HOW EPHEMERALITY FEATURES AFFECT USER ENGAGEMENT WITH SOCIAL MEDIA PLATFORMS[1]

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User engagement, a key factor in the success of social media platforms, has long been based on permanent content. A recent paradigm shift in platform design has led large social media providers to implement ephemerality features that by default make shared content disappear after a certain amount of time. However, very little is known about how ephemerality features affect user engagement and behavior in social media. Drawing upon the technology affordance perspective, we conducted a qualitative multimethod study involving individual interviews and focus groups. Our findings show that the affordances arising from features with varying degrees of ephemerality (i.e., snaps and stories) differ from those of permanent content features in terms of self-presentation, browsing others' content, and communication. Adopting a multidimensional conceptualization of user engagement, we show the positive (e.g., more content sharing) and negative (e.g., cognitive burden from context loss) effects for snaps and stories that should be cautiously considered by social media platforms aiming to introduce such features. Finally, we reveal new user behaviors that relate to sharing snapshots of fleeting value as snaps or experiences of transient value as stories.

Keywords: Ephemerality features, social media platforms, user engagement, technology affordances

Introduction

User engagement is vital to digital platforms' survival. Social media platforms (SMPs) that fail to engage users may be abandoned (Parker et al., 2016), while those that are highly engaging are likely to attain superior outcomes, including high traffic, user loyalty, and positive word of mouth (Ray et al., 2014). User engagement manifests in greater usage of and contributions to an SMP; e.g., users interact and share content readily with others as well as bond with SMPs cognitively and emotionally (Hollebeek & Chen, 2014). The more that users engage with an SMP, the more valuable it becomes to other users, advertisers, or app developers (Parker et al., 2016), and

the more it creates opportunities for service innovation (Dou et al., 2013) and value co-creation (Brodie et al., 2013; Hollebeek et al., 2019). Thus, SMP strategies must go beyond attracting new users and ensure that current users remain active and engaged with the platform in the long term.

Promoting user engagement on SMPs has long been thought to require permanent content (boyd, 2010). By enabling users to "like," comment on, and share permanent user- or firm-generated content, SMPs foster social interactions among users (Xu et al., 2019) to increase traffic and allow firms to achieve marketing goals (Lee et al., 2018), which increases SMP's advertising revenues. However, a recent paradigm shift in SMP design that integrates ephemerality features (i.e., uploaded

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content disappears after a short time by default) (Chen & Cheung, 2019) challenges the view that content permanence is the main driver of value creation (Cavalcanti et al., 2017). First introduced by Snapchat in 2011, ephemerality features have been fundamental in defining the platform's value proposition (Piwek & Joinson, 2016). Other popular SMPs such as Facebook, Instagram, and WhatsApp have since implemented ephemerality features (Constine, 2019).

The growing popularity of ephemerality features brings new challenges to the design and development of SMPs, and we do not yet know their effects on user engagement and user behavior. Initial research has indicated both positive effects (e.g., willingness to share more personal information, fun) and negative ones (e.g., annoyance, loss, and regret) (Bayer et al., 2016; Morlok et al., 2018; Piwek & Joinson, 2016). Ephemerality features seem to influence not only the behavioral dimension of user engagement but also the underlying emotions and cognition. Thus, it is important to systematically analyze the relationships between ephemerality features and user engagement to develop a basis for future studies on this important and emergent topic. Investigating the effects of ephemerality features on user engagement also supports SMPs by enabling them to (1) understand the implications of ephemerality features in the social media context and (2) identify new forms of value creation for their participants. We therefore ask: *How do ephemerality features affect user engagement with social media platforms?*

In the present research, we used a qualitative multimethod approach (Mingers, 2001) involving 37 individual interviews, followed by 15 focus groups with active Snapchat users, adopting technology affordances (Leidner et al., 2018; Volkoff & Strong, 2013) as our theoretical lens.

Related Research and Conceptual Basis ∎

User Engagement with Social Media Platforms

Research on SMPs has devoted much attention to the issue of user engagement. However, there is no consensus on the definition of user engagement (Xu et al., 2019). Most researchers adopt a behavioral focus, investigating, at a platform level, variables such as frequency of visits and time spent on the SMP (Hollebeek et al., 2014), or at a content level, users' creation, consumption, and responses to content (e.g., liking, commenting, sharing) (Xu et al., 2019).

