was a natural one. Its epistemological foundation is grounded on the premise that "individuals act toward things on the basis of the meanings that things have for them" (Boland Jr, 1979) and that knowledge of reality is socially constructed and based on subjectivity. This approach allows us to examine these meanings in depth, in the natural setting within which they occur and "from the perspective of the participants" (Orlikowski & Baroudi, 1991), while enabling us to capture multiple interpretations of the IT artifact and a deeper understanding of its significance (Prasopoulou, Pouloudi, & Panteli, 2006). The underlying philosophy guiding our research is that of Gadamer's philosophical hermeneutics (Gadamer, 1976). Hermeneutics is interested in interpreting the meaning of texts or text analogues (e.g., social structures) (Prasad, 2002). Philosophical hermeneutics in particular is focused on understanding the meaning intended by the author without separating the text from its reader, while placing emphasis on the reader-text dialogue. In other words, philosophical hermeneutics rejects the idea of a dichotomy between subject and object and requires from the reader to abandon any prejudices solely for the purpose of starting a constructive dialogue with the text, so that (s)he will be able to pose the right questions to it (the text) and arrive to genuine understanding (Prasad, 2002).

As our intention is to examine the IT artifact and the meaning it holds for its user, we followed the interpretive case study research method (Walsham, 1995), using the tablet as the unit of analysis. During the early stages of designing our research, we noticed that several individuals, specifically iPad users, were documenting their user experience in their personal blogs. Unsolicited personal blog posts offer the advantage of depicting an individual's impression on its user experience and emotions, negative of positive, as lived and felt. Having decided to document these and share them online with the readership, it is probable that the interaction with the IT artifact has evoked something, which is perceived by the author as important and valuable or imperative to be communicated. Indeed, several of the blog authors state that they aimed at specifically sharing their experience with the IT artifact, which is in line with previous findings; bloggers wish to document their lives, illustrate their opinions and "express deeply felt emotions" (Nardi, Schiano, Gumbrecht, & Swartz, 2004). We therefore consider these unsolicited blog entries as valuable empirical data, offering information toward sharpening and further developing several of the concepts deriving from the theoretical framework presented earlier.

In interpretive case studies, interviews are often considered to be the primary data source as they allow interaction between researcher and participant (Walsham, 1995); as such, using solely textual material can pose limitations. Indeed, blog authors may discuss in their posts solely the points that are most striking to them, while disregarding others that may be of greater interest to the researcher. Also, understanding the meaning and the significance of the IT artifact through texts lies with the researcher's capability to interpret non-verbal communication. However, under the prism of philosophical hermeneutics, both issues can be dealt with through the close dialogue between the

interpreter and the text; by posing correct questions, the researcher interacts with the text and grasps the meaning communicated through the authors' writings by expanding her/his horizon so as to include that of the text ("fusion of horizons") (Prasad, 2002).

The collection of empirical data took place from March to December 2011. The pool of blog entries was generated by performing a web search with the combination of the keywords "user experience" AND "iPad AND "blog". Technical reviews and blogs affiliated and/or related in any way to Apple Inc. were disregarded and only entries discussing individual user experience remained in the pool. All in all, we collected 32 blog entries. The analysis begun with a preliminary examination of the data, which assisted the coding procedure. The coding technique was based on the methodology proposed by grounded theory following the Glasserian paradigm; open coding commenced examining the data line-by-line, identifying as many codes as possible. Emerging themes, i.e., not found in the literature, were also coded and further examined. We then moved on to selective coding focusing on core variables (Glaser & Holton, 2004), i.e., in our case expressions of meanings, symbolic significances and emotions. The entire process of data analysis involved the continuous interaction between us, as interpreters, and the gathered texts and by continuously posing 'questions' to the data in relation to the research questions. Following a hermeneutic circle (moving back and forth from the parts to the whole and from the empirical data to the literature) we further refined our codes and core variables. As our goal was not to build a theory but rather to describe in detail the phenomenon and refine abstract concepts contained within the theoretical framework, we did not proceed to theoretical coding; yet, we did proceed in developing relationships between themes and subthemes in order to offer rich insight into the various meanings tablets hold for their owners.

