
Article:
Zamani, E.D., Pouloudi, N., Giaglis, G. et al. (2021) Accommodating practices during episodes of disillusionment with mobile IT. Information Systems Frontiers, 23 (2). pp. 453-475. ISSN: 1387-3326

https://doi.org/10.1007/s10796-019-09972-4

Information Systems Frontiers
https://doi.org/10.1007/s10796-019-09972-4

Accommodating Practices During Episodes of Disillusionment with Mobile IT

Efpraxia D. Zamani[1] · Nancy Pouloudi[2] · George Giaglis[3] · Jonathan Wareham[4]

Abstract
This study investigates how tablet users react when technology falls short of their expectations. We deploy a data/frame model to study this process and investigate resistance-related reactions and the deployment of accommodating practices at the individual level. Analyzing user blogs that provide narratives on user interaction with tablets, we identify triggers of episodes of disillusionment and illustrate five sensemaking paths that users follow, eventually leading to one of three practices: 1) users choose to defer tasks until the situation changes, or they abandon the platform altogether; 2) they develop workarounds at different levels of proficiency; or 3) they proceed by reframing their expectations of the platform. By revealing user decision-making process during episodes of disillusionment, the findings contribute to information systems post-adoption research. At a practical level, the findings inform IT artifact and application design by offering insights on how users process discrepancies between their expectations and actual use experience.

Keywords Case study · User behavior · IT artifact · Sensemaking · iPad

1 Introduction

The literature on user behavior is characterized by the duality of adoption and resistance. User adoption has attracted significant interest in recent years and studies in this area aim to increase the level of acceptance and to indirectly facilitate the success of the implementation (Krishnaraju et al. 2016). These studies focus on perceptions prior to adoption and emphasize the relationships between underlying constructs that could either positively or negatively influence an adoption decision. As Riemer et al. (2012) argued, such studies often study adoption in organizational settings, and they usually examine adoption as a punctuated decision point rather than a process.

The opposing flank of this duality is reflected in the growing body of literature on post-adoption. As others have noted, "[u]sers' post-adoption behaviours have emerged as a key topic in information systems (IS) research", most likely because "the long-term viability of a new IS hinges more on users' continuance behaviour than their initial adoption decisions" (Venkatesh et al. 2011). This has also given rise to an interest in resistance-related behavior research. Several studies have explored user workarounds or acts of resistance, focusing on understanding how and why users resist or adapt to the implementation of new information systems (e.g., Beaudry and Pinsonneault 2005). The common denominator across the majority of these studies is the focus on enterprise-level systems in an organizational context. Indeed, whilst there is a large body of literature on user adoption within numerous settings, research on post adoption behavior is more focused on the organizational context (Bhattacherjee and Premkumar 2004), while studies examining personal use tend to

✉ Efpraxia D. Zamani
e.zamani@sheffield.ac.uk

Nancy Pouloudi
pouloudi@aueb.gr

George Giaglis
giaglis.g@unic.ac.cy

Jonathan Wareham
jonathan.wareham@esade.edu

[1] Information School, The University of Sheffield, Regent Court, 211 Portobello, Sheffield S1 4DP, UK

[2] Department of Management Science and Technology, Athens University of Economics and Business, 76 Patission Str, GR-10434 Athens, Greece

[3] Institute For the Future (IFF), University of Nicosia, 28th October 24, 2414 Engomi, Cyprus

[4] Department of Operations, Innovation and Data Sciences, ESADE, Avenida de Torreblanca, 59, 08172 Sant Cugat, Spain

Published online: 02 December 2019

emphasize more the role of habit (e.g., Krishnaraju et al. 2016), emotions and automatic behavior (e.g., Ortiz de Guinea and Markus 2009) among others. This is not unexpected, considering that many of the investments are costly and the reluctance of individual users to adopt an enterprise application, in the aggregate, can pose a risk for the entire organization.

However, technology is becoming increasingly ubiquitous, not restricted to work or organizational settings, but pervading both personal and professional lives (Sprenger et al. 2017). Portable and mobile IT devices are being used in ever more diverse and changing contexts, with new computing genres altering the landscape of daily IT use. This has led to the concept of consumerized IT, that reflects the reality of privately owned smart devices (phones, tablets, watches or other wearable technologies) being used widely within organizations (Niehaves et al. 2012), and within diverse personal ICT scenarios. Much research over the recent years has been focused around the impact of consumerized IT on the organization, e.g., from governance-related issues (Gregory et al. 2018) and risk with Bring-Your-Own-Device (BYOD) schemes (Weeger et al. 2018), to identifying adoption patterns and diffusion of consumerized IT within the organization through innovative research methods (Dang-Pham et al. 2019). Yet, little is known about what happens when technology seems to fail use expectations, and what are the behavioural outcomes since in many cases, when it comes to BYOD, support and maintenance are lacking (Weeger et al. 2018).

Specifically, we study individual post-adoption behaviors in instances of disillusionment; that is, gaps between expectations and perceived realities in use. We consider this to be of increased interest, because expectations about a given information system may very well a) lie beyond performance and usability aspects, but also incorporate issues of e.g., satisfaction and hedonism, and b) change over the course of time and after having sufficiently interacted with the IT artifact.

The premise of our research is that, understanding the triggers causing a disparity between one's expectations and the system's actual performance, how these are understood and ultimately handled, can offer useful insights into user accommodating practices for a breadth of ICT (Fig. 1). Accordingly, our research question is, what are the sensemaking processes that guide accommodating practices, when users experience disillusionment with ICT?

To address this question, the paper is organized into six sections. First, we provide a brief overview of the literature. We then discuss sensemaking in cases of disillusionment, and then present the theoretical framework upon which our study builds. In the third section we detail our study's research approach. Thereafter, we introduce our findings with respect to the nature and the handling of episodes of post adoption disillusionment and discuss them in relation to users' sensemaking while interacting with IT. The paper concludes by proposing directions for future research as well as discussing the study's contributions.

2 Background Literature

2.1 Working with and Around Technology

Recent IT artifacts such as tablets and other smart devices are complex platforms, relying heavily upon an ecosystem formed by developers, designers, users and the principles that bind them together. At the same time, computing devices are characterized by the presence or absence of features, which stem from designers' choices which may or may not concur with user expectations (Griffith 1999). As previous research has shown, users tend to use only a portion of the available features of IT applications and information systems post-adoption – out of habit or due to routinization (Jasperson et al. 2005). As such, even though technological advances have made interaction with technology easier, the vast heterogeneity of applications can play both constructive and destructive roles in user experience (Orlikowski 2000).

As a result, users often adopt the "path of least resistance" around the obstacles they are faced with when coming into contact with information systems (D'Adderio 2011, p. 215). In some instances, users may seek to bypass a "designed-in behavior" (Koopman and Hoffman 2003, p. 72) or develop harmless workarounds (e.g., Ferneley and Sobreperez 2006) with the aim of smoothing out their everyday interaction. For example, due to design flaws and several external factors, they may resort to small-scale cheats and shadow systems so as to gain "a better grip on information and save time" (Huuskonen and Vakkari 2013, p. 380).

Nevertheless, as far as workarounds are concerned, these are often framed as acts of resistance toward technology. Boudreau and Robey (2005) investigated user behavior and used reinvention practices as evidence of interference with the implementation of IT. Alvarez (2008) approached efforts to adapt and reshape technology as acts of resistance against newly imposed

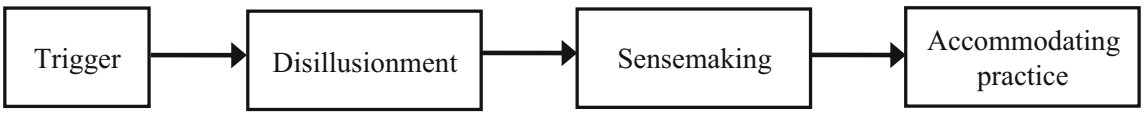


Fig. 1 User decision-making during episodes of disillusionment

constraints. Contrary to such conceptualizations, Markus (1983) suggested that 'resistance' as a term is often overstretched, being examined with a stronger focus on the observed behavior and a weaker focus on one's intention. In addition, she contended that resistance can only be described as such solely when there are conflicting objectives. Indeed, Ferneley and Sobreperez (2006) examined workarounds as a subsequent phenomenon of resistance-related behavior and suggested that, while workarounds are certainly a deviation from the designed use, they should not necessarily be conceptualized as negative versus positive outcomes. Others illustrated that essential workarounds, which are stable and persistent over time, despite being rule-bending, may "be more than acts of resistance" (Azad and King 2011, p. 13); users may deploy them so as to complete day-to-day work-related activities, without aiming to resist to technology or any official rules. Therefore, acknowledging the relational nature of resistance, workarounds, whose purpose is to ameliorate or modify the use of a given technology, could be considered as evidence of one's effort to adopt or adapt to an information system in a pragmatic, if not constructive, fashion.

In this study, we approach disillusionment in a similar manner to Bhattacherjee and Premkumar (2004). The authors argue that oftentimes, users form their initial expectations based on "exaggerated (by vendors) or unrealistic" promises. After having gained sufficient hands on experience with the IT artifact, it is possible that there may be a tension between their expectations and reality and a positive or negative disconfirmation, "which then determines continued product usage or non-usage" (Bhattacherjee and Premkumar 2004). However, there is a difference between the disconfirmation construct and what we call 'episode of disillusionment'; while disconfirmation can be positive or negative, depending on initial expectations, we focus on those instances when technology fails user expectations, i.e., when disconfirmation is negative.

In turn, we define 'accommodating practice' as the acts that users carry out in order to interact with the IT artifact at hand, successfully or unsuccessfully, in the prescribed or in a novel manner. A similar concept to 'accommodating practice' is the 'adaptation effort', studied by Beaudry and Pinsonneault (2005) through the lens of coping theory. The authors use this term in order to refer to how users behave and adapt to IT events "in order to cope with the[ir] perceived consequences" (Beaudry and Pinsonneault 2005). Adaptation efforts may include avoidance, selective attention, passive acceptance, adaptation of one's self and adjustment of habits to the IT artifact, modifications to procedures or even tempering with the IT's functionalities. The difference between 'adaptation efforts' and 'accommodating practices' lies with the stimulus that occurs prior to this behavioral response, i.e., the preexisting conditions triggering a specific behavioral response. The central tenet of coping theory is that the individual seeks a coping mechanism to overcome extremely stressful incidents and encounters (e.g., an imminent threat to one's life) (Lazarus 1993). Under such conditions, individuals appraise the encounter, evaluating whether it poses some threat to their well-being and whether they can do something so as "to overcome, prevent harm or restore [a] troubled person-environment relationship" (Nach and Lejeune 2010, p. 620). They then proceed on with adopting a problem-focused coping strategy or an emotion-focused one. Problem-focused coping refers to one's effort to change the situation, whereas emotion-focused coping refers to changing "the way the stressful relationship is attended to (…) or the relational meaning of what is happening" (Lazarus 1993, p. 238).

In contrast, in our study, an accommodating practice describes user behavior in a broader manner. It refers to the way in which users may eventually adopt or adapt themselves to the IT artifact in order to have a successful interaction, without excluding the possibility for opting out altogether from interacting with it for a particular set of tasks and for which the IT artifact was originally destined. Moreover, for our study, accommodating practices are envisaged to occur during less stressful occasions and while the implementation of a new IT artifact takes place under the user's volitional control, which minimizes whatever threat a user may experience due to technology. We therefore consider essential the use of a different term in order to account for all types of episodes of disillusionment, i.e., those which may be indeed stressful and those which may be harmless and unremarkable.

Further to this, it must be noted that most prior research on resistance has examined its drivers as well as various typologies of the workarounds (e.g., Bagayogo et al. 2013; Boudreau and Robey 2005), but not the processes underlying them. In short, extant literature is more focused on the outcomes and the impact of resistance-related behavior, rather than on the process through which users decide to develop some form of workaround. To address this gap, we explore users' sensemaking processes during episodes of disillusionment, that is, users' sensemaking in order to understand how they negotiate disparities between their expectations and their actual interactions.

2.2 Sensemaking During Episodes of Disillusionment

Making sense, or sensemaking, is the process through which people seek to improve their understanding during unpredicted events, or to interpret occurrences of others' behaviors (Klein et al. 2007; Röth and Spieth 2019). In essence, it is the active and purposeful exploration of a problematic situation (Weick 1988), such that the situation is not only transformed into something that can be explicitly understood, but that also allows one to adopt a course of action. As a result, sensemaking is triggered when one is faced with an

inadequate understanding of a given situation (Klein et al. 2007), recognizing that the available information is either insufficient or inconsistent.

Because people's confrontation with problematic events is transversal, there are many approaches to examining sensemaking across a variety of academic disciplines. For Dervin, sensemaking is situational, and occurs as individuals bridge the gaps in information and satisfy their needs in a specific use scenario (Dervin 1983). Klein et al. follow a different approach and propose a bidirectional model of fitting available information (data) into the mental representations (frame) of a situation, for investigating individuals' sensemaking under unfamiliar or uncertain conditions, i.e., anomalies, which they call 'framebreaker situations' (Klein et al. 2006a, b; Klein et al. 2007). This approach supposes that the frames can help the sensemaker in defining what may be seen as useful data and, in turn, how these can be "structured for mental processing" (Pirolli and Russell 2011, p. 5). Therefore, for Klein et al., sensemaking builds upon "backward-looking processes [for] forming mental models that explain past events and forward-looking mental simulations that predict how future events will unfold" (Pirolli and Russell 2011, p. 5). As a result, inconsistent information or ill-fitting elements can be explained away "when they are fitted into a structure that links them to other elements" (Klein et al. 2007, p. 118).