We expand the concept of user engagement by adopting a multidimensional conceptualization encompassing the behavioral, emotional, and cognitive dimensions, which has been widely applied in marketing research (Brodie et al., 2013; Hollebeek, 2011; Hollebeek & Chen, 2014; Hollebeek et al., 2014) and received some attention in information systems (IS) research (Ray et al., 2014; O'Brien et al., 2020). We build on Hollebeek's (2011) definition of customer brand engagement in marketing, which refers to "the level of an individual customer's motivational, brand-related and context-dependent state of mind characterized by specific levels of cognitive, emotional and behavioral activity in direct brand interactions" (p. 790). Thus, we define user engagement as a user's technology-related state of mind characterized by specific cognitive, emotional, and behavioral manifestations during interactions with technology. Cognitive engagement refers to users' positively or negatively valenced thoughts, concentration, and reflections during an interaction with a technology feature (Hollebeek & Chen, 2014), such as attention and absorption. Emotional engagement refers to users' affective reactions during an interaction with a technology feature (Hollebeek & Chen, 2014), which includes positive feelings such as enjoyment or pride (Hollebeek et al., 2014) and negative feelings such as doubt, frustration, anxiety, or guilt (O'Brien & Toms, 2008). Lastly, behavioral engagement refers to users' behavioral interactions with a technology feature (Hollebeek & Chen, 2014) such as content creation, content consumption, and responses (Chen & Cheung, 2019).

Ephemeral Content in Social Media

Permanence and ephemerality are attributes of technology (Leidner et al., 2018) that define the default system settings for how long users can access content. Many SMPs are characterized by content permanence. They display posted content indefinitely by default unless users delete it, and accessing it is just a matter of finding it. The concept of ephemerality describes the content property of being viewable only transiently rather than permanently (Cavalcanti et al., 2017). SMPs introduced ephemerality features[2] to encourage more content sharing (Morlok et al., 2018; Utz et al., 2015).

Most studies on ephemerality have taken a human-centered perspective and focused on user characteristics (Grieve, 2017) and motivations (Utz et al., 2015), fostering the adoption and use of SMPs with ephemerality features (e.g., Piwek & Joinson, 2016; Roesner et al., 2014). Motivations such as enjoyment (e.g., Bayer et al., 2016; Piwek & Joinson, 2016), social interaction and socialization (e.g., Roesner et al., 2014; Utz et al., 2015), and

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[2] Ephemerality does not necessarily imply that content is *not* stored in an SMP's database, although SMPs such as Snapchat claim their servers delete all content automatically after being viewed by all receivers, or after remaining unopened for 30 days (Snapchat Inc., n.d.). Screenshotting content could undermine ephemerality (Cavalcanti et al., 2017). However, the Snapchat app notifies users when someone takes a screenshot of their content.

self-expression (Alhabash & Ma, 2017; Flecha-Ortiz et al., 2021) were found to be prominent. Empirical studies on Snapchat have shown that users mainly interact with close ties (Piwek & Joinson, 2016; Vaterlaus et al., 2016) to exchange funny and mundane content—those in-between moments that are not worth saving (Alhabash & Ma, 2017; Bayer et al., 2016; Grieve, 2017). Users mainly share selfies and "funny things" rather than sensitive content (e.g., sexting) (Roesner et al., 2014). However, disclosure of sensitive information, such as sexual orientation or private health (Birnholtz et al., 2020) and cyberbullying behaviors (Vaterlaus et al., 2016), still occur. Finally, Snapchat use has been associated with addictive behaviors (Punyanunt-Carter et al., 2017).

Few studies have examined user engagement with SMPs utilizing ephemerality features. Chen and Cheung (2019) showed that users' motivations for gratification (e.g., fear of missing out) drive behavioral engagement with ephemeral content. Although behavioral engagement is an important dimension, it does not capture nuances due to emotional and cognitive engagement, for example, the user's positive (e.g., joy) or negative affective reactions (e.g., pressure, anxiety) when interacting with ephemerality features. Moreover, most previous research on ephemerality has centered on Snapchat, analyzing the SMP in general (e.g., regarding user characteristics or motivations) or focusing on the "snaps" feature that characterizes Snapchat. Little attention has been paid to features with a lower degree of ephemerality—stories (Birnholtz et al., 2020; Chen & Cheung, 2019; Kreling et al., 2022).

Affordance Perspective

Prior studies of user engagement have focused primarily on the user perspective, investigating user perceptions and behaviors when interacting with technology. This perspective does not explicitly account for the influence of technology features that enable or constrain users' interactions with the technology. By introducing the affordance perspective, we can focus on the interactions between users and technology, exploring the behavioral, emotional, and cognitive manifestations of engagement, while identifying new user behaviors.