Table 1. Casebook of study

	Country	**Gender**	**Profession**	**iPad generation**
B1	USA	Male	Marketing Associate Manager	iPad 2
B2	USA	Male	Minister	iPad 1
B3	USA	Male	Chief Technology Officer	iPad 1
B4	USA	Male	Entrepreneur	iPad 1
B5	USA	Male	Unknown	iPad 1
B6	USA	Male	Unknown	iPad 1
B7	UK	Male	Marketing Director	iPad 1
B8	USA	Male	Entrepreneur	iPad 1
B9	Netherlands	Male	Entrepreneur	iPad 1
B10	USA	Male	Entrepreneur	iPad 1
B11	USA	Male	Unknown	iPad 1
B12	USA	Male	IT Project Manager	iPad 2
B13	USA	Male	Social Media Manager	iPad 1
B14	USA	Male	Naval Architect	iPad 2
B15	Albania	Male	IT Specialist	iPad 1
B16	UK	Male	Chartered Accountant	iPad 1
B17	UK	Male	Chartered Accountant	iPad 1
B18	South Africa	Male	Web Designer and Developer	iPad 1
B19	USA	Male	Social Media Manager	iPad 1
B20	Netherlands	Female	Housewife - Retired	iPad 1
B21	UK	Male	UX Designer	iPad 1
B22	UK	Male	Exec. Editor in tech. website	iPad 2
B23	USA	Male	Computer Studies PhD candidate	iPad 2
B24	USA	Male	Management and Engineering Professor	iPad 1
B25	USA	Male	Start Up Developer	iPad 2
B26	Canada	Male	Chief Technology Officer	iPad 2
B27	USA	Male	Social Media & Strategy Visiting Professor	iPad 1
B28	UK	Male	Executive Editor in a Website	iPad 1
B29	UK	Male	Strategy Consultant	iPad 1

B30	USA	Male	Editor in Chief in a Website	iPad 1
B31	USA	Female	Freelance Web Journalist	iPad 1
B32	USA	Female	Freelance Web Journalist	iPad 1

4 Findings and Discussion

The introduction of tablets appears to play a significant role in all the facets of users' everyday life. The particular IT artifact is used equally as a business tool, as a communal device, as a replacement for other computing devices, magazines and books, and as a gadget, destined for multimedia and content consumption. However, our findings illustrate that it is also seen as something one simply has to own. These roles are not mutually exclusive; in contrast, tablets play interchangeably all the aforementioned roles, holding a symbolic significance for the users. Next, we present an account of the different facets of meaning individuals construct around the specific IT artifacts, by accessing the authors' interpretations as found in their blogs. Finally, we examine how the various meanings affect user emotions and the overall user experience by building upon the combined UX framework.

4.1 The Roles of the Tablet

The majority of the blog authors hold upper level managerial positions within companies or businesses. The nature of their job demands that they attend meetings frequently and travel often. This suggests that their lives are organized around a fairly unstable schedule. As far as the IT artifact is concerned, almost all of them report increasing needs for continuous connectivity, speed and mobility.

In many occasions the tablet facilitates work-related processes having concurred a position within the business life. Even though it is not regarded as a 'primary workhorse', since several obstacles still exist (e.g., lack of Flash), the majority of authors report using the iPad as *an extension of their business life*. Offering a satisfactory work environment for basic tasks and being extremely portable, they consider that it allows them to remain productive when they are on the move or out of the office, providing them with the necessary mobility. Indeed, while commuting and during meetings, business needs are very different from those of the pure desktop environment. Most often they relate to giving or attending presentations, managing information, e-mails and messages. Such tasks, even though they are time consuming and often demand preparation beforehand, are considered as light work. While previously such professionals had to carry around their laptops, now they prefer to use the tablet. Offering instant access to ubiquitous information, supporting most content consumption needs and representing familiar use paradigms, the tablet serves the business needs of the on-the-move professional in a more natural way without imposing its presence in the process. At the same time, being a lightweight device, the iPad gains an additional advantage over the average laptop, by changing users' perceptions on mobility and diminishing the prevailing sense of a chore:

B30: *"the fact that it's instant-on and you can flip the screen around to show a colleague a web page, a chart, or a document just like you would a piece of paper gives the iPad a much more natural feel and a huge advantage over a traditional laptop (…). On a business trip a couple months ago (…), I left my laptop in the hotel room and only carried the iPad. It was ultra-convenient to just flip out the iPad to compare calendars for follow-up meetings, show off a few charts, and co-surf a few web sites without having to whip out a laptop or fire up a projector. It was also liberating to walk in without a laptop bag slung over my shoulder."*

When it comes to IT artifacts, their use is largely dependent upon one's needs and the use context. When the focus changes *from the business environment to the everyday*, the way users experience the tablet changes dramatically. Looking back to Wright et al.'s (2005) conceptualization of user experience, this is largely due to its spatiotemporal thread. Since user experience is situated to a time and place, user perceptions are more than likely to change depending on the context. The authors' constructions illustrate that in the home environment, during family or leisure time, users change the way they interpret the tablet and assess it as *a multimedia and content consumption station*,

substituting a bundle of objects and/or devices. Beyond working hours, users interact with tablets for casual internet browsing, looking at family photos, keeping up-to-date with the news, even turning the tablet into a gaming console. Moreover, tablets are being used interchangeably for numerous things:

B3: *"doing a keynote presentation [for teaching and preaching] from iPad is really awesome (…). It would be wrong not to admit that using these devices is just plain fun. Whether it's reading Winnie the Pooh to Haylee, playing "Memory Cards" with our family, or teaching Dana how to play solitaire, we've had a good time."*

As far as the concept of substituting other devices and objects, in most occasions, this refers to the netbook and the laptop, specifically for light work while within the home environment:

B27: *"it has replaced my laptop (…) everywhere in the house - I used to drag my laptop all over my house to "work" which is code for check email or some other minimalistic effort. The iPad works great in this capacity and if you spend most of your time online, working on documents, responding to email or any social networking ditch the hot lap",*

However, first and foremost, many consider it as a reading platform:

B9: *"I read in the evening outside while mosquitos were sucking me dry, I read in bed, next to the pool, while on the loo and at the beach. Yes, at the beach. I even read books while sitting in the sun, with my shades on. I know a lot of people complain and say you can't read that well in the sun so I tried it out. Fact is, even if the sun shines directly at the iPad you can still read it. A book reflects too much sun when you hold it directly in the sunlight. The biggest problem with reading in the sun: it is just too damn hot."*

Tablets manage to transcend all facets of contemporary human living; from the office to the home environment, changing established behaviors, like reading books and using laptops as portable devices. Drawing from the authors' accounts, this change in behavioral patterns is thanks to the increased portability and the intuitive interaction. Yet, additional factors come into play; the tablet can easily switch roles and turn from a gaming console into a library, with increased capacity (as far as the number of books is concerned). Together with its ease of use and the application store's ecosystem, which produces continuously new applications, the latter considered quite affordable and accessible, the tablet is considered as a *family device* satisfying basic computing needs.

The tablet is also considered as a *communal device*, offering opportunities for *sharing and socializing* with others. As discussed, it can be a vehicle for looking up information, playing games, viewing family photos etc. What is important is that, according to authors' constructions, the tablet opens up possibilities for strengthening the social character of these activities. In the past, physically sharing content with another suggested handing over a mobile phone, passing around a laptop or hanging over one's shoulder to share a screen. However, the mobile phone is considered as a more personal device and handing it over brings about a sense of insecurity. Similarly, physically sharing content by passing around a laptop or gathering in front of a desktop computer is described as unpleasant, the first being relatively heavy or often attached to cables and the second limiting users' personal space. As one of the authors wrote:

B24: *"The iPad provides wonderful opportunities for "social" internet surfing. Rather than huddling around a monitor or passing back and forth that tiny iPhone, the iPad is wonderful for sharing the Internet with others - we used it the other day to show my 80 year old mom my daughter's prom pictures, and it was great for passing around, as the screen is dazzling and it is perfect for people to hold for short periods."*

The tablet's overall size is considered ideal for sharing, while its weight and form don't pose significant limitations for passing it around from one to another, much like people pass around, for instance, kitchenware around the dinner table. In addition, as the use of the tablet is done concurrently, rather than successively, it allows its integration into users' life, without disrupting their social life.