Brown and Newman (1985) argued that accessing user understanding offers insights to designers aspiring to create better information systems and technological products. Yet, the opportunity to read into user understanding arises most often when one faces the violation of initial expectations, as it triggers sensemaking (Griffith 1999). In other words, it is sensemaking that can help us appreciate users' accommodating practices, interpret the way users adapt their interaction to what is imposed by the information system, and understand the workarounds they develop or the reasons for which they may abandon a given technology altogether.

Although sensemaking is mostly associated with Weick's work, we consider the Data/Frame theory to be the best suited perspective for our research for three reasons. Sensemaking as introduced by Weick, is seen as a social process, focused at the organizational level (Weick 1995), whereby organizational members attempt to make sense, individually or collectively, "of complicated and dynamic information" (Pirolli and Russell 2011, p. 5). In doing so, the organizational structures and processes are of increased importance as they are used to frame their initial interpretation of events and their initial understandings. Further, sensemaking in this context builds on information sharing and coordination with other organizational members (Weick 2010). On the other hand, as we will show later, the Data/Frame theory accounts formally for the individual's preconceptions and expectations and views sensemaking not as mere awareness, but instead as the complete set of "the ways and means of achieving [a desired] outcome" (Pirolli and Russell 2011, p. 5). Most importantly, the Data/Frame theory has at its core the framebreaker situation, i.e., the anomaly that causes disillusionment with the technology and it is tightly coupled, on the one hand, with the user response to the anomaly, and on the other hand, the possible consequences stemming out of these (i.e., accommodating practices) (Malakis and Kontogiannis 2013). Finally, as the Data/Frame theory is one that builds on macrocognition, it allows us to cast a wider net in considering possible factors influencing one's decision-making, situation awareness, planning, problem detection, option generation and expertise, and therefore sensemaking processes (Klein et al. 2000).

2.3 The Data/Frame Theory of Sensemaking

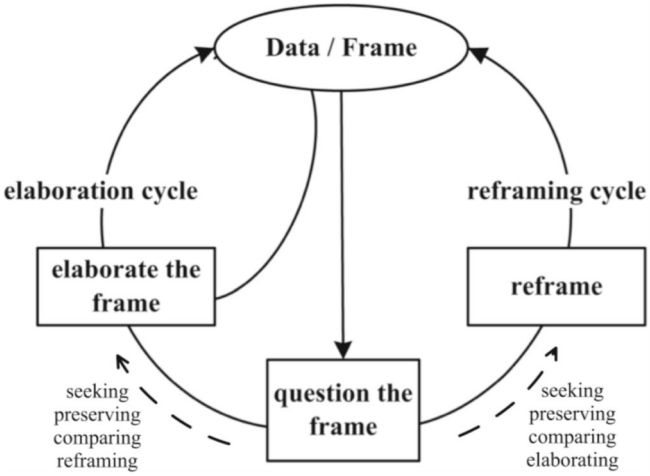
The Data/Frame theory of sensemaking builds upon two main concepts: data and frames. Data represent any information contained within a given context, readily available or produced by the sensemaker her- or himself while attempting to make sense of what takes place. Data constitute elements of the social environment or situation (Klein et al. 2006b), which formulate the initial frame, and they can be both abstractions from, or distortions of, perceived reality (Klein et al. 2007). In essence, when individuals attempt to make sense of the unfolding of occurrences and events, they proceed by transforming these events into cues and propositions, which in turn feed the sensemaking process.

Frames are the mental representations (Elbanna and Linderoth 2015) and denote the possible hypotheses linking the data between them (Klein et al. 2006b), enabling the sensemaker to understand the events (Röth and Spieth 2019). In other words, a frame is defined as the structure that describes and explains the relationships between the data, and that helps the sensemaker in searching for additional data (Mesgari and Okoli 2019). Therefore, sensemaking entails the construction or deconstruction of one or more frames, and the symbiosis of the frame with the data, since "[f]rames shape and define the relevant data, and data mandate that frames change" (Klein et al. 2006b, p. 88). Disillusionment can be better understood and addressed when the data eventually lead to the identification of a frame and can be fitted within it. In turn, the initial frame and any subsequent ones point to the most useful data and/or to a need to pursue additional data.

The continuous line traces the two sensemaking cycles. The dashed line represents the possible sensemaking process nesting within each cycle.

This iterative process may lead to two, equally possible, sensemaking cycles (Fig. 2). The elaboration cycle includes the enrichment of the initial frame or a refined understanding. The reframing cycle suggests revising one's initial understanding by examining its fit with the available data (Klein

Fig. 2 Sensemaking cycles



The continuous line traces the two sensemaking cycles. The dashed line represents the possible sensemaking process nesting within each cycle

et al. 2006b). These cycles can be seen as "reasoning paths" (Moore and Hoffman 2011, p. 147) and involve six different, non-sequential, functions: questioning the frame, elaborating the frame, preserving the frame, comparing frames, seeking a frame, and reframing. As the individual is faced with an episode of disillusionment, he or she observes an anomaly within the initial frame, which may relate to some failed expectations or, more generally, a mismatch between the data and the frame; as a result, the individual may begin questioning the frame (Sieck et al. 2007). Such a questioning may lead to the elaboration of a frame, during which the individual has the opportunity to identify additional data, reject other that may seem unrelated or obsolete and develop new hypotheses linking them together; this may result in "an enriched frame or a different one [possibly] requiring additional questioning" (Moore and Hoffman 2011, p. 148). Further, it may lead to the reinterpretation of the data (Mesgari and Okoli 2019).

Nevertheless, the individual may arrive at identifying specific information, or purposefully attempt to look for data, either or both of which may act as 'anchors' so that the elicitation of an initial frame is feasible; this can be described as seeking a frame (Sieck et al. 2007). It is still possible that the sensemaker considers and juxtaposes several, different frames, the nature of which may depend on the particular episode and/or the background of the sensemaker (Malakis and Kontogiannis 2013; Moore and Hoffman 2011). Equally so, the sensemaker may find her- or himself preserving a flawed or incomplete interpretation (Klein et al. 2007), assuming (s)he considers it plausible. In turn, the sensemaker may choose to further enrich this understanding, thus leading her/him to elaborate it again, and while new data may be becoming available (Moore and Hoffman 2011). To summarize, this bidirectional and iterative process can result in the confirmation, the dismissal, plausibility assessment or clarification, of multiple, plausible frames (Mesgari and Okoli 2019).

Within our study, the Data/Frame theory is the theoretical framework that supports and guides our inquiry into the accommodating practices employed by tablet users when they are faced with an episode of disillusionment elicited by application incompatibility, lack of connectivity, or the like. First, since such incidents trigger sensemaking, the overall approach can provide us with information on how users identify and understand the various perceived shortcomings of information systems. In other words, it can clarify the cognitive processes users go through during such anomalies, (i.e., the various possible sensemaking processes through which users identify and appreciate an episode of disillusionment and eventually arrive to their accommodating practices) (Fig. 2, dashed lines). Second, it formally accounts for detecting disillusionment (i.e., questioning the frame). It can thus allow us to investigate disillusionment itself (i.e., the anomaly that triggers sensemaking). The aforementioned triggers may include, among others, a discrepancy between one's expectations and the outcomes of the interaction, the interaction itself, and an inability to complete a certain task. Third, it is employed in order to examine user responses to the identified anomalies (i.e., comparing the frame, seeking a frame) and the possible outcomes (i.e., reframing, elaborating the frame, preserving the frame).

3 Research Design

Our study aims to understand how users interact with tablets, how they experience frame-breaking situations, and eventually how they make sense of these episodes and develop their own accommodating practices. We address these questions,

acknowledging that the phenomenon can be better explored without *manipulating the participants' behavior*, and simultaneously assessing all possible *contextual conditions* that may be relevant to the formulation of user accommodating practices. As such, we employ an interpretive case study to conduct a close examination of the user's perspective, and a deeper understanding of user accommodating practices.

We analyze qualitative data following the interpretive tradition. This allows us to adopt the user's perspective, to access multiple interpretations of the examined concepts and to profit from a deeper understanding of user accommodating practices (Orlikowski and Baroudi 1991; Walsham 1995). Our focus is on episodes of disillusionment that occur while users interact with the tablets; specifically, iPad the Apple tablet, as it is considered to be the exemplar of its genre. First, it has been argued that the tablet, as a genre, "failed to capture the public's imagination" (Atkinson 2008, p. 23); yet, this is arguably no longer the case. With the launch of the iPad, this genre became particularly popular among everyday users, and the tablet has proven to be the fastest selling device thus far, owned by more than 50 million users. Specifically, as far as the household tablet market is concerned, Apple's iPads have the lead over all other manufacturers (Statista 2019). Second, the iPad offers to a great extent a consistent experience across its models, thus allowing researchers to have a coherent view of the documented user accounts.

3.1 Empirical Material: Drawing from Users' Personal Blogs

The empirical material of this study builds upon blogposts, authored and published by tablet users, as they are considered to be gateways to one's experience, and they are approached as means "for understanding social actors both as observers and informants of social life" (Hookway 2008, p. 95). Previous studies have shown that blogs can be advantageous relative to other empirical material on certain dimensions. Approaching them as the online counterpart of diaries, they manage to "captur[e] situated action unadulterated by the scrutiny of a researcher," while the "tight union between everyday experience and [its] record" makes them less exposed to the retrospective reconstruction that often occurs during interviews (Hookway 2008, p. 95). Next, the widespread use of blogs opens up the possibility of accessing the online narratives of more participants than would be possible during a typical study with face-to-face interviews (Smith-Sullivan 2008).

3.2 Data Collection

The pool of blogposts was generated through a web search between March 2011 and August 2012, using "experience" AND "iPad" AND "blog" as the keywords. In order to ensure that our empirical material included solely unsolicited, personal blogposts, we excluded all technical reviews, blogs and websites that could be considered affiliated directly or indirectly with Apple Inc. Furthermore, the collected empirical material was scrutinized so as to ensure that each blog entry contained a) rich descriptions of user interactions with the investigated IT artifact and b) accounts regarding failed or disappointing interactions with the tablet. This was done so as to ensure that the final pool of blogposts would indeed contain episodes of disillusionment, rather than simple descriptions of interaction, and that the documented accounts would contain contextual and processual information, that would allow the investigation into user sensemaking. This resulted in a final pool of 49 blogposts, authored by 37 unique bloggers (Table 1).

We found that the participants were not dedicated Apple users. Naturally, there are some exceptions (Table 1, e.g., Jerry), with the users belonging to what is commonly known as the 'Cult of Mac' (Belk and Tumbat 2005). Nevertheless, in their majority, users report being owners of various computing devices of different manufacturers, categories such as laptops and desktops, and operating systems such as Windows or Linux. The previous and current experiences with Apple products tended to refer primarily to the use and ownership of the Apple iPhone. As a result, this minimizes the existence of any "halo effect" (Nisbett and Wilson 1977, p. 250), with regard to the study's findings. The complete casebook can be found in Table 1.

3.3 Data Analysis

The overall coding procedure entailed approaching the tablet as a comprehensive agency, consisting of the device itself, any additional technology enablers and accessories, the operating system, and the applications accompanying or having been downloaded to the device. This was dictated by the empirical material and the investigated concepts. The various features and components of an IT artifact work together toward constructing and influencing its use, and have an impact on user perceptions, At the same time, during the preliminary examination of our data, it became apparent that users' perceptions were deeply ingrained with valuations of the tablet's content as well. As a result, the device and the ecosystem surrounding it are examined as an all-encompassing IT artifact.