Affordances describe what is offered or provided to an actor by an object. In IS, affordances are the possibilities for action arising from the relation between an IT artifact and a goal-oriented actor or actors (Volkoff & Strong, 2013). Grounded in a critical realist stance, affordances are action possibilities for goal-directed actors that exist independently of whether the actor perceives them (Volkoff & Strong, 2013, 2017; Leidner et al., 2018). However, to generate outcomes, affordances must be actualized. This requires an actor with the necessary capabilities and a goal served by realizing the action potential (Volkoff & Strong, 2013). Hence, actors may enact

a particular affordance differently, resulting in different outcomes, which makes the actualization of an affordance a non-deterministic process (Volkoff & Strong, 2017). Moreover, the multiple affordances arising from the object-actor relation are interconnected and interdependent in various ways (Strong et al., 2014). Volkoff and Strong (2017) emphasized the value of connecting affordances with associated technology features to better understand and conceptualize the IT artifact that informs artifact design.

The concept of affordances is well-suited for analyzing the action possibilities that emerge from users interacting with features of SMPs (Karahanna et al., 2018). Several IS researchers have investigated social media affordances conceptually and empirically. Conceptually, Karahanna et al. (2018) proposed that psychological needs (e.g., autonomy) motivate the use of SMPs that provide features whose affordances satisfy these needs. Majchrzak et al. (2013) focused on SMPs for knowledge sharing in organizations and proposed affordances representing different ways that users engage in knowledge conversations. Empirically, Vaast et al. (2017) identified collective-level affordances actualized by users interacting via microblogging during an environmental accident. Koroleva and Kane (2017) found that relational affordances (i.e., tie strength) influence the information processing of content on SMPs. Leidner et al. (2018) showed that the affordances of enterprise social media (i.e., networking, organizational visibility, information gathering/sharing, and innovation affordances) affect the socialization of new employees. They argued that the actualization of affordances by one group of actors can have implications for another group of actors. Moreover, they clearly distinguished between features, use, affordances, and outcomes—a methodological approach that we adopted.

The studies discussed in this section investigated social media affordances related to permanent content. Ephemerality features may afford new action possibilities for users (Morlok et al., 2018) which lead to new types of user behavior and different patterns of engagement with the related features of an SMP (Chen & Cheung, 2019).

Methodology

Research Approach and Setting

We aim to explicate how ephemerality features influence user engagement on SMPs through affordances. Adopting a critical realist stance (Bhaskar, 2008), we view affordances as generative mechanisms, causal structures that explain *how* and *why* empirical outcomes occur (Volkoff & Strong, 2013; Williams & Karahanna, 2013). Although critical realism is

eclectic in terms of research methods (Mingers et al., 2013), qualitative methods play a more prominent role in capturing the complex nature of the phenomena being researched. As critical realism encourages combining different research methods in order to obtain richer, more reliable results (Mingers, 2001; Mingers et al., 2013), we employed two qualitative research methods with distinct foci: (1) individual interviews and (2) focus groups consisting of active Snapchat users.

As an empirical context, we chose the mobile instant messaging service Snapchat, which was the first SMP based on ephemerality features, and still maintains a leading market position (Statista, 2022). Ephemerality is manifested by two main technology features. The *snap feature* allows users to take pictures or short video clips, edit and send them as "snaps" to specifically selected receivers, accessible from 1 to 10 seconds depending on the sender's choice.[3] The *story feature* makes content accessible for 24 hours for a selected group or all of the sender's contacts (Grieve, 2017). Snapchat constrains social feedback such as public "likes" or comments. The "seen" confirmation is the only indication for a sender that receivers have viewed the content. However, receivers can reply to snaps and stories by sending text messages, pictures, or videos.

Data Collection

Sampling

We used purposive sampling to select the study participants. This sampling technique is common in research aimed at studying a specific phenomenon (Patton, 2002), e.g., the effect of content ephemerality on user engagement in an SMP. Our use of this technique involved identifying and selecting individuals who are highly experienced with Snapchat. We followed a maximum variation strategy, targeting information-rich cases, and documented variations among different participants using the different ephemerality features (Patton, 2002). This strategy allowed us to look for shared patterns across individuals' cases and derive their significance from their emergence out of heterogeneity.