Instead, users use it in a way so as to include others in the activity, interestingly enough senior citizens, too. Quoting another blogger's writings:

B27: *"Somehow, passing a tablet around and swiping back/forth seems very simple and surprisingly non-geek."*

it is because the iPad, an otherwise innovative computing device, builds upon natural and familiar interaction modalities, that it is not considered as something sophisticated. Instead, by being intuitive, it addresses a wider demographic.

4.2 Assessing the Facets of Meaning

One of the most interesting concepts is that many authors developed strong ties with the specific IT artifact. While attachment is a familiar concept within consumer research, often attributed to the product's potential to express one's identity or group affiliation, to preserve memories etc. (Mugge, Schoormans, & Schifferstein, 2008), our study shows that another form of attachment prevailed, as the authors in many occasions developed an almost *intimate relationship*, which they themselves or members of their social circle described it using metaphors, typically used for a *significant other*:

B12: *"I'm not an Apploid. You know – those people who (…) have a Bill Gates dartboard. Those people are a little scary (…). I have two desktop PC's, a laptop, a netbook, a Kindle, an Android phone … and an iPad. But it's that iPad that my wife refers to as my "mistress." If you haven't spent a few minutes playing with (or "fondling," as the Missus calls it) an iPad, I won't try to describe the user experience."*

B17: *"I have had my iPad for 4 weeks or so and during that time it has hardly left my side – my wife is threatening to sue me for adultery, citing my iPad as co-respondent – I have promised to attend counseling sessions!"*

Users often develop strong feelings for their computing devices. Specifically for Apple users, such an attachment has been shown to relate to commitment and loyalty feelings to the particular brand, which has resulted to the term 'Cult of Mac' (Belk & Tumbat, 2005). Yet, in the case of the particular pool of users, this is not the case. While many of them have been Apple users in general, in most cases this only concerns the iPhone. Furthermore, first- and second-order constructions exhibit that they are not loyal to the brand, i.e., either the authors explicitly state that they're not devotees or evidence shows that their other devices are an assemblage of brands. Thus, we can conclude that these strong relationships are not related to loyalty or self-identification.

Some of the authors report using the tablet everywhere they go; while in the office, even when they have their laptops or desktops available, in coffee shops and at the beach, while in bed reading, or even choosing to retreat with it in their bedrooms, to privately enjoy interacting with the IT artifact. Such behavioral expressions reveal a strong attachment to the IT artifact, one that significantly resembles the one individuals develop with their loved ones. Drawing from Sternberg's theory of love (Sternberg, 1986), we can argue that their accounts reflect the triptych of intimacy – passion – decision/commitment. We see that the authors exhibit a commitment to the tablet by choosing it over other available computationally superior devices; they are passionate about it by being inseparable from it and using illustrative metaphors while describing it; and one could argue that requiring private time with an inanimate object, to peacefully enjoy the naturalness and the intuitiveness of the interaction, can be interpreted as a feeling of intimacy towards it. In short, similarly to Turkle's findings (2008), the authors project life onto the IT artifact, and interpret it as a *companion*.

All the while, the data reveal another form of the tablet's *symbolic significance*, without however the authors personalizing it at the same time. Focusing on the *expressive characteristics* users assign or recognize onto the tablet, we see that they primarily direct their attention to its aesthetics and its novelty as deriving from hedonic-related characteristics, referring primarily to the sensual thread of the experience. The most interesting descriptive terms we find are 'eye candy', 'sexy', 'cool', 'toy'

and ‘futuristic’, with the authors discussing the combination of metal and glass, the feel and form of the surfaces and the sharp and attractive design. Specifically, one author reflects feeling “*like Tom Cruise in Minority Report*” (B17) every time he touches the screen, while another writes that “*there’s definitely something about having a device (…) as sexy as the iPad*” (B18). These descriptions only rarely relate to pragmatic characteristics, as the authors discuss that the iPad is not capable enough:

B3: “*We have always had a lot of tech in the house. (…) And then I brought home the iPad. My wife and kids summed it up in 30 seconds. "Oh no, Dad bought another toy". (…) Later that week (…) I get home from work, and there's always a certain level of chaos at that time. But there was a new theme this week. (…) All the PCs and laptops are basically not being used. All the Macs are not being used. (…) I don't think I'll be buying any more desktops going forward. I don't think I'll even be buying any more laptops going forward. They've all been largely obsoleted (at least at my home) by a sleek $499 device that doesn't really have any right to be called a "computer" in the traditional sense. (…) The members of my family immediately gravitated to the new shiny thing - no prompting, no encouragement, no migration, etc. They are drawn to it like a moth to flame.”*