The analysis began with a preliminary examination of the data, which informed the coding procedure. The latter was based on the classical (or Glaserian) grounded theory methodology. This methodology was chosen for some quite specific reasons. First, as an analysis methodology, grounded theory introduces the formulation of mid-range theories that are able to explain both behavior and processes (Charmaz 2001); this entails that, it is possible to uncover the sensemaking process that users develop, because this methodology "specifically includes elements of process" (Orlikowski 1993). Second,

Table 1 Casebook of study (all names replaced with pseudonyms for anonymity purposes)

n	Bn	Name	Country	Gender	Profession	Generation
1	B1	Andrew	USA	Male	Co-founder Social Media agency	iPad 1
2	B2	Dale	USA	Male	Business development	iPad 2
3	B3	Hank	USA	Male	Visiting Professor	iPad 1
4	B4	Ed	USA	Male	Prof. of Management Science	iPad 1
5	B5	Dennis	Netherlands	Male	Blogger	iPad 1
6	B6	Sam	USA	Male	Entrepreneur	iPad 1
7	B7	Roger	UK	Male	VP Marketing	iPad 1
8	B8	Albert	USA	Male	Minister	iPad 1
9	B9	Hawk	China	Male	Marketing & Business Develop. Executive	iPad 1
10	B10	Gordon	USA	Male	CEO	iPad 1
11	B11	Garland	UK	Male	Executive Editor	iPad 2
	B12					iPad 1
12	B13	Chester	USA	Male	Chief Technology Officer	iPad 1
13	B14	Andy	USA	Male	IT Project Manager	iPad 2
14	B15	James	Canada	Male	Chief Technology Officer	iPad 2
15	B16	Harry	USA	Male	HR professional	iPad 1
16	B17	Phillip	USA	Male	Unidentified	iPad 1
	B18					
	B19					
17	B20	Bernard	USA	Male	Editor in Chief	iPad 1
18	B21	Bobby	USA	Male	PhD candidate in Computer Studies	iPad 2
19	B22	Johnny	South Africa	Male	Web designer, coder	iPad 1
20	B23	Jacques	UK	Male	Strategy Consultant	iPad 1
21	B24	Laura	USA	Female	Freelance journalist and blogger	iPad 1
	B25					iPad 1
22	B26	Leland	USA	Male	Naval architect	iPad 2
23	B27	Lucy	Netherlands	Female	UX consultant	iPad 1
24	B28	Blacky	USA	Male	Developer	iPad 2
25	B29	Pete	UK	Male	UX Designer	iPad 1
26	B30	Ben	UK	Male	Chartered accountant	iPad 1
	B31					
27	B32	William	Albania	Male	IT specialist	iPad 1
28	B33	Eileen	USA	Female	Managing editor	iPad 2
29	B34	Lawrence	USA	Male	Designer	new iPad
30	B35	Mike	UK	Male	Operations director	new iPad
31	B36	Donna	USA	Female	Internet Marketer	iPad 1
32	B37	Harold	UK	Male	Social specialist	iPad 2
33	B38	Harriet	Canada	Female	Ghost writer, consultant	iPad 1
34	B39	Emory	USA	Male	Science fiction writer	iPad 2
	B40					
	B41					
	B42					
	B43					
	B44					
35	B45	Jerry	USA	Male	Pastor	iPad 1
	B46					
	B47					
36	B48	Maddy	Australia	Female	Digital strategist	iPad 1
37	B49	Leo	USA	Male	Editor	iPad 2

grounded theory methodology is based on the development of analytic codes and categories from the empirical material, rather than from a strict theoretical framework and "preconceived hypotheses" (Urquhart and Fernández 2006); while in many occasions this is understood as disregarding extant literature, in practice it entails that the researcher needs to allow for the emergence of new themes from the empirical material, which previously may not have been uncovered by prior studies (Silic and Lowry 2019).

Open coding commenced by examining the data line by line, identifying as many codes as possible. We began our analysis by determining episodes of disillusionment and pinpointing the functions proposed by the Data/Frame theory of sensemaking, which, in essence, served as the backbone of our coding scheme. To do this, during the first phase, we began open coding all blogposts using NVivo 8, in an effort to break down the material in segments, and to discover as many concepts as possible. This means that first we studied the material for framebreaker episodes, i.e., episodes of disillusionment. The next layer of open coding entailed the identification of triggers, which appeared to give rise to the previously identified episodes. Next, we conducted the same work so as to spot individual accommodating practices. Finally, we open coded sensemaking functions. Our overall scheme for open coding highlighted user accommodation practices during and beyond episodes of disillusionment and their respective outcomes. Two of the authors studied the resulting codes, in order to compare their understanding of the material and their interpretations; this did not result to major differences, and thus the coding procedure continued.

Next, open codes were grouped together, which helped towards developing the study's core categories and constituted the stage of selective coding (Glaser and Holton 2004). In essence, at this stage, several open codes were grouped together into subcategories, being each other's variants, dimensions or properties of the core category (Urquhart 2012), and the entire stage served as a mean to identify emerging themes from within the coding process and as a way to investigate for possible connections between and among the separate codes and which could lend themselves to pattern identification (Chenail 2008). During selective coding, open codes concerning the triggers of disillusionment were grouped together and coded again around similar concepts (i.e., form factor, directory structure etc.). We approached in a similar manner the identified user accommodating practices, which resulted into three large categories. Finally, the identified sensemaking functions were examined within cases, in order to identify each user's sensemaking process and examine the possibility for emerging patterns.

At the end of the coding procedure, we developed the study's chains of evidence. This resulted in two separate tables (Table 3 and Table 4 in the Appendix), which are organized in accordance with the two sensemaking cycles (i.e., the elaboration cycle and the reframing cycle). The quotes in these tables are grouped with reference to the triggers of disillusionment. This allowed us to register which of the six sensemaking functions were at play in response to each trigger (Table 2) and thus derive five alternative paths (Fig. 3) of the sensemaking process that tablet users follow. Furthermore, through the investigation of the sensemaking process, we identified three accommodating practices (reject, workaround, reposition), which will be discussed further on in our data analysis.

4 Findings and Analysis

Our data reveal a set of different triggers for users' episodes of disillusionment with the tablet (cf. Figure 1). These relate to technical features or physical characteristics of the iPad (e.g., connectivity with other devices, flash support, available file formats) or lack of support for certain user habits (e.g., multitasking, coping with typing-intensive tasks).

Tracing a user's sensemaking process following an episode of disillusionment, we have identified alternative paths, where different sensemaking functions may be at play. Table 2 illustrates this in detail, with reference to the initial triggers we identified. In our study, we are only interested in these triggers to the extent that they lead to disillusionment, i.e., our focus is not the evaluation of the specific technology or generation of the tablet. Our primary focus is instead on the functions and alternative paths of the sensemaking process, which are discussed in the next part of this section. Furthermore, our data shows that once a sensemaking cycle has been completed, users cope with the disillusionment in different ways. These accommodating practices are presented and analyzed in the second part of this section.

4.1 Functions and Alternative Paths of the Sensemaking Process

In this section we present a detailed account of how users experience in practice the functions of sensemaking, that is, questioning, comparing, preserving, elaborating, seeking and reframing, as they occur following an episode of disillusionment. Our data analysis shows that these functions take place across certain paths in the sensemaking process, and they occur in various combinations and sequences. We identified five patterns of paths, which we categorize as either elaboration cycles or reframing cycles of sensemaking (Fig. 3). Specifically, we found that, after questioning the frame, users may take up the elaborating cycle and, through different functions, eventually arrive to a refined understanding of their situation (Fig. 3a–c). Equally so, users may take the reframing cycle and essentially reframe their initial understanding of the situation (Fig. 3d, e).

The role of each function in the sensemaking process is discussed below, with reference to the relevant evidence.

Table 2 Sensemaking functions with reference to triggers

Triggers	Relevant Quotes [a]	Sensemaking functions						Alternative path of sensemaking process
		Questioning the frame	Comparing the frame	Preserving the frame	Elaborating the frame	Seeking a frame	Reframing	
Connectivity	(B23, Q3)	(1)			(2)			(a)
	(B19, Q2)	(1)	(2)	(3)	(4)			(c)
	(B18, Q2)	(1)	(2)	(3)	(4)			(c)
Application translation	(B49, Q3)	(1)			(2)			(a)
	(B49, Q9)	(1)				(2)	(3)	(e)
Flash support	(B31, Q1)	(1)		(2)	(3)			(b)
	(B25, Q1)	(1)		(2)	(3)			(b)
	(B29, Q1)	(1)	(2)	(3)	(4)			(c)
	(B10, Q1)	(1)	(2)				(3)	(d)
	(B23, Q2)	(1)				(2)	(3)	(e)
Multitasking	(B48, Q1)	(1)		(2)	(3)			(b)
	(B11, Q2)	(1)	(2)	(3)	(4)			(c)
	(B11, Q4)	(1)	(2)	(3)	(4)			(c)
	(B49, Q4)	(1)	(2)				(3)	(d)
	(B36, Q1)	(1)				(2)	(3)	(e)
Form factor	(B11, Q1)	(1)	(2)	(3)	(4)			(c)
	(B4, Q2)	(1)	(2)	(3)	(4)			(c)
	(B4, Q3)	(1)	(2)	(3)	(4)			(c)
Directory structure	(B17, Q1)	(1)	(2)	(3)	(4)			(c)
	(B9, Q3)	(1)				(2)	(3)	(e)
	(B21, Q1)	(1)				(2)	(3)	(e)
	(B21, Q2)	(1)				(2)	(3)	(e)
File formats	(B5, Q1)	(1)	(2)	(3)	(4)			(c)
	(B18, Q1)	(1)				(2)	(3)	(e)
New cognitive ergonomics	(B33, Q1)	(1)	(2)				(3)	(d)
	(B40, Q2)	(1)				(2)	(3)	(e)
Typing intensive tasks	(B10, Q1)	(1)	(2)				(3)	(d)
	(B10, Q2)	(1)	(2)				(3)	(d)
	(B42, Q1)	(1)	(2)				(3)	(d)
	(B49, Q2)	(1)	(2)				(3)	(d)
	(B9, Q1)	(1)				(2)	(3)	(e)

The number in brackets denotes the function's order of appearance within the alternative sensemaking path, while the letter in brackets in the last column denotes the alternative paths of the sensemaking process (cf. Figure 3)

[a] The relevant quotes are provided in Table 3 and Table 4 in the Appendix

4.1.1 Questioning the Frame: Detecting Episodes of Disillusionment

While interacting with the tablet, several users appeared to be disappointed to some extent with the tablet's capabilities and the possibilities offered. In their blogs, they documented how they detected these episodes of disillusionment, while reporting on what they originally anticipated; they questioned their original frame.

Most frequent among their expectations was an unobtrusive or flawless Internet experience. This was not unexpected since the tablet was specifically marketed as offering a superior browsing experience. While remembering the tablet's official launch, the user called Pete saw the lack of Flash support as something obviously hindering his Internet browsing experience (B29, Q1[1]). The user called Phillip, on the other hand, acquired the tablet aiming specifically to use it as a reference manager, organizing his PDF and PPT files in a directory

[1] Quotes are marked with Bn, where n stands for the blogpost's number in Table 1, so as to distinguish between the multiple blogposts by the same blogger, and Qm, where m stands for the quote's order of appearance within the blogpost.

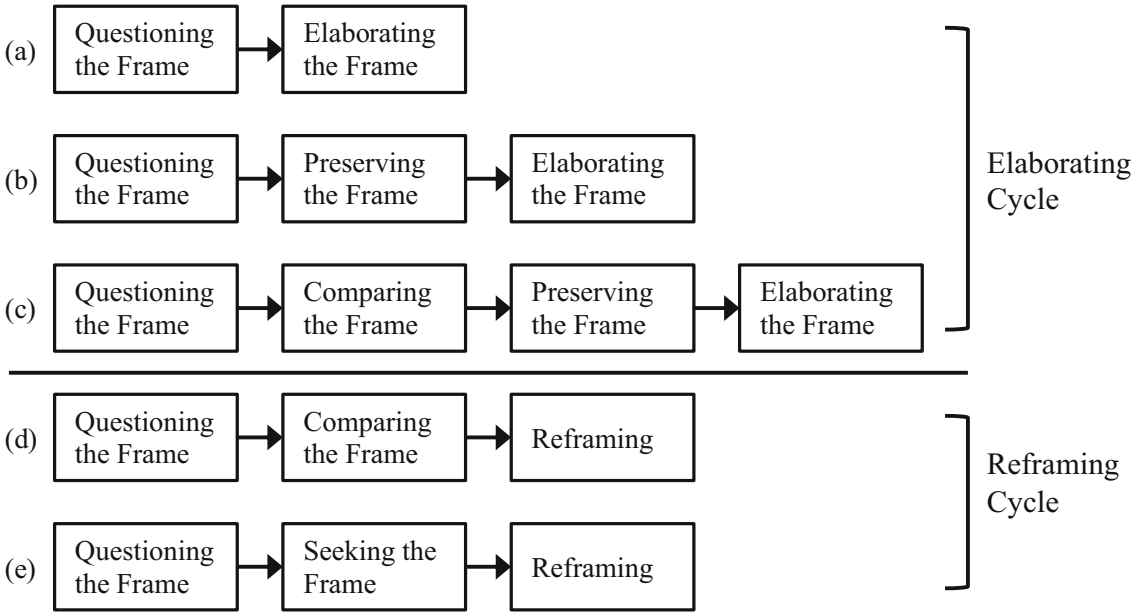


Fig. 3 Alternative paths of the sensemaking process

structure. The realization that the particular tablet could not meet his expectations functioned as the starting point toward collapsing the initial frame and as a trigger towards seeking viable solutions that would meet his needs (B17, Q1). Similarly, Garland, who was looking forward to using the tablet for reading purposes while in bed, saw his expectations torn down as the new IT artifact's form factor felt uncomfortable and even precarious for use in that particular setting (B11, Q1). Similarly, Jacques realized that the tablet is missing important features (ports and slots) that would allow him to connect it with external storage media (B23, Q3). It is uncertain whether he expected this, but it is clear that upon facing it, he embarked towards resolving it with the help of a technology enabler. It is worth noting that both Garland and Jacques highlighted what they perceived as an inconsistency between the device's overall attractiveness (i.e., "premium materials" [B11, Q1], "beautifully designed device" [B23, Q3]), and perceptions related to the tablet's form.