Our respondents were primarily young adults and adolescents, as they represent the main user groups of SMPs with ephemerality features (Grieve, 2017; Vaterlaus et al., 2016). We targeted high school students who have a relatively stable lifestyle due to school obligations, as well as young adults with a wider exposure to life experiences. Participants needed to have been Snapchat users for at least six months prior to the

interviews. We excluded individuals who used the application less than once per week. Participants were recruited through social media, university email distribution lists, or, in the case of high school students, personal connections with high school principals. There was no overlap between interview and focus group participants. Parental consent was acquired for participants younger than 16 years.

We conducted 37 semi-structured one-on-one interviews, during which we reached data saturation (Miles et al., 2014). Interviewees spent an average of 37 minutes on Snapchat daily and 162 minutes on other SMPs (e.g., Facebook, Instagram, WhatsApp). On average, they sent 104 snaps per week and received 113 snaps from other users. Interviewees had an average of 57 Snapchat friends. Our 15 focus groups consisted of 68 Snapchat users (see Appendix A in the online supplement at https://osf.io/yhd34). Most had used Snapchat for at least two years for more than an hour per day.

Data Collection Methods

Multiple researchers conducted the interviews and focus groups to ensure that differences in our data reflected differences between the interviewees and their contexts rather than the interviewers' potential biases, motivations, or perspectives. All interviews and focus groups were conducted face-to-face in German, the participants' native language, audio recorded with participants' consent, and later transcribed verbatim for data analysis and translated into English using DeepL. Participants were informed in advance that the data would be used in a research project and were assured anonymity to ensure the integrity of the information obtained.

(a) **Individual interviews:** The interviews provided in-depth insights into users' interactions with Snapchat and its features. The interview guide comprised open-ended questions (see Appendix B in the online supplement at https://osf.io/yhd34) about user behavior on SMPs along with specific perceptions, use motivations, and use patterns on Snapchat. Interviews lasted 36 minutes on average. As an incentive, each interviewee received a €5 Amazon gift voucher following the interview.

(b) **Focus groups:** We conducted 15 focus groups following the guidelines presented by Fern (2001) and Krueger (2014). Each group contained four to six participants, selected to ensure within-group homogeneity and across-group heterogeneity (Fern, 2001). We formed groups that were homogeneous in terms of age, gender, and educational background in order to make participants comfortable sharing their experiences and emotions and engaging in a free-flowing conversation. Most

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[3] The infinity feature allows receivers to watch snaps as long as they want to, but the content disappears after receivers close the message (Morlok et al., 2018).

participants knew at least one other member of their group. Across-group heterogeneity allowed us to draw on various perspectives by recruiting participants of different ages, educational attainment, and professional backgrounds. For the group discussion, the moderator used a semi-structured interview guide (see Appendix C in the online supplement at https://osf.io/yhd34). The focus groups delved deeper into how affordances of ephemerality features lead to specific manifestations of user engagement and new types of user behavior. Participants described their use of ephemerality features in Snapchat and compared it to other SMPs offering permanent and ephemeral content features, i.e., Instagram, Facebook, and WhatsApp. The focus groups provided additional, rich empirical data due to the interactions between the interviewees and the dialogues that unfolded between them (Morgan, 1997). The moderator's level of involvement was low, and the dynamic in each group evolved on its own. Participants moved to new topics as they saw fit, although the discussion remained focused through the moderator's prepared probing and ad hoc questions. The focus groups' length ranged from 50 to 80 minutes, with an average of 68 minutes. As an incentive, we provided soft drinks and pizza during the focus groups.

Data Analysis

Three of the authors coded and analyzed the data independently. Differences among the resulting codings were discussed and resolved with the help of the fourth author, who took a fresh look at the data and the coding. The data analysis process involved four steps.

The *first step* involved open coding of the transcripts to identify the use of ephemerality features in relation to snaps and stories. In the *second step*, we looked specifically for references to user engagement. After grouping similar references, we organized them into three categories adopted from the user engagement literature (Hollebeek & Chen, 2014): behavioral, emotional, and cognitive outcomes (see Appendix D in the online supplement at https://osf.io/yhd34). While confirming this classification, we also observed both positively valenced (e.g., joy), and negatively valenced outcomes (e.g., annoyance, anxiety).