Industrial design literature illustrates that describing an IT artifact as ‘sexy’ or ‘cool’ is not uncommon; in the contrary, a recent study has shown that such descriptions often refer to computing devices whose materials combine glass and metal and whose surface is considered as glossy or sleek (Karana, Hekkert, & Kandachar, 2009). On the other end however, perceiving the tablet primarily as a ‘toy’, rather than as a ‘device’ or as a ‘tool’, suggests that the user perceives little usefulness in it:

B28: “I’m not alone in wanting my new – undeniably inessential – toy to feel good.”

Being drawn to an object because of its aesthetics and expressive characteristics has been examined by a number of disciplines. Postrel (2003) argues that aesthetics is “a universal desire”, not a mere luxury and that, today, products are being largely differentiated by style rather than by functionality. This concept is pertinent to the computing market as well; technological advances manage to effectively satisfy most users’ requirements, and more importantly, those of the average user (Tractinsky, 2004). As a result, users are correct, in expecting, and often taking for granted, that IT artifacts will succeed serving them well and that the available choices, found within a specific price and features range, will function equally well. According to Postrel (2003), this results in aesthetics being among the most important decision-making criteria and, finally, a medium for one to communicate one’s own taste. Concluding, it is evident that users with the financial capacity to obtain the particular tablet, who are interested in light-weight use and who value the expressive and aesthetical characteristics of the artifact, will admire it and obtain it *for the sake of possessing it* and using it.

4.3 Meaning and Emotions

Examining first the tablet’s interpretation as an extension of the working environment outside the office, we see that users directly relate the attribution of emotional value according to business-related concerns, focusing primarily on its pragmatic and behavioral characteristics. The authors highlight that the tablet allows them to remain productive while on the go and that several of its pragmatic qualities, specifically the tablet’s screen size, its portability and efficiency in a number of tasks, and its responsiveness, both in the beginning and during the interaction, exceeds their initial expectations and their personal concerns (Lazarus, 1991). In turn, the authors’ personal productivity and the overall better information management within a work-related context are ultimately translated into satisfaction and relaxation, a combination of pleasure and calmness (deactivation) according to core affect theory. While the first is self-explanatory, the second requires some further clarification; the empirical data provide evidence that the authors feel a sense of comfort and liberation when using the iPad over other devices because it allows them to perceive business-related processes less of an assignment (or a imposition).

As mentioned, appraisal and emotional value are directly related to one’s concerns and previously set goals. Even though the tablet can function as an extension of the business environment, empirical data

show that it cannot fully replace other superior computing devices for work-related purposes. As a result, individuals whose goal is to do so, i.e., use the tablet as a 'primary workhorse', while assessing its pragmatic qualities are faced with a feeling of disappointment, a facet of displeasure:

B13: *"So to make a long story short, I gave up and borrowed laptops (one per continent) to do all of my posts, including when I was covering our keynotes at TNW Conference. (…) in the near future at least, I will haul my laptop on any trip I go on where I'll be blogging. Zee is right – the thing just isn't a work laptop replacement."*

When users interpret the tablet as a substitute for a group of other computing devices and objects, the nature and intensity of emotions changes as well. The interaction concerns an entirely different set of goals; as the majority of users appear to aim at using the IT artifact for completing work of minimal effort, as a substitute for reading, for home entertainment and as content and multimedia consumption station, overall appraisal follows a different path. In these cases, we see that, as the tablet has for many users substituted the laptop within the home environment, user experience is directly linked to a feeling of bliss (pleasure). For contemporary users', mobility is not an issue that can be exhausted outside the home environment. Instead, as contemporary professionals are often required to carry out light work during their private life, they appear to seek maximum mobility within this context, too. As a result, using the tablet over the laptop allows them to navigate freely within their private space without the hassle of undocking devices, carrying semi-heavy objects, cables and so forth, which is interpreted as a sense of freedom, pleasing the users.