4.1.2 Comparing Frames: Alternative Solutions

Following the moment of disillusionment, users proceed by adopting different sensemaking paths. While some may seek to further elaborate their initial frame, others may attempt to preserve it or to seek a new frame entirely. Yet, by and large, the most widely chosen path we identified (17 instances, cf. Table 3) was that of comparing different frames (i.e., the extant situation and possible alternative solutions) (Fig. 3c, d).

As an example, when the user called Hawk realized that heavy blogging solely from the tablet—a typing-intensive task—was rather unrealistic, he did consider that perhaps he would have been more efficient had he used a keyboard (B9, Q1). Emory, like Hawk, sought to compare alternative approaches for blogging. He compared blogging from the tablet using the dedicated mobile application or the Internet browser to blogging directly from his laptop, and suggested that none of these alternatives seemed viable as they didn't help him match his typical blogging pace (B42, Q1). Ed, who purchased the tablet for occupying his time while recovering from surgery, felt constant discomfort due to its form factor and screen glare. Seeking to explain his situation, he reflected on the differences between the newly acquired tablet and his other devices, highlighting various disadvantages (B4, Q2–3).

4.1.3 Preserving a Frame: Defending Flawed Interpretations

The function of preserving the frame may be the result of comparing alternative frames, or simply of questioning the initial frame. While comparing different approaches, users had the opportunity to identify and later adopt the one offering a more desirable outcome (e.g., ease their interaction); yet, results show that they were equally likely to dismiss this process and proceed by justifying their initial choice (i.e., preserving the frame) (Fig. 3c).

Tracing Phillip's sensemaking, we see that he aimed at using the tablet as a PDF and PPT file organizer (B17, Q1). He highlighted that, admittedly, one could download such files via the Internet for later viewing, however this assumes that a connection is always available. He further stressed that, since his device was not 3G-enabled, a solution was not always at his disposal. As a result, he found himself struggling to transfer files, and in doing so, he considered the scenario of having purchased the 3G-enabled, instead of the WiFi-only one, while he also considered the option of acquiring a

personal hotspot, which would allow him to be always connected (B18, Q2). In short, while he realized the inconsistency of the initial frame, with the tablet failing his expectations, he went on comparing alternative frames (i.e., different scenarios) with the help of technology enablers. He finally preserved the initial frame by recognizing the financial savings.

In other instances, participants preserved their flawed interpretation without examining alternative strategies or approaches to the anomalous situation (i.e., they arrived at preserving the frame immediately after having questioned the initial frame). They proceeded directly to diminish the significance of what triggered their disillusionment or to justify it altogether (Fig. 3b). One exemplary case is that of the user called Maddy, who felt disappointed at first due to the tablet's inability to allow multitasking (B48, Q1). Like other users (B11, Q2), (B36, Q1), she noticed that she could use only one application at a time. However, she minimized multitasking's importance within the context of her interaction and supported the initial frame by suggesting that the issue might be the result of the tablet's immaturity. Ben exhibited a similar rationale when disillusioned with the tablet's Internet browsing capabilities. For him, disillusionment revolved around the lack of Flash support and website compatibility. However, he didn't seek an alternative explanation by means of comparison among different browsing strategies; instead, he too adopted the first available frame and attributed the disillusionment to the tablet's immaturity (B31-Q1).

4.1.4 Elaborating the Frame: Enriching the Interpretation

Users may arrive at the function of elaborating the frame either immediately after having questioned the initial frame, or through several sensemaking functions, either having preserved the initial frame or having compared alternative frames and preserved the initial one.

Several of the users in our study sought to collect information towards improving their understanding of the particularities of the situation so that they could eventually adopt a suitable course of action (Fig. 3a). Jacques, for example, examined the possibilities for connectivity and their impact on his interaction, which equipped him to develop a more elaborate knowledge of the issue (B23, Q3). Nevertheless, as shown in Maddy's case, one may preserve an imperfect frame and further elaborate it (Fig. 3b); while she perceived a discomfort from the lack of multitasking, she minimized the episode's impact by suggesting that the operating system's responsiveness might compensate for it (B48, Q1). Finally, others enriched their understanding by following a different path. Garland (B11, Q4), for example, having gone through the function of comparing his interaction across different platforms, developed several alternative frames. However, he preserved an imperfect one and went on attributing his initial frustration to his style of interaction (Fig. 3c).

4.1.5 Seeking a Frame: Finding Anchors

As users attempted to understand the anomalous episodes, they sought the reasons for their disillusionment, which functioned as the building blocks for the construction of the new frame (Fig. 3e). In this case, seeking a frame followed the questioning of the frame and led exclusively to reframing. As in Phillip's case (B17, Q1), the lack of a universal file structure functioned as the trigger of several users' sensemaking. However each of them followed a different path of making sense of their experience. As they had different points of departure, they anchored their understanding on different themes. Bobby, for example, approached the tablet as an IT artifact of great potential and built his initial frame around this. Nevertheless, he quickly felt disappointed as the lack of a directory structure proved to be troublesome, not allowing the implementation of applications as envisaged by their developers. He considered this a limitation imposed by the company's overall business strategy (B21, Q2). In short, while his sensemaking was triggered by the lack of file structure, the main source (i.e., the anchor for his interpretation of the situation) was found in business-related aspects. On the other hand, the initial frames of the user called Hawk were constructed around his motivation to use the tablet as a substitute for his laptop for his blogging activities. Yet, he perceived it as inadequate for his needs and anchored the newly constructed frame in the tablet's inability to effectively manipulate picture files, either directly or indirectly (i.e., with the help of third-party applications) (B9, Q3).

4.1.6 Reframing: Reinterpreting the Frame

Reframing entails the reinterpretation of an episode of disillusionment via newly perceived data. While sensemakers consider alternative interpretations of the anomaly, they also reflect on the possible approaches towards overcoming it. Therefore, they may ultimately identify new information which may now be more important within the context of the interaction and thus alter pre-established perceptions and goals (Fig. 3d). It concludes the reframing cycle, and may be the result of comparing alternative frames or seeking a new frame.

Drawing from the recounting of the user called Gordon, we see that what triggered his sensemaking are the lack of Flash support and that of a physical keyboard, the first inhibiting his gaming activities and the second typing-intensive tasks (B10, Q1). However, he examined his tablet interaction within the particularities of his everyday life—which includes increased commuting and frequent meetings—and compared it with that with the laptop (B10, Q2). This process led him to reflect on the tablet's increased portability and battery efficiency, re-evaluating his priorities and lessening the importance of typing-intensive and Flash-based tasks, ultimately being

comfortable with deferring them (B10, Q1 and Q2). Nevertheless, reframing may also occur as users seek to anchor their understanding in the causes of their disillusionment (Fig. 3e). As Leo endeavored to use the tablet as a picture-editing tool, he found himself disappointed because the application of his choice didn't translate well on the specific platform, offering limited features. This initialized his sensemaking and, while seeking to enrich his initial frame by highlighting the application's disadvantages, he anchored his interpretation in the tablet's primary role, as imposed by its overall design, and his original stance towards its competencies. However, through this process, he eventually repositioned his approach and suggested that the tablet's reduced performance might still be considered satisfactory along the lines of his everyday needs (B49, Q9).

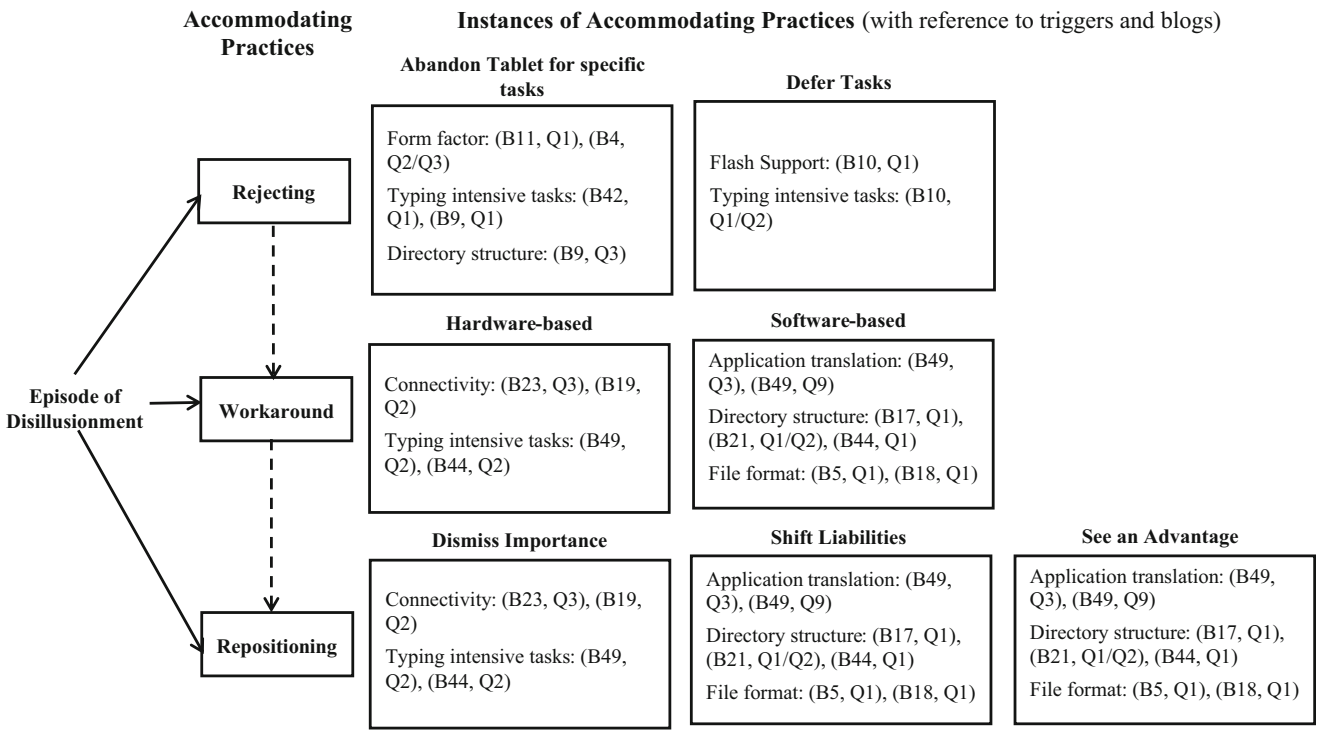
4.2 Episodes of Disillusionment and User Accommodating Practices

Aiming to identify patterns of user practices, we first conducted a within-case analysis to examine whether differences in the alternative sensemaking paths entailed the adoption of specific accommodation practices. We then followed an across-case analysis, which supported the detection and the investigation of the triggers causing disillusionment. These results are summarized in Fig. 4, which shows that the three main clusters that emerged are Rejecting, Workarounds and Repositioning.

4.2.1 Rejecting the Tablet

The practice of rejecting the tablet may be thought of as one's resistance to adopting the device for particular tasks. It may range from deferring these tasks to abandoning the IT artifact altogether. An important pattern that emerged within this cluster is that of users abandoning the tablet for watching movies and videos (e.g., B4, Q2), for bedtime reading (e.g., B11, Q1) and for typing-intensive tasks (e.g., B9, Q1 and B42, Q1). As far as watching movies and reading are concerned, disillusionment originated from the tablet's form factor, with users choosing to substitute the IT artifact. Interestingly enough, this choice derived from a comparison between a previously owned device (i.e., a dedicated e-reader) and the newly acquired one. In essence, having already had a positive experience with another device minimized users' willingness to adjust to new ergonomics of the tablet and therefore preserved the initial frame of the tablet being an uncomfortable artifact.

Regarding the use of a table for prolonged typing, our findings varied. Even though a comparison of alternative frames led to the tablet's rejection in some cases (e.g., B42, Q1), in other cases it led to task postponement (e.g., B10, Q1 and Q2). The user called Emory, for example, considered the alternative solutions and argued that they could be time-consuming; as such, his goal shifted from using the tablet for blogging to maintaining his blog-posting pace



Continuous line: relationship between episodes of disillusionment and accommodating practices Dashed line: possible co-existence of accommodating practices.

Fig. 4 User accommodating practices

and thus he abandoned the tablet for this task (B42, Q1). Following the same process, Gordon highlighted the importance of the tablet's increased portability and re-evaluated his goals; yet, in this case, instead of abandoning the tablet, he chose to defer the task itself (B10, Q1 and Q2). Finally, rejecting the tablet for typing-intensive tasks may also be the result of a saturated understanding of the tablet's performance and capabilities, exemplified by Hawk's case (B9, Q1). He recounted his effort to use the tablet for intense typing, the issues he faced, and how he ultimately resorted to replacing the device with borrowed laptops for his blogging activities. Similar to Emory and in contrast to Gordon, Hawk saw a greater value in completing tasks on time and efficiently rather than in increased portability.

Understandably, these user practices differ greatly regarding user intentions, and they all stem from the interaction's re-evaluation within the context of use. Considering them as a whole, one sees that users prefer to postpone less important activities, such as Flash-based games and less significant e-mails (B10, Q1 and Q2). In contrast, when the activity was considered important—for example, being work-centered (B9, Q1) or remaining faithful to one's readership (B42, Q1)—users found it more advantageous to use other devices.