The *third step* entailed coding affordances (see Appendix E in the online supplement at https://osf.io/yhd34) by carefully identifying how the participants perceived and materialized actions concerning ephemerality features. This part was largely data driven, since prior research on social media affordances (e.g., Karahanna et al., 2018) does not focus on ephemerality features. We used descriptive coding (Myers, 2009) to compare and contrast similar and different situations, interactions, and reflections evident in our data and group similar elements into

affordance types. This step was iterative, with three authors working independently to identify candidate affordances, discuss and refine them, and return to the data to corroborate them with examples. It was critical in this stage to separate the direct use of SMP features from the affordances that such use provides (Leidner et al., 2018). For example, sending a snap is use, whereas "showing oneself authentically" or "glancing at the sender's everyday life" are affordances. Since we found similar goals among users, i.e., reinforcing and reviving relationships, we distinguished between the sender and receiver roles in terms of affordances only, rather than user groups.

In the *fourth step,* we linked affordances into strands of affordances and associated the strands with particular engagement outcomes (see Appendix F in the online supplement at https://osf.io/yhd34). Following qualitative data coding procedures (Miles & Huberman, 1994; Myers, 2009), we first linked related affordances into strands, differentiating between first- and second-order affordances. First-order affordances emerged directly from the use of a feature, while second-order affordances resulted from the actualization of the first-order affordances (Leidner et al., 2018). Subsequently, we associated the affordances and strands of affordances with engagement outcomes. Finally, we abstracted new user behaviors from the relationships between affordances and engagement outcomes (Tables 4 and 5).

Findings

Use Context and User Motivation

The participants used Snapchat to communicate with their social networks with the goal of reinforcing or reviving existing relationships. They viewed Snapchat as a more private communication medium with a smaller network than, for example, Facebook or Instagram. Their network usually consisted of close ties (e.g., friends, partners, family)—people familiar with their everyday lives—making it easier to interpret the content exchanged. Some users also had more distant acquaintances in their network (e.g., past schoolmates). Users were connected with most of their Snapchat contacts through other SMPs, such as Instagram, Facebook, or WhatsApp—the features of which were used in a complementary fashion (i.e., permanent and ephemerality features). They valued Snapchat's snap feature, which was regularly mentioned as one of the main reasons for using this SMP. Ephemerality opened new possibilities to share content that users did not wish to share permanently, such as funny, ugly, or random pictures. One interviewee stated: "On Snapchat you can also send unnecessary stuff that you wouldn't post on Instagram. I like that" (FG 8).

User Engagement Associated with Ephemerality Features

Our analysis revealed different behavioral, emotional, and cognitive engagement manifestations, which varied between the snaps and the story feature as well as the user's role in the interaction (i.e., sender/ receiver) (Table 1).

Behavioral Engagement

Users showed high behavioral engagement with the snap feature. Most users reported engaging with the feature frequently throughout the day during short use sessions when sending or consuming content, stating that when sending momentary impressions from their everyday lives to their close ties, the snap feature is their obvious choice. Senders did not report using any other SMPs for this kind of content. They stated that knowing that content will disappear quickly encourages them to send content more frequently than they would via SMPs with permanent content; "You dare to send more, because the receiver knows that you don't want to send it as a picture that the person should keep forever" (FG 1). When receiving content via the snap feature, users said that they sporadically reply by sending a picture (e.g., current surroundings, selfie) or a short comment (e.g., asking where the sender is or commenting on the content): "Sometimes I feel the need to reply, and then I send a funny snap back and a comment, or not" (FG 2).

We found that behavioral engagement with the story feature is lower compared to the snap feature. The frequency of sharing content depends strongly on the occurrence of events in everyday life that senders consider noteworthy: "It depends. When I'm at home and lead my everyday life, I share stories about 3-4 times per week. If I travel then it's 4 times per day on average" (INT 2). When receiving content, users stated that they regularly click on and browse stories but rarely reply: "You don't comment on stories that often. With snaps, you might say 'Haha, oh my God, what do you look like?' But with stories, you're kind of stalking" (INT 13).

Emotional Engagement

We found emotional engagement with the snap feature to be high; however, it is both positively and negatively valenced. Users reported mostly experiencing joy when sending or receiving content via the snap feature: "You're just happy when you get a snap because you hope it's something funny" (FG 9). Receivers stated that they feel excited when getting snaps, as they expect unusual content with an element of surprise and unpredictability. The fact that content disappears quickly excites them: "It's a little adrenaline rush when you see time ticking, and you think, 'the moment will be over in a few seconds'" (FG 6). However, in some instances, they also expressed negative emotional engagement. Senders stated that they experienced annoyance when they had forgotten to save a memorable snap. Receivers reported feeling annoyed when a snap that they would have liked to keep expires (e.g., pictures with friends) or when they cannot fully grasp the content because of its short expiration time, a distracting environment, or multitasking. In particular, short expiration times were associated with annoyance in the context of complex snaps containing a lot of text. For example, one user stated: "It annoys me a bit when something is sent together with text and then the time is only set to five seconds or so, and you couldn't finish reading it in that time" (FG 1).