When using the tablet as an entertainment station, either for multimedia or gaming, the feeling of pleasure further intensifies, resulting in pleasure – activation. Specifically for adults, some authors report being astonished (activation) with the tablets capabilities firstly to support such activities, and secondly how this actually impacts on their personal behavioral patterns. Examining this in relation to Wright et al's framework (2005), the authors' constructions reveal that, following a process of sense making, they find a way to express their inner gamer, and appropriate the user experience. All the while, as they report feeling astonished or fascinated (pleasure), one can argue that, by appropriating the experience, the authors may change their sense of self, seeking to experience such intense emotions in the future by identifying themselves as gamers. At the same time, the tablet is used as a children's gaming device. Through their keens' first order constructions, this activity is, on the one hand, a fun activity (activation – pleasure) for the children themselves, while, on the other hand, a joy (pleasure) for their parents and relatives. While reflecting and recounting their experience with the tablet as a gaming device, authors discuss their fascination (pleasure) on its ability to be easy to use and intuitive, both for themselves and for their children. Indeed, studies offer evidence for a direct link between ease of use and pleasure (van Schaik & Ling, 2008). Moreover, the same accounts, i.e., of being fascinated with the device's ease of use, have been documented for senior citizens as well:

B20: "The second surprise for me was that she instinctively swiped to the next photo. This is an interaction she is not used to, but it somehow came natural (or she'd seen this on TV, she wasn't sure). (…) I have to say I was surprised with how easily my mom could find her way around different apps on this new device, with all its new interaction paradigms."

In short, an otherwise perceived as 'futuristic' and innovative IT artifact, is assessed by the particular pool of authors as quite natural and easy to use device for a range of demographics. This facilitates its interpretation as an artifact which can fulfill one's family needs, thus resulting into feelings of pure pleasure, bliss, fascination and astonishment, which, following the core affect theory, range from pleasure – activation to pleasure, respectively.

As far as the authors' attachment to the tablet is concerned, and specifically that of the love to a companion, our empirical data show that in most cases, the authors directly report to love the particular IT artifact, which is on its own a feeling mapped as an activation – pleasure emotion. Second-order constructions reveal that, aside the emotion of love, they also exhibit a feeling of passion, which can be approached as excitement (activation), as they document vivid descriptions – and even exaggerated metaphors - of their user experience.

We also see that the authors' sense of attachment occasionally succeeds in shifting their previously clearly stated perceptions; having identified themselves as skeptics, after their interaction with the tablet, they devote themselves to it and strive to find additional ways to integrate it even further into their everyday processes. In addition, others, by witnessing the attachment others (e.g., family members) are experiencing and by changing their sense of self, appropriate the experience and develop emotions of love for the tablet, and in some occasions perplexed emotions for the brand itself:

B3: I broke down and bought a non-3G iPad. I just was too damn curious (…). Brought it home, set it up, downloaded some interesting stuff, and had a blast. Big geek fun. (…). I then went off to work for the week, and left it home. (…) It all flashed through my eyes. I don't think I'll be buying any more desktops going forward. I don't think I'll even be buying any more laptops going forward. They've all been largely obsoleted (at least at my home) by a sleek $499 device that doesn't really have any right to be called a "computer" in the traditional sense. Sure there's a handful of tasks that I still prefer a real computer, but – amazingly – that list has now shrunk dramatically. In less than a week (…). I now have this strange love/hate relationship with Apple. And I think it won't be long before I'm forced to make another trip back to the Apple store".

In this particular occasion, the author admits to an initial reluctance to acquire the tablet and that, in reality, even now doesn't really see it as a computational device, nor does his family (see previously: *"Oh no, Dad bought another toy"*). Yet, acknowledging the tablet's effect on himself and on his family (see previously: "*they are drawn to it like a moth to flame*"), a feeling state of non-enthusiasm or indifference, has quickly shifted to this "*strange love/hate*" emotion with the brand. As a result, we see that one's love toward a product can change one's opinion regarding the brand, and effectively lead to feelings of pleasure.