Continuous line: relationship between episodes of disillusionment and accommodating practices. Dashed line: possible co-existence of accommodating practices.

4.3 Developing Workarounds

The second cluster of user practices we identified is that of workarounds. When users broke free from a flawed or fragmented interpretation (Fig. 3a–e), they succeeded in resolving the problem they faced by deploying elegant or complex workarounds. The nature and the complexity of the workaround was mainly dictated by the problem and the available solutions, where the user perceived that the situation could be improved through her/his mediation.

By and large the most popular type of workaround was the use of third-party applications, whether offline or cloud-based. The lack of a directory structure (e.g., B21Q1 and Q2, B17, Q1) and the inefficient translation of applications for the specific platform (e.g., B49, Q3, B49, Q9) led users to search the extant App marketplace. Nevertheless, a clear pattern linking the solution's sophistication, the user type and the sensemaking process did not emerge. For example, users might go through the process of revising their understanding and expectations (Fig. 3e) and adopt a complex workaround, entailing the use of a bundle of applications (e.g., B49, Q9), which may be seen as a "kludge" (Koopman and Hoffman 2003, p. 70). Others, while refining their frame through an investigation into the tablet's capabilities (Fig. 3a), appeared to be deploying a rather straightforward workaround by using a substitute application (e.g., B49, Q3). As a result, provided that users managed to recognize that they had the ability to improve the interaction, the sophistication of the workaround may be considered as problem-dependent, rather than solely sensemaking-dependent.

Moving from software- to hardware-based workarounds, users turned to technology enablers in order to overcome connectivity issues and handle typing-intensive tasks. Connectivity issues were most often treated with the help of enablers such as hotspot devices (e.g., B19, Q2) and card readers (e.g., B23, Q4), which enabled the tablet to interface with networks and other devices. On the other hand, heavy typing was approached with the help of a wireless keyboard (e.g., B49, Q2). What is notable is that users tackled typing-intensive tasks with the help of a technology enabler, even though they followed the same sensemaking process as those who rejected the tablet for such tasks (e.g., B42, Q1) or deferred them (e.g., B10, Q1). As we were not able to attribute this difference to the sensemaking process, we investigated further into user characteristics so as to shed light onto the inconsistency. The user called Gordon preferred to defer typing-intensive tasks for the sake of increased portability (B10, Q1), while Emory chose to abandon the tablet and continue using his regular computer so as to maintain his blogposting pace (B42, Q1). The main difference between these two is that the first was a mobile professional, and as such, a frequent commuter and traveler. The second, even though is also frequent traveler, conducted a more stationary professional life. Nevertheless, Leo, an on-the-go professional like Gordon, adopted an approach similar to Emory's. Further scrutinizing his recounting, we see that for Leo it was more difficult to defer tasks since his typical workdays were spent almost entirely outside the office [*"Even when I'm not traveling, I spend a lot of time bopping around San Francisco and the Bay Area, attending conferences, visiting tech companies, working out of hotel lobbies"* (B49, Q5)]; it was also possible that he had less time for revisiting responsibilities, much like Emory. Furthermore, Leo found additional advantages in the tablet, even when augmented with an external keyboard [*"Beyond the jaw-droppingly good battery life, my iPad 2 has one other hardware attribute that's a huge upgrade over the Air: It has AT&T wireless broadband built in. (...) I don't have to futz with Wi-Fi hotspots. I'm just online–and it makes me so much more productive that I don't object a bit to paying AT&T for the service"* (B49, Q7)].

Therefore, revisiting our initial interpretation, we see that following the same sensemaking process (Fig. 2d) and for the purposes of typing-intensive tasks, what led users to adopt a specific accommodating practice rested with their perception regarding the tablet's overall performance; additional advantages (e.g., battery efficiency and portability) may have exerted a stronger influence and driven them to work harder toward resolving any emerging issues.

4.4 Repositioning

The third cluster may be considered as the result of one's repositioning relative to the initial frame and the development of a new understanding (Fig. 3c, e). The common denominator across these instances is that, independently of the sensemaking process, users adjusted their understanding to the situation at hand, without seeking to improve the underlying conditions. As a result, they defended or minimized the importance of any inconsistencies between their expectations and the tablet's functionality.

Most prominent among the features that violated user expectations was the lack of multitasking, with users rationalizing it across all sensemaking processes. Those who persisted on a flawed understanding implied that perhaps this feature was lacking due to the tablet's immaturity and hoped that future versions may allow it (e.g., B48, Q1). Others sought to examine further their interaction and, while reflecting on previous experiences, revise their interpretation so as to approach the lack of multitasking as something that assists them in being more focused on the task at hand (e.g., B49, Q4) and (B36, Q1). Equally so, others considered their interaction style as imperfect within the context of the newly introduced cognitive ergonomics, and posited that any inconsistencies were due to a mismatch between the two (e.g., B11-Q4). Finally, a subgroup within the cluster of repositioning emerged due to the lack of Flash support. Even though all users suggested that it inhibited their Internet experience, they eventually rationalized it, each to a different extent. Similarly to those who accredited some issues to the tablet's immaturity, they appeared confident that this will be handled in the future (e.g., B31, Q1). Still others sheltered their understanding and, instead of seeking alternative interpretations, they claimed that Flash is not integral (e.g., B25, Q1). All the while, others shifted liabilities and posited that the issue lay with websites using Flash rather than with the incompatibility between the software and the operating system (e.g., B23, Q2).

4.5 Co-Existence of Accommodating Practices

For specific disillusionment triggers, the adopted accommodating practices were not necessarily used independently but could co-exist (dashed line in Fig. 3). A user might shift from one practice to another over time, or deploy more than one, depending on the task at hand. Specifically, a given user may have initially rejected the tablet for a particular task but then chosen to develop a workaround in order to support his/her interaction with it if this seems to be necessary or for the purpose of using the tablet for some other activity. Following that, users who had developed workarounds may in fact have realized that for some other activity, the tablet may have been ideal and thus repositioned their understanding as far as the IT artifact was concerned.

The user called Emory indicates in his blogposts that he considered blogging from the tablet as a typing-intensive task due to the necessity of typing HTML himself. In fear of putting his blogging pace in jeopardy, he chose to reject the tablet and continue on blogging from his computer (B42, Q1). However, he revealed that he was equipped with a bluetooth keyboard (i.e., a technology enabler), which he used to catch up with his science-fiction writing when he found himself outside his home office (*"In writing on my iPad, I don't use the touch screen, which would be far too slow for me. (...) I have a standard Mac wireless BlueTooth keyboard that I sync with my MacBook. When I am going to be away from the house and I know I'll be writing, I take that same keyboard with me"* [B44, Q2]). In addition, he resorted to using a bundle of cloud-based third-party applications, because syncing with his home computer was a basic requirement (*"I had to experiment with different ways of writing fiction that would allow me to integrate with Scrivener, which is my primary writing tool on my Mac laptop. (...) Eventually, I found a better solution, using Scrivener, Dropbox, and Elements"* [B44, Q1]). In other words, he used two workarounds—a technology enabler and several third-party applications—so as to succeed in using the tablet as desired and at an acceptable pace; yet, previously, he had rejected the IT artifact altogether (B42, Q1).

On a more abstract level, such behavior may be interpreted as repositioning one's understanding. In the example above, the user attempted to use the tablet for blogging; when he realized that it would slow him down considerably, he abandoned the tablet altogether for the specific use scenario, but not for all other purposes. Instead, by developing two workarounds (technology enabler and third-party applications), he succeeded in fitting the IT artifact into his everyday and work life, and in using it for other, similarly typing-intensive tasks. It can thus be argued that users embark using a mixture of the identified accommodating practices rather than resorting to just one, leading the user from an initial rejection to a final repositioning.

5 Discussion and Contributions

This study proposes a new approach for examining post-adoption user perceptions and actions, by focusing on how users make sense of the triggers that cause a disparity between their expectations and the interaction's outcomes (Fig. 1). Specifically, our study proposes that the various technological features, due to their existence in or absence from the design of the IT artifact, can trigger disillusionment, and, in turn, give rise to user sensemaking; as users try to make sense of their interaction, they attempt to develop their own accommodating practices in an effort to either adapt the IT artifact to their needs or adapt themselves to the technology. Most importantly, in our study, we have examined post adoption behavior as a

process, rather as a binary decision-making phenomenon. Building upon an interpretive case study and through the lens of sensemaking, we have investigated the entire sensemaking process, from the identification of a trigger initiating disillusionment up to the point of users' developing their own accommodating practices.

Our study shows that, in line with the Data/Frame theory, when users identify a discrepancy between expectations and reality, they begin making sense of what takes place, following different paths; they either a) revise their goals or b) elaborate their understanding further, occasionally persisting in a flawed interpretation or discarding alternative choices. Additionally, we have identified five alternative paths of the sensemaking process. The six sensemaking functions organize in a way that allows users to choose different routes when faced with disillusionment and to develop different accommodating practices (Fig. 5). As a result, it is the sensemaking process that leads users into investigating alternative solutions, and to evaluate the usefulness of either adapting the tablet to their needs or adapting themselves to the tablet.

When users experience disillusionment due to the IT artifact's capabilities, they begin questioning their initial perceptions with regard to the possibilities offered. Following that, users may move towards the elaboration cycle, in which they either attempt to elaborate their initial understanding, choose to persist on a flawed interpretation of the events, or enrich their perception of the episode or compare alternative scenarios (e.g., their initial expectations against possible solutions). Interestingly enough, in the latter situation, they again preserve their initial understanding and further enhance it. Others may move towards the reframing cycle. Within this cycle, there are two different paths. In the first path, users may attempt to understand the episode of disillusionment and itself and then seek to identify the reasons for it. In the second path, users may consider alternative interpretations and reflect on these possible approaches towards overcoming their disillusionment. In either case, they essentially try to construct a new understanding, reinterpreting their original expectations or the episode of disillusionment at hand.

5.1 Theoretical Implications

Our results on the sensemaking processes dimension roughly resemble the conceptualization of post-adoptive behaviors proposed by Jasperson et al. (2005). Building upon a reflective consideration of technology, the authors propose that, during the post-implementation phase of an information system, the user proceeds making sense of the technology by considering a preexisting set of cognitions and then moves on to possibly modifying preexistent post adoptive intentions and forming future behaviors, which lent themselves to further reflection, and weak or strong confirmation perceptions. They further argue that there is an alternative path to this, where reflective cognition is replaced by habitual use, which dictates post adoptive behavior, thus transforming IT use into a routinized activity. Along these lines, the main differences between our results and Jasperson et al.'s study, is that, first, because ours was an empirical study, we present tangible results regarding the triggers that violate users' expectations and the resulting accommodating practices, while we have further identified and described in detail the exact processes of making sense of technology. In addition, our study, and thus our results are focused on strong disconfirmation instances, while Jasperson et al. are focused on both

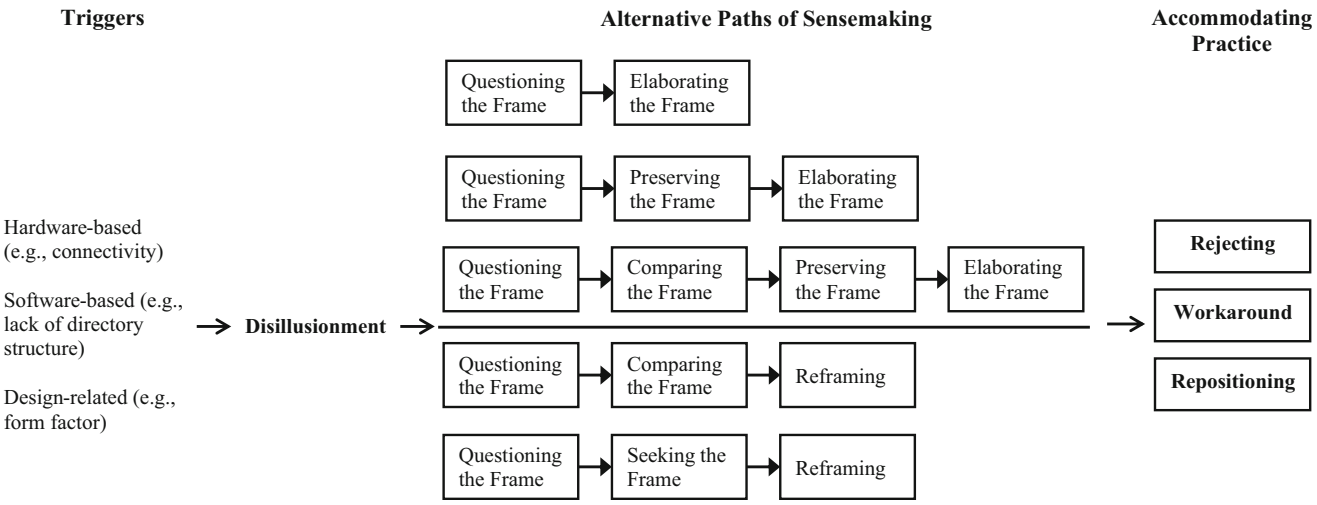


Fig. 5 Sensemaking paths and accommodating practices in post-adoption behavior

confirmation and disconfirmation, in order to put forth a more general conceptual model of post adoptive behavior.

Concerning accommodating practices, we have uncovered three different patterns of behavior, namely: 1) the rejection of the tablet, 2) the deployment of workarounds, and 3) the repositioning of one's understanding. Users may proceed to developing workarounds by turning to technology enablers and third-party applications in order to successfully integrate the tablet into their routine. Such workarounds appear to be persistent over time, without explicitly breaking the principles of the interaction. By contrast, they are perceived as essential workarounds (Azad and King 2011), facilitating interaction and increasing productivity. Moreover, they differ significantly from direct/indirect or positive/negative resistance (Ferneley and Sobreperez 2006).

Our findings show that users seek to incorporate the tablet into their everyday. Further, because our study approaches interaction irrespective of the user's or the IT artifact's role (i.e., work or non-work related), it follows that the tablet is not an entity imposed by an external power structure (e.g., work environment) to whose intention a user could exhibit resistance. Nevertheless, resistance-related behavior has surfaced more explicitly, with users highlighting numerous reasons for rejecting the tablet for specific tasks. Users did not seek to deploy any type of workaround as they felt that the available solutions could not remedy the situation. Instead, they resort to a different IT artifact (e.g., e-reader) or entirely defer the task at hand, rather than adapt the tablet to their needs.

With regard to user accommodating practices, these are not mutually exclusive; instead they may coexist and one practice may be used together with another one. A given user may initially adopt one accommodating practice, then later on shift to another or deploy a combination of the three of them, depending on the task at hand. All in all, a user can use a combination of accommodating practices, which may lead from an initial rejection to a final repositioning. In addition, the study has resulted in a classification scheme of accommodating practices that specifically addresses the individual level, and technology adoption following one's volitional control. Even though similar categorizations already exist, our findings along these lines constitute a second contribution. Coping theory, for example, proposes two strategies for coping with unexpected events, the problem-focused and the emotion-focused. Based on this comparison, one may argue that a workaround is a problem-focused coping strategy. Similarly, rejecting and repositioning practices can be approached as emotion-focused coping strategies when the user realizes that there are no viable solutions and that "problem-solving efforts [could] be counterproductive" and even likely to cause distress (Lazarus 1993, p. 238). As a result, the user may choose to distance her- or himself from the situation (i.e., rejecting) or to deny the existence of the problem altogether (i.e., repositioning).

In this sense, our study's findings differ in concept and in principle from those of previous studies based on coping theory. These studies most often examine employees' coping mechanisms and behavior due to ICT-induced changes within an organization (e.g., Beaudry and Pinsonneault 2005; Kwahk 2011), or other forms of malicious IT (Liang and Xue 2009), which tend to be centered around exacerbated feelings of stress and anxiety regarding one's security or position within a professional structure. In contrast, the focus of sensemaking in general, and that of our study in particular, is on framebreaker events (i.e., unpredictable occurrences) that occur when the use of a technology is consumerized, under the user's individual volitional control. This suggests that framebreaker situations may indeed violate one's expectations, and be stressful and surprising, but also emotionally neutral. Consequently, our findings are applicable to a wider range of settings, and they contribute to extant theory by providing a classification scheme of users' accommodating practices when the use of technology is not imposed by an external power structure or organizational setting, and is unrelated to a collective performance or productivity.

Next, the study has explored the cognitive processes users go through when seeking to overcome an episode of disillusionment and when they develop their various accommodating practices. Through the Data/Frame theory, it was possible to understand individual users' rationale during the various disillusionment instances, and to uncover specific alternative sensemaking paths. Essentially, the study has described in detail the entire process of interacting with technology when the specific technology falls sort of users' expectations; first, we have pinpointed several instances during which technology may indeed violate one's expectations; second, we have highlighted the way users identify these discrepancies and attempt to understand the surrounding conditions; third, the study has posited five alternative sensemaking paths, each with its own intermediary functions, all of which result in three large categories of accommodating practices.

5.2 Practical Implications

On a practical level, our study can inform the design process of IT artifacts and applications. Drawing from the work of Griffith, we too have adopted a features-based approach and identified specific technological features that appear to be noticed by users and initiate their sensemaking (Griffith 1999). However, we consider that we have further extended this work; Griffith examines

triggers of sensemaking by categorizing them as concrete, abstract, core or tangential. Instead, we have pinpointed a specific set of features, ranging from hardware-based issues (e.g., lack of connectivity), to software-based (e.g., lack of a directory structure), to purely design-related ones (e.g., form factor). In this sense, our study equips designers towards grasping what users actually need, what they actually do, and how they go about restoring a connection between the two when technology fails their expectations. Our specific findings along the dimension of sensemaking triggers, together with our proposed typology of user practices can help practitioners to comprehend the IT artifact's shortcomings and why such practices may be necessary. Specifically, it can help them towards addressing the failings, either directly by tackling them, or indirectly, by providing users with the means to develop more elegant workarounds. In all cases, addressing these triggers can help make for easier to use IT, increase the continued use of IT artefacts and therefore make for more successful IT products (Albashrawi and Motiwalla 2019).

Finally, as has been shown in the past, and also evidenced through this study, not all workarounds are resistance-related behaviors, but rather attempts to facilitate one's tasks and activities. As such, an investigation following the aforementioned approach can inform upper-level management, change managers and designers with regard to the users' underlying intentions, thus lead to more accurate decision making and improvements.

5.3 Study Limitations

Our study has some limitations that need to be acknowledged. First, although we have examined in detail the various accommodating practices, we haven't looked into their impact on, for example, user satisfaction and overall experience. Since these are of great interest for designers and managers, future studies should address the outcomes of rejecting and workaround practices. Next, another limitation stems from our material's nature. Certainly, bloggers may prefer to focus on things, which they themselves consider most striking and disregard those that fall within our research questions. However, since we aimed at interpreting users' experience, adopting their viewpoint allowed us to focus on their priorities rather than on our own preconceptions; this permitted themes to emerge as narratives unfolded. Next, blogging may leave room for "impression management" (Hookway 2008, p. 93). However, this may occur in almost every research scenario, as the researcher cannot ensure that participants answer truthfully without distorting reality.

While there is some heterogeneity across participants, as the study's casebook (Table 1) contains from CEOs and executives to professors and pastors, situated in Australia, USA, North Africa etc., there is a high overrepresentation of a specific user group, i.e., upper level male managers or freelancers, based in North America. As a result, it first needs to be stressed that the particular pool of users represents the intersection of tablet users and blog authors. Second, the cultural background of users undoubtedly affects their personal sensemaking and the way they perceive their personal experience with the specific IT artifact. As a result, our findings should be interpreted and used with caution as they relate primarily to the aforementioned user group.

5.4 The Timeliness of Our Findings

Our data were collected between 2011 and 2012. Since then, Apple has introduced many new iPad generations, adding and removing features and functions, and changing the form factor in many ways. Clearly, we recognize that these features and functions and the new form factor may or may not trigger disillusionment, and therefore give way to users' sensemaking and subsequently to one of the identified user accommodating practices.

For example, since our data collection, Apple has introduced a new iOS that introduces an application ('Files') which integrates cloud-based applications, namely Dropbox, Google Drive, iCloud etc. Through this application, users are able to store, access, upload and download files on their tablet, and therefore the negative feelings linked to the lack of a file structure as identified through our study, will have most likely subsided. Similarly, between now and then, many manufacturers have launched into the market bluetooth keyboards of different weights, sizes and capabilities, including Apple. Therefore, we consider that many of the tablet users who have exhibited a severe dissatisfaction with regard to the inefficiencies of the on-screen keyboard or of the then available hardware keyboards, will have now found a Bluetooth keyboard that satisfies their needs. As such, typing intensive tasks may no longer serve as one of the triggers of disillusionment. At the same time, however, previous problems persist, and new ones have been introduced. For example, while newer versions are still advertised as laptop replacements, there is still no full hard drive support, and some versions were shipped without a headphone jack support.

Having said that, we note that the focus of our study is not in identifying the technical features of an IT artefact that function as triggers of disillusionment. This would of course place greater emphasis on the technology itself and it would require up to date data collected through multiple cross-sectional studies, that would allow the identification and comparison of the exact IT features that currently trigger disillusionment. Instead, we are interested in illustrating the sensemaking paths

that users follow when IT features trigger disillusionment, and how these lead to the three identified accommodating practices. Against this background, the technical features serve merely as examples.

It is not uncommon for sensemaking studies to disregard the timeliness of events, given the emphasis on process (Elbanna and Linderoth 2015; Kim and Kishore 2018). While the importance of context (including temporal context) is recognized, it is only studied with reference to its role in sensemaking. A prominent example is Weick's seminal work on the Mann Gulch disaster (Weick 1993), in which he addresses the unravelling of organizations and organizational structures in times of crisis. In this work, Weick presents the reader with the disaster that took place in the area of Mann Gulch, which was initially caused by a lightning storm and led to the death of thirteen men in total. For Weick, the 1949 Mann Gulch disaster serves as the background to his 1993 work to illustrate the importance of sensemaking, improvisation, and team building among other concepts. Despite that the Mann Gulch disaster and Weick's interpretation are more than 40 years apart, Weick's work, 26 years later, still resonates very well within the organizational scholarship.

As such, in a similar fashion, our authors' blogposts, serve as the background to our study. Through them, we show that disillusionment, as triggered by IT features, initiates sensemaking, and it is this sensemaking that leads to one of the three accommodating practices of rejection, workaround or repositioning. We can see similar accommodating practices across the information systems literature, albeit not necessarily under the same names. For example, workarounds have been very much influential and authors have written quite extensively around them (e.g., Choudrie et al. 2016; Seethamraju 2015; Spierings et al. 2017). Rejection, similarly, has appeared in the literature, in different forms, e.g., discontinuance (Cao et al. 2019) and Soliman et al. (Soliman and Rinta-Kahila 2019) provide a thorough review of the different forms and conceptualizations this may take. Therefore, on the one hand, our findings resonate well with the existing literature despite the period our data have been collected, and on the other hand, the exhibit the timeliness we have seen in other studies on sensemaking (Kramer 2016).

As a result, we posit that despite the nature of our dataset, our findings remain relevant and interesting today insofar the overall process of sensemaking in times of disillusionment is concerned and with regard to how users move from sensemaking to accommodation when there is a disparity between expectations and outcomes. We believe that our findings with regard to the five different sensemaking paths and the three different user accommodating practices are of increased importance for researchers and practitioners alike, holding relevance and novelty, as they can be decoupled from the specificities of the technology and extended to similar IT artefacts, especially consumerized IT. Indeed, we expect similar findings would be relevant within a highly consumerized environment.

5.5 Future Directions

This study has argued for the investigation of experience with portable, touch-focused IT artifacts in a holistic fashion, by tracing users' sensemaking, when interaction satisfies user expectations and by drilling down to any uncertain and problematic conditions, investigating accommodating practices and user rationale. A possible way to advance research within this stream would be the investigation of these concepts within an organizational context, and to examine accounts of high-level employees (e.g., managers) and end-users (e.g., employees). Such an investigation may potentially yield important insights; by understanding the discrepancies between the two groups' sensemaking, it may be possible to grasp the reasons for which end users are often perceived to resist the implementation of IT events, or more generally, changes within the organizational structure. Second, a closer investigation may propose a way forward toward reconciling the needs of the two groups, by informing them regarding each other's rationale.

Concluding, methodologically-wise, future studies on sensemaking with an IT artifact, should take account of the particular demographics of that IT artifact's user group, and sampling should be guided by relevant market reports, while paying attention to theoretical sampling (Palys 2008), in order to achieve greater generalizability. Finally, we agree with Ortiz de Guinea's and Markus' call for an alternative approach to post-adoption (Ortiz de Guinea and Markus 2009). The authors argue that, when the focus is placed on the continuing IT use, traditional self-reporting research instruments, like interviews and surveys, are not the best means towards tapping into the processes that take place outside the user's awareness. Indeed, while interacting with IT well beyond the initial adoption stage, other factors may become more critical for one's post adoption behavior, like habit and emotions (Chen and Potter 2011; Clements and Bush 2011; Ouellette and Wood 1998), which are more difficult to report explicitly. In this case, observational techniques (e.g., shadowing), possibly in conjunction with other instruments, can truly offer greater insight into automatic behavior, habitual use and the less salient changes in mood and emotions, resulting from one's interaction with technology.

Acknowledgements The authors would like to thank Prof. Elena Karahanna and Prof. Arun Rai for their invaluable and constructive comments in an earlier version of this paper.

Nancy Pouloudi acknowledges the financial support of the Athens University of Economics and Business Research Center.