Regarding the symbolic significance communicated via expressive characteristics, most often the authors related the attribution of meaning to the aesthetics of the IT artifact, admiring it as 'an object to own'. We see that the impact of this symbolic significance, i.e., possession of a beautiful artifact, plays an important role on how users experience changes in their feeling states. They document being charmed by the tablet, whose overall look and form simply make them desire it. They are fascinated and amazed by the construction of the device and the combination of its materials and compare it to previously owned devices. Desire is mapped as an activation – pleasure feeling state, while fascination and amazement are mapped within the pleasure quadrant. Such accounts exhibit a strong linkage between the sensual and the emotional thread of the experience, i.e., between the aesthetics of the tablet and user emotions. Extant literature has repeatedly found such a connection; however, in our study this link takes a different meaning as users refer directly to their user experience and interaction with the IT artifact as 'superior', or even 'utopian', and simply desire to own and use the tablet, even though, it is *"undeniably inessential"* (B28). It is in such cases that the design of computing devices is considered as "irresistible" (Overbeeke, Djajadiningrat, Hummels, Wensveen, & Frens, 2005).

5 Conclusions

The paper examined users' interaction with tablets, in their everyday, assessing narratives ranging from the business to the personal environment, aiming to investigate the various interpretations and the impact of meaning on the emotional thread of user experience. While extant literature has examined the relationship between users and their computing devices, technological advances continuously reshape human-computer interaction, and previously perceived as specialized devices, now transcend the boundaries between the work and the home environment, and are used interchangeably in a myriad of ways. Such is the case with tablets. The launching of the iPad has popularized this class of devices across almost all market segments, shifting users' perceptions. To this end, the present study has added its insight into these newly developed meanings and emotions around the tablet by examining users' narratives. While in most cases, the users hold upper level IT-related or management-related positions, the investigation of the particular pool allowed us to examine

their experience as it unfolded from the physically static work environment, to the context of 'office-on-the-move', to the privacy of their personal environment.

Our study shows that the tablet functions as an extension of the office, as a multimedia (or content consumption) station and as a communal device, adding a social character to activities previously perceived as privacy risks, as for example sharing one's mobile phone for internet browsing. As previous studies have shown, users develop a strong sense of attachment to their tablets; yet, instead of users feeling at one with the tablets (Turkle, 2007), or assessing them as an extension of the self (Turkle, 2008), in the case of the tablet, they personalize them and interpret them as their companions. In other cases, users' attachment to the tablet is the result of an experience of meaning of symbolic significance, i.e., possession of a beautiful artifact, which is enabled mainly from the tablets' expressive characteristics and the aesthetics of its design elements. All these meanings assigned to the tablet have an evident impact on users' emotional experience. The tablet, as an extension of the office, produces feeling states of pleasure – calmness. While the tablet enters the user's everyday life, being used at home, either for light work or for pure entertainment, the emotional experience changes to pleasure, pleasure – activation and pure activation, with the user feeling pure astonishment and excitement. As the user develops a sense of attachment to the tablet, exhibits feelings of love, which further intensifies her/his emotional experience with the IT artifact.

Our findings show that some computing devices can be used intensely and that users may prefer them over others, computationally superior. Among the main reasons, one can find that these devices are simply compelling and irresistible (Overbeeke et al., 2005) and that modern, average users, may sacrifice computational power and capabilities for the sake of portability, intuitiveness and a superior user experience. As a result, satisfying users' higher needs (e.g., aesthetics, engagement, relaxation) may be more important as computing devices are now entering our social and private life.

Acknowledgements: This research has been co-financed by the European Union (European Social Fund – ESF) and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: Heracleitus II. Investing in knowledge society through the European Social Fund.

References

Belk, R. W., & Tumbat, G. (2005). The Cult of Macintosh. *Consumption, Markets and Culture, 8*(3), 205-217.

Boland Jr, R. J. (1979). Control, causality and information system requirements. *Accounting, Organizations and Society, 4*(4), 259-272.

Cockton, G. (2008). *What Worth Measuring Is*. Paper presented at the International Workshop on Meaningful Measures: Valid Useful User Experience Measurement (VUUM 2008) Toulouse.

Desmet, P. M. A., & Hekkert, P. (2007). Framework of product experience. *International Journal of Design, 1*(1), 57-66.

Forlizzi, J., & Battarbee, K. (2004). *Understanding experience in interactive systems*. Paper presented at the 5th conference on Designing interactive systems: processes, practices, methods, and techniques, Cambridge, MA, USA.

Gadamer, H.-G. (1976). *Philosophical Hermeneutics* (D. E. Linge, Trans.). Berkeley, Los Angeles, London: University of California Press.