Appendix

Table 3 Chains of Evidence for the Elaboration Cycle, with reference to triggers

Trigger	Quotes
Connectivity	(B23, Q3): Gripe number 2 is the lack of a USB port and/or an SD card slot. I bought Apple's Camera Connection Kit for iPad but it seems a little strange for such a beautifully designed device to rely on what is essentially a dongle in order to connect to a camera or to flash media. With no power available from the iPad's dock-USB connector, few (if any) peripherals can be used with the iPad – even if there was software available to exploit them. For example, there are times when it would be good to hook up a webcam, and my main camera uses CF cards so, without a working card reader, there is no choice but to (slowly) download images from the camera over a USB cable, draining the camera's batteries in the process.
Application Translation	(B49, Q3): I use an excellent app called Blogsy, which I prefer to the official WordPress app for iOS. (I'd be even happier if I could just use full-blown WordPress in Safari, but it doesn't quite work.)
Flash support	(B31, Q1): It is comfortable to use and for emailing and web surfing there is no equal. Some web sites have not been fully optimised for the IPad – I am not just talking about the absence of Flash which, admittedly, can be annoying at times – but as time progresses this will improve (this, after all is still version 1).(B25, Q1): I've run up against the inability to view Flash and Silverlight streaming content about once every other day. It's annoying, but not a deal breaker for me.
Multitasking	(B48, Q1): You can only work on one thing at a time – I'm guessing that's a first generation thing. So there's a lot of flipping back and forth but things open exactly where you left off and they open quickly.
Form Factor	(B11, Q1): The downside to those premium materials is that there's a fair amount of heft to cope with. The first night I took the iPad to bed – for some Amazon Kindle app reading, after all it was only our first date – I soon gave up trying to hold up the tablet and reached for my Kindle instead; in contrast the dedicated ereader felt far more manageable, though also much less solid. I was also a little afraid of dosing off and having the iPad drop on my face and break my nose.(B4, Q2): The first day I had it, I rented a movie I have always loved, Blade Runner, and tried to watch it for over an hour before simply giving-up. I struggled to get in the right position where I could see it perfectly without glare and get in position where I did not have to hold the surprisingly heavy thing up in the air in the perfect position. After carefully piling up pillows on my lap, and adjusting them, I got it just right, until I got up to got to the bathroom, and readjustment took another 5 min.(B4, Q3): The Kindle is so much lighter, comfortable for me to hold in any position, especially holding it in the air for long periods in various positions (as I have been doing) as I read it in bed or sitting. In contrast not only does the weight of the iPad make it uncomfortable to read for even short periods in many different the same positions where a book or Kindle would work well, getting it positioned just right to avoid the glare adds a second variable to the struggle (a problem the Kindle's non-glare screen largely avoids, even though it lacks the beauty of the iPad screen).
Connectivity	(B19, Q2): I got my iPad the day they came out, and it was the wifi version. (..) So I ended up getting the mifi through verizon. I'm paying more than I would if I had a 3G iPad (…). I can use the mifi with all of my computers, so it was worth it but it is something that has given me pause.(B18, Q2): I don't think I am missing out yet having bought the non-3G version. Certainly I wouldn't have had to work so hard to fill my device up with documents if I had an always-on connection. But with the wi-fi only version I am not worried about paying more each month for the data downloads, and I do worry that I would end up using that a lot. I am actually considering getting a portable hotspot device (…) and that way my wife and I can both share the connection when we are traveling. We don't work in the same office, but if one of us needed it the other can give it up for the day. I think that would be a better solution, at least for my situation.
Directory Structure	(B17, Q1): As I think about what the first things that came to my mind when using the iPad the most common thought was "how the heck do you store a PDF file on it to view later?" That was one of my biggest initial frustrations with the iPad (knowing what I hoped to do with it initially). (...) The second frustration was the lack of a directory structure. I bought Keynote so that I could place ppt slides on the iPad. (…) But in Keynote all the files show up in one spot. (…) My first attempt to solve these issues was to use Evernote. (…) But it doesn't meet my needs either. (…) 3 days after I bought the iPad I noticed that one of the top paid apps (…) was called GoodReader. (…) I thought it might meet my needs. And it does!
File formats	(B5, Q1): I, uhm, acquired a bunch of movie classics (…). Use Permute to convert your existing movie files to the iPad format or buy your movies straight from iTunes. (…) To be honest, I did illegally download a bunch of movies. But, in my defense, these were all movies I already owned on DVD. The problem is that ripping a DVD you legally owned and then converting it just takes hours or days.
Flash support	(B29, Q1): (...) what he said about the iPad during it's launch back in January must always be taken with a pinch of salt (best ever web browsing experience? Without Flash? Pfft), but one thing he said does ring true; it is like holding the web in the palm of your hands.
Multitasking	(B11, Q2): I don't think I'm asking too much for wanting to browse the web while having Twitter and Spotify running in the background, something I can happily do on Android.(B11, Q4): It probably sounds like I've been terribly disappointed with my iPad experience, but in fact I'm gradually finding more and more ways to integrate it into my life. The mistake, perhaps, was in immediately trying to find how I could directly replace my usual workday tools with the new tablet. The sort of multitasking I do as a matter of course while blogging – flipping from browser to twitter to RSS to IM and more – isn't the best style of interacting with the iPad, and while you can certainly use it to prepare articles I'm still quicker on the MBP.

Table 4 Chains of Evidence for the Reframing Cycle, with reference to triggers

Trigger	Quotes
Flash Support	(B10, Q1): The biggest thing I realized from going iPad only is that it's a total waste of time to lug around the Macbook on days where I am doing a ton of commuting or have a lot of meetings. By and large, I was able to keep up with email, Facebook, the news, and deal with Google Docs and light spreadsheets / presentations on the iPad alone. When I was going iPad only, I basically just deferred any long emails until I got home (which was generally okay) and deferred playing Flash-based Facebook games until I had a Flash-capable device.
New cognitive ergonomics	(B33, Q1): I often forget and press the home button, not the open-windows icon, while in Safari. (Home works in webOS to see multiple open browser windows). (…) I'll readily admit that some of this may just be a case of retraining my finger memory from Palm Pre's gestures, which feel intuitive after a year and a half, to the iPad's, which are still new to me.
Multitasking	(B49, Q4): When you use a Windows PC–and, to a somewhat lesser extent, a Mac–you get dragged down by the responsibilities and obligations of using a computer. (…) With the iPad, all that goes away. You can devote nearly every second of your time to the task at hand, rather than babysitting a balky computer.
Typing-intensive tasks	- See also (B10, Q1) above.(B10, Q2): There was one very unexpected surprise. The iPad is a much more capable all-day computer than my Macbook. I generally can't get more than 2–3 h of useful stuff done on my Macbook on a single charge. On the flipside, my iPad is able to last an entire day on a single charge with nearly constant use. (…) At least 2–3 days per week I have a combination of commute and meetings that basically make the laptop useless. When I'm on the go, I rarely get the opportunity to sit down, plug in, and get enough work done to justify lugging around the laptop.(B42, Q1): I have installed the WordPress app for the iPad, but I still tend to write these posts on the laptop. The reason for that is that the rich-text interface for WordPress is not available in the app, and does not appear to work in the version of Safari that runs on the iPad. Now, I know plenty of HTML, but having to write the HTML myself slows me down and I really don't have the time to slow down in order to keep up with the blog posts. So while I have written one or two posts directly on the iPad, most of them are still written on the laptop.(B49, Q2): Without the ZaggFolio, I used the iPad mostly for reading and light productivity. I'd happily type brief e-mails on it, but never anything as long as a meaty blog post or article. But Zagg's no-compromise keyboard made typing every bit as comfy as it is on a notebook. All of a sudden I could write hundreds of words on the iPad. Or thousands of them.
Directory Structure	(B9, Q3): The other major reason that blogging on the iPad is hard is because of picture resizing and uploading. Nevermind that there isn't a camera, there isn't a file system to download pictures off the Internet that could be used to resize. Also, while there are a few image apps out there for the iPad, none that I've tried work all that well, and again, without a file system, getting pictures uploaded to Wordpress is impossible (as far as I can tell).(B21, Q1): DropBox: A life-saver and a great replacement for the lack of universal file storage on the iOS platform.(B21, Q2): But one of the biggest problems with iPad that is preventing it from showing its great potential is the software limitations imposed by the fundamental design and business strategies. This has limited the opportunities for implementing very good ideas on iPad tablets. For example, the lack of a universal file storage system doesn't let developers implement many good features in their applications.
Typing-intensive tasks	(B9, Q1): I took notes at the DC conference on the iPad, which turned into three posts. However (…) all these posts came at best hours after the sessions because I didn't actually post any of these stories to WordPress using the iPad. There are a few reason why (at present) trying to blog from the iPad isn't a good idea. First of all, even though I've had my iPad for a number of weeks, I still haven't reached what I would consider an acceptable typing speed using the on-screen keyboard. (...) Of course, perhaps if I had purchased a keyboard, a lot of my typing woes may have decreased, although I imagine that autocorrect would still be a pain. (...). However, I'd be lying if I said that I'm not going to take a closer look at the pros and cons of getting a keyboard soon. (…) So to make a long story short, I gave up and borrowed laptops (one per continent) to do all of my posts.
File formats	(B18, Q1): (…) I did hope that the iPad would show my work well. It does, but since I primarily shoot in RAW format I have to convert everything to jpg files for the ipad to display them.
Application Translation	(B49, Q9): When I started using the iPad as my primary device (…) I thought that Photoshop would be simply irreplaceable. Then I discovered that I could do about 85% of the things I do with Photoshop by using several iPad apps together as an ad-hoc graphics suite, including PhotoForge2, TouchDraw, and others. Photoshop remains the more powerful tool, and on the iPad, I only have access to the fonts that Apple provides. But I can apply fancy effects, layer together multiple images into a collage, and dress up type on the iPad. (Wait, how can you match the precision of a mouse and the efficiency of a big-screen display with the iPad's touch interface and dinky screen? Well…you can't. But for most of my day-to-day needs I can come closer than I would have expected before I gave it a shot.).
Flash support	(B23, Q2): I know Flash is a nuisance, and I would love to see a web of standards-compliant sites using HTML5 to deliver dynamic content, but I also live in the real world, and when sites like the BBC's weather page don't work properly on the iPad, it's a bloody nuisance.
New cognitive ergonomics	(B40, Q2): (…) my muscle memory has me reaching for a mouse again and again. I imagine that once I've written on the iPad enough, I'll get used to touching the screen instead of reaching for the mouse.
Multitasking	(B36, Q1): The one thing I thought would be a negative in the beginning, turned out to be a positive. I'm referring to the iPad's lack of ability to multi-task. When you're doing email, you're doing email full screen. You have to go back to the home screen, and touch another icon to switch to a different program or application. (…) Once you get used it that, you realize how efficient you are with the lack of distraction.

References

Albashrawi, M., & Motiwalla, L. (2019). Privacy and personalization in continued usage intention of Mobile banking: An integrative perspective. *Information Systems Frontiers, 21*(5), 1031–1043. https://doi.org/10.1007/s10796-017-9814-7.

Alvarez, R. (2008). Examining technology, structure and identity during an enterprise system implementation. *Information Systems Journal, 18*(2), 203–224. https://doi.org/10.1111/j.1365-2575.2007.00286.x.

Atkinson, P. (2008). A bitter pill to swallow: The rise and fall of the tablet computer. *Design Issues, 24*(4), 3–25.

Azad, B., & King, N. (2011). Institutionalized computer workaround practices in a Mediterranean country: An examination of two organizations. *European Journal of Information Systems, 21*(4), 358–372.

Bagayogo, F. F., Beaudry, A., & Lapointe, L. (2013). *Impacts of IT acceptance and resistance behaviors: A novel framework*. Presented at the International Conference of Information Systems, Milan, Italy (ICIS 2013).

Beaudry, A., & Pinsonneault, A. (2005). Understanding user responses to information technology: A coping model of user adaptation. *MIS Quarterly, 29*(3), 493–524.

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

Bhattacherjee, A., & Premkumar, G. (2004). Understanding changes in belief and attitude toward information technology usage: A theoretical model and longitudinal test. *MIS Quarterly, 28*(2), 229–254. https://doi.org/10.2307/25148634.

Boudreau, M.-C., & Robey, D. (2005). Enacting integrated information technology: A human agency perspective. *Organization Science, 16*(1), 3–18.

Brown, J. S., & Newman, S. E. (1985). Issues in cognitive and social ergonomics: From our house to Bauhaus. *Human–Computer Interaction, 1*(4), 359–391.

Cao, X., Khan, A. N., Ali, A., & Khan, N. A. (2019). Consequences of cyberbullying and social overload while using SNSs: A study of users' discontinuous usage behavior in SNSs. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-019-09936-8.

Charmaz, K. (2001). Grounded theory in the 21st century: Applications for advancing social justice studies. In N. K. Denzin & Y. Lincoln (Eds.), *The American tradition in qualitative research* (Vol. 2, pp. 244–285). London: Sage.

Chen, Y., & Potter, R. (2011). The role of habit in post-adoption switching of personal information technologies: An empirical investigation. *Communications of the Association for Information Systems, 28*, 585–610.

Chenail, R. (2008). Categorization. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (Vol. 1 & 2, pp. 72–73). Los Angeles, London, New Delhi, Singapore: SAGE.

Choudrie, J., Zamani, E. D., Krepel, B., & Stewart, M. A. (2016). Understanding individual user resistance and workarounds of enterprise social networks: The case of service Ltd. *Journal of Information Technology, 31*(2), 130–151. https://doi.org/10.1057/jit.2016.9.

Clements, J. A., & Bush, A. A. (2011). *Habitual IS Use and Continuance*. Presented at the Southern Association for Information Systems Conference, Atlanta, GA (SAIS 2011). Retrieved from http://aisel.aisnet.org/sais2011/16

D'Adderio, L. (2011). Artifacts at the centre of routines: Performing the material turn in routines theory. *Journal of Institutional Economics, 7*(2), 197–230.

Dang-Pham, D., Pittayachawan, S., Bruno, V., & Kautz, K. (2019). Investigating the diffusion of IT consumerization in the workplace: A case study using social network analysis. *Information Systems Frontiers, 21*(4), 941–955. https://doi.org/10.1007/s10796-017-9796-5.

Dervin, B. (1983). *An overview of sense-making research: Concepts, methods, and results to date*. Presented at the International Communication Association Annual Meeting, Dallas, Texas, USA, May l983.

Elbanna, A., & Linderoth, H. C. J. (2015). The formation of technology mental models: The case of voluntary use of technology in organizational setting. *Information Systems Frontiers, 17*(1), 95–108. https://doi.org/10.1007/s10796-014-9513-6.

Ferneley, E. H., & Sobreperez, P. (2006). Resist, comply or workaround? An examination of different facets of user engagement with information systems. *European Journal of Information Systems, 15*(4), 345–356.

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

Gregory, R. W., Kaganer, E., Henfridsson, O., & Ruch, T. J. (2018). IT consumerization and the transformation of IT governance. *MIS Quarterly, 42*(4), 1225–1253.

Griffith, T. L. (1999). Technology features as triggers for sensemaking. *Academy of Management Review, 24*(3), 472–488.

Hookway, N. S. (2008). 'Entering the blogosphere': Some strategies for using blogs in social research. *Qualitative Research, 8*(1), 91–113.

Huuskonen, S., & Vakkari, P. (2013). "I did it my way": Social workers as secondary designers of a client information system. *Information Processing & Management, 49*(1), 380–391.

Jasperson, J., Carter, P. E., & Zmud, R. W. (2005). A comprehensive conceptualization of post-adoptive behaviors associated with information technology enabled work systems. *MIS Quarterly, 29*(3), 525–557. https://doi.org/10.2307/25148694.

Kim, J. U., & Kishore, R. (2018). Do we fully understand information systems failure? An exploratory study of the cognitive schema of IS professionals. *Information Systems Frontiers.*, 1–35. https://doi.org/10.1007/s10796-018-9838-7.

Klein, D. E., Klein, H. A., & Klein, G. (2000). Macrocognition: Linking cognitive psychology and cognitive ergonomics. Proceedings of the 5th International Conference on Human Interactions with Complex Systems, Urbana-Champaign: University of Illinois at Urbana-Champaign, 173–177.

Klein, G., Moon, B., & Hoffman, R. R. (2006a). Making sense of sensemaking 1: Alternative perspectives. *IEEE Intelligent Systems, 21*(4), 70–73. https://doi.org/10.1109/MIS.2006.75.

Klein, G., Moon, B., & Hoffman, R. R. (2006b). Making sense of sensemaking 2: A macrocognitive model. *IEEE Intelligent Systems, 21*(5), 88–92. https://doi.org/10.1109/MIS.2006.100.

Klein, G., Phillips, J. K., Rall, E. L., & Peluso, D. A. (2007). In R. R. Hoffman (Ed.), *A data/frame theory of sensemaking*. Lawrence Erlbaum Associates, Taylor & Francis Group.

Koopman, P., & Hoffman, R. R. (2003). Work-arounds, make-work, and kludges. *IEEE Intelligent Systems, 18*(6), 70–75.

Kramer, M. W. (2016). Sensemaking. In C. R. Scott, J. R. Barker, T. Kuhn, J. Keyton, P. K. Turner, & L. K. Lewis (Eds.), *The international encyclopedia of organizational communication* (pp. 1–10). https://doi.org/10.1002/9781118955567.wbieoc185.

Krishnaraju, V., Mathew, S. K., & Sugumaran, V. (2016). Web personalization for user acceptance of technology: An empirical

investigation of E-government services. *Information Systems Frontiers, 18*(3), 579–595. https://doi.org/10.1007/s10796-015-9550-9.

Kwahk, K.-Y. (2011). *Investigating the coping mechanism towards technochanges: A perspective of social network theory* (pp. 1–10). https://doi.org/10.1109/HICSS.2011.253.

Lazarus, R. S. (1993). Coping theory and research: Past, present, and future. *Psychosomatic Medicine, 55*(3), 234–247.

Liang, H., & Xue, Y. (2009). Avoidance of information technology threats: A theoretical perspective. *MIS Quarterly, 33*(1), 71–90.

Malakis, S., & Kontogiannis, T. (2013). A sensemaking perspective on framing the mental picture of air traffic controllers. *Applied Ergonomics, 44*(2), 327–339.

Markus, M. L. (1983). Power, politics, and MIS implementation. *Communications of the ACM, 26*(6), 430–444.

Mesgari, M., & Okoli, C. (2019). Critical review of organisation-technology sensemaking: Towards technology materiality, discovery, and action. *European Journal of Information Systems, 28*(2), 205–232. https://doi.org/10.1080/0960085X.2018.1524420.

Moore, D. T., & Hoffman, R. R. (2011). Data-frame theory of sensemaking as a best model for intelligence. *American Intelligence Journal, 29*(2), 145–158.

Nach, H., & Lejeune, A. (2010). Coping with information technology challenges to identity: A theoretical framework. *Computers in Human Behavior, 26*(4), 618–629. https://doi.org/10.1016/j.chb.2009.12.015.

Niehaves, B., Koffer, S., & Ortbach, K. (2012). IT Consumerization—A theory and practice review. *Americas Conference on Information Systems (AMCIS 2012)*. Presented at the Americas conference on information systems (AMCIS 2012).

Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology, 35*(4), 250–256.

Orlikowski, W. (1993). CASE tools as organizational change: Investigating incremental and radical changes in systems development. *MIS Quarterly, 17*(3), 309–340.

Orlikowski, W. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science, 11*(4), 404–428.

Orlikowski, W., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research, 2*(1), 1–28.

Ortiz de Guinea, A., & Markus, M. L. (2009). Why break the habit of a lifetime? Rethinking the roles of intention, habit, and emotion in continuing information technology use. *MIS Quarterly, 33*(3), 433–444. https://doi.org/10.2307/20650303.

Ouellette, J. A., & Wood, W. (1998). Habit and intention in everyday life: The multiple processes by which past behavior predicts future behavior. *Psychological Bulletin, 124*(1), 54–74.

Palys, T. (2008). Purposive sampling. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (Vol. 1 & 2, pp. 697–698). Los Angeles, London, New Delhi, Singapore: SAGE.

Pirolli, P., & Russell, D. M. (2011). Introduction to this special issue on Sensemaking. *Human–Computer Interaction, 26*(1–2), 1–8. https://doi.org/10.1080/07370024.2011.556557.

Riemer, K., Overfeld, P., Scifleet, P., & Richter, A. (2012). Eliciting the anatomy of technology appropriation processes: A case study in Enterprise social media. *European Conference of Information Systems (ECIS 2012)*.

Röth, T., & Spieth, P. (2019). The influence of resistance to change on evaluating an innovation project's innovativeness and risk: A sensemaking perspective. *Journal of Business Research, 101*, 83–92. https://doi.org/10.1016/j.jbusres.2019.04.014.

Seethamraju, R. (2015). Adoption of Software as a Service (SaaS) Enterprise Resource Planning (ERP) Systems in Small and Medium Sized Enterprises (SMEs). *Information Systems Frontiers, 17*(3), 475–492. https://doi.org/10.1007/s10796-014-9506-5.

Sieck, W. R., Klein, G., Peluso, D. A., Smith, J. L., & Harris-Thompson, D. (2007). *FOCUS: A model of sensemaking*. United States Army Research Institute for the Behavioral and Social Sciences. Technical Report 1200.

Silic, M., & Lowry, P. B. (2019). Breaking bad in cyberspace: Understanding why and how black hat hackers manage their nerves to commit their virtual crimes. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-019-09949-3.

Smith-Sullivan, K. (2008). Diaries and journals. In L. M. Given (Ed.), *The SAGE encyclopedia of qualitative research methods* (Vol. 1 & 2, pp. 213–215). Los Angeles, London, New Delhi, Singapore: SAGE.

Soliman, W., & Rinta-Kahila, T. (2019). Toward a refined conceptualization of IS discontinuance: Reflection on the past and a way forward. *Information & Management*, 103167. https://doi.org/10.1016/j.im.2019.05.002.

Spierings, A., Kerr, D., & Houghton, L. (2017). Issues that support the creation of ICT workarounds: Towards a theoretical understanding of feral information systems. *Information Systems Journal, 27*(6), 775–794. https://doi.org/10.1111/isj.12123.

Sprenger, M., Mettler, T., & Winter, R. (2017). A viability theory for digital businesses: Exploring the evolutionary changes of revenue mechanisms to support managerial decisions. *Information Systems Frontiers, 19*(4), 899–922. https://doi.org/10.1007/s10796-016-9638-x.

Statista (2019). *Tablet market share by vendor 2019*. Retrieved October 18, 2019, from Statista website: https://www.statista.com/statistics/276635/market-share-held-by-tablet-vendors/.

Urquhart, C. (2012). *Grounded theory for qualitative research. A practical guide*. London: SAGE Publications Ltd..

Urquhart, C., & Fernández, W. (2006). Grounded theory method: The researcher as blank slate and other myths. International conference information systems (ICIS 2006), 457–464.

Venkatesh, V., Thong, J. Y. L., Chan, F. K. Y., Hu, P. J.-H., & Brown, S. A. (2011). Extending the two-stage information systems continuance model: Incorporating UTAUT predictors and the role of context. *Information Systems Journal, 21*(6), 527–555.

Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems, 4*(2), 74–81.

Weeger, A., Wang, X., Gewald, H., Raisinghani, M., Sanchez, O., Grant, G., & Pittayachawan, S. (2018). Determinants of intention to participate in corporate BYOD-programs: The case of digital natives. *Information Systems Frontiers*. https://doi.org/10.1007/s10796-018-9857-4.

Weick, K. E. (1988). Enacted sensemaking in crisis situations. *Journal of Management Studies, 25*(4), 305–317.

Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly, 38*(4), 628–652.

Weick, K. E. (1995). *Sensemaking in organisations*. London: Sage.

Weick, K. E. (2010). Reflections on enacted sensemaking in the Bhopal disaster. *Journal of Management Studies, 47*(3), 537–550. https://doi.org/10.1111/j.1467-6486.2010.00900.x.

Efpraxia D. Zamani is a Senior Lecturer of Information Systems at the Information School, The University of Sheffield, UK. Her research is focused on post-adoption user behaviour and ICT4D. Her research work has been published in journals such as the Journal of Information Technology, Government Information Quarterly and the International Journal of Electronic Commerce, and she is a member of the Editorial

Review Boards of the Industrial Management and Data Systems (IMDS) and the Journal of Global Information Technology Management.

Nancy Pouloudi is Professor of Information Systems Management in the Department of Management Science and Technology at the Athens University of Economics and Business, Greece. She holds a PhD in Information Systems from the London School of Economics. Her research focuses on organizational and social issues in information systems adoption and implementation. She is a member of the Editorial Boards of the Journal of the AIS, Information & Management, Health Policy & Technology, and the International Journal of Society, Information, Communication & Ethics. She has served on the editorial boards of the European Journal of Information Systems and IT & People as well as on the Committees of the European (ECIS) and the Mediterranean (MCIS) Conference on Information Systems. In the period 2010–2013 she was Region 2 (Europe/Middle East/Africa) Representative of the Association for Information Systems (AIS). In 2016 she received the Sandra Slaughter Service Award of the AIS.

George Giaglis is Professor of eBusiness at the Athens University of Economics and Business, Greece, and the General Director of the Institute for the Future of the University of Nicosia, Cyprus. His research interests are focused on the Blockchain technology, the Internet of Things, and Artificial Intelligence. He has previously worked with the University of the Aegean (Greece) and Brunel University (UK), while he has held visiting posts in universities in the UK, Australia, USA and Finland. He has published more than 130 articles in leading journals and international conferences, including the Information Systems Journal, the International Journal of Electronic Commerce, and the International Journal of Information Management.

Jonathan Wareham is Professor/Catedrático of Information Systems of ESADE Business & Law Schools, Ramon Llull University. He previously served as Dean (Faculty & Research) and Vice Dean (Research). Dr. Wareham's research has been published, or is forthcoming, in over 80 refereed journals and proceedings such as Organization Science, Decision Sciences, MIS Quarterly, Decision Support Systems, IEEE Transactions on Engineering Management, IEEE Computer, Journal of Medical Internet Research, Journal of the American Society for Information Science and Technology, International Journal of Medical Informatics and numerous others. He serves as Senior Editor of MIS Quarterly, and has held/holds editorial positions with Information Systems Research, Journal of Information Technology, Journal of the Association for Information Systems, Information & Organization and Journal of Strategic Information Systems.