Glaser, B. G., & Holton, J. (2004). Remodeling Grounded Theory. *Forum: Qualitative Social Research, 5*(2).

Hassenzahl, M. (2007). *The hedonic/pragmatic model of user experience*. Paper presented at the COST294--MAUSE affiliated workshop, Lancaster, UK.

Karana, E., Hekkert, P., & Kandachar, P. (2009). Meanings of materials through sensorial properties and manufacturing processes. *Materials and Design, 30*(7), 2778-2784.

Keltner, D., & Gross, J. J. (1999). Functional Accounts of Emotions. *Cognition and Emotion, 13*(5), 467-480.

Law, E. L.-C., Vermeeren, A. P. O. S., Hassenzahl, M., & Blythe, M. (2007). *Towards a UX Manifesto*. Paper presented at the COST294--MAUSE affiliated workshop, Lancaster, UK.
Lazarus, R. S. (1991). *Emotion and adaptation*. New York, USA: Oxford University Press.
McCarthy, J., & Wright, P. (2004). Technology as experience. *Interactions, 11*(5), 42-43.
Medeiros, A. C. B., Crilly, N., & Clarkson, P. J. (2008). *Affective Response to ICT Products in Old Age*. Paper presented at the Emotion in HCI – Designing for People. 2008 International Workshop.
Mugge, R., Schoormans, J. P. L., & Schifferstein, H. N. J. (2008). Product attachment: design strategies to stimulate the emotional bonding to products. In H. N. J. Schifferstein & P. Hekkert (Eds.), *Product Experience* (pp. 425-440): Elsevier.
Nardi, B. A., Schiano, D. J., Gumbrecht, M., & Swartz, L. (2004). Why we blog. *Communications of the ACM, 47*(12), 41-46.
Orlikowski, W. J., & Baroudi, J. J. (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research, 2*(1), 1-28.
Overbeeke, K., Djajadiningrat, T., Hummels, C., Wensveen, S., & Frens, J. (2005). Let's make things engaging. In M. A. Blythe, K. Overbeeke, A. F. Monk & P. C. Wright (Eds.), *Funology. From Usability to Enjoyment*. New York, Boston, Dordrecht, London, Moscow: Kluwer Academic Publishers.
Postrel, V. (2003). *The Substance of Style. How the Rise of Aesthetic Value Is Remaking Commerce, Culture, and Consciousness*: HarperCollins e-books.
Prasad, A. (2002). The Contest Over Meaning: Hermeneutics as an Interpretive Methodology for Understanding Texts. *Organizational Research Methods, 5*(12).
Prasopoulou, E., Pouloudi, A., & Panteli, N. (2006). Enacting new temporal boundaries: the role of mobile phones. *European Journal of Information Systems, 15*, 277-284.
Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology, 39*(6), 1161-1178.
Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review, 93*(2), 119-135.
Tractinsky, N. (2004). *Toward the study of aesthetics in information technology*. Paper presented at the International Conference on Information Systems, ICIS 2004 Washington, DC, USA.
Turkle, S. (2007). *Evocative Objects. Things We Think With*. Cambridge, Massachusetts. London, England: The MIT Press.
Turkle, S. (2008). *The Second Self. Computers and the Human Spirit* (20th ed.). Cambridge, Massachusetts. London, England: The MIT Press.
van Schaik, P., & Ling, J. (2008). Modelling user experience with web sites: Usability, hedonic value, beauty and goodness. *Interacting with Computers, 20*(3), 419-432.
Vermeeren, A. P. O. S., Kort, J., Cremers, A. H. M., & Fokker, J. (2008). *Comparing UX Measurements, a case study*. Paper presented at the International Workshop on Meaningful Measures: Valid Useful User Experience Measurement (VUUM 2008) Toulouse.
Walsham, G. (1995). Interpretive case studies in IS research: nature and method. *European Journal of Information Systems, 4*(2), 74-81.
Wright, P., McCarthy, J., & Meekison, L. (2005). Making sense of experience. In M. A. Blythe, K. Overbeeke, A. F. Monk & P. C. Wright (Eds.), *Funology. From Usability to Enjoyment*. New York, Boston, Dordrecht, London, Moscow: Kluwer Academic Publishers.