Users expressed lower levels of emotional engagement with the story feature compared to the snap feature. The experienced emotions were primarily positive, with slightly lower levels of joy and excitement compared to the snap feature.

Cognitive Engagement

When sending snaps, users' cognitive effort was rather low, as they reported paying little attention: "You just don't think about it; [you just take a picture of something and send it]" (FG 2). Users stated that they generally perceive sending snaps as safe because the content disappears quickly. They expressed the belief that they could control the content and their privacy. Moreover, they said that they tended to quickly forget the content they sent. In contrast, receivers said that they needed to pay attention to grasp the meaning of the snap, especially when the sender sets a short view time. Viewing a snap could take up all their attention, "[When I'm opening Snapchat], I'm like, 'I need to pay attention. I need to focus for a second'" (FG 2). However, users typically did not recall most of the snaps sent or received: "I sometimes forget content. [For example, when I look at a snap and my mom says, 'Please empty the dishwasher.' Then I want to answer, but think 'What did the person write again?']" (FG 8). As users cannot revisit their interaction, they regularly experience a cognitive burden from context loss when interacting asynchronously via the snap feature. As a result, the interaction gets interrupted and ends.

In the case of stories, the cognitive effort appears to be rather high, as senders pay attention and make conscious decisions about the content they send. Compared to the snap feature, users stated that they feel less in control over the content and their privacy and thus tend to be more conscious about what they send. In contrast, the story feature allows receivers to use less cognitive effort and pay less attention compared to snaps. Receivers often forget the content of stories, when consuming them "[I looked at stories today because I was getting bored in class.] I remember a couple of them, but I could not tell you about all the stories I saw" (INT 7).

Table 1. User Engagement with Ephemerality Features			
Type of engagement	**User role**	**Ephemerality feature**	
		Snap feature	**Story feature**
Behavioral (B)	Sender (S)	High frequency of content-sharing	Frequency of content-sharing depending on life events
	Receiver (R)	Sporadic replying	Clicking on and browsing stories
Emotional (E)	S	Joy; annoyance	Joy
	R	Joy; annoyance	Joy
Cognitive (C)	S	Low attention; cognitive burden from loss of context	High attention
	R	High attention; cognitive burden from loss of context	Low attention

Table 2. Affordances Associated with the Use of Snap Feature			
Affordances	**Description**	**User role**	
		S	**R**
1. Showing situational everyday moments	Ability to show in-the-moment activities and whereabouts to others	√	
2. Showing oneself authentically	Ability to show an honest representation of oneself without staging	√	
3. Revealing oneself uninhibitedly	Ability to show oneself in an unrestrained manner	√	
4. Glancing at the sender's everyday life	Ability to get a brief look into the sender's current daily activities		√
5. Communicating casually	Ability to talk informally	√	√

Table 3. Affordances Associated with the Use of Story Feature			
Affordances	**Description**	**User role**	
		S	**R**
1. Presenting momentary experiences from everyday life	Ability to show others casual, yet out-of-the-ordinary activities and whereabouts	√	
2. Expressing oneself unobtrusively	Ability to express oneself in an unimposing manner	√	
3. Watching senders' momentary experiences from everyday life	Ability to see senders' current out-of-the-ordinary activities and whereabouts		√

Affordances Associated with Ephemerality Features

Our data revealed nuances in affordances associated with the snap (Table 2) and story features (Table 3) arising from the different degrees of ephemerality. Moreover, the affordances differed depending on the user's role in the interaction.

The snap feature invites users to share their situational everyday moments with their close ties, showing them where they are, what they are doing, and how they are feeling at a given moment. These moments are typically meaningful to the sender and the specific receiver or group of receivers yet disposable. Moreover, the snap feature allows senders to present an authentic side of themselves in front of a known and trusted audience. It allows them to be natural without the need for careful planning or staging. Knowing that content disappears and cannot be stored on the receiver's phone without them knowing, senders tend to worry less about the unintended negative consequences of content sharing. Thus, the high degree of ephemerality affords more spontaneous, carefree, and uninhibited self-disclosure. On the other hand, the snap feature allows receivers to see what their social ties are doing at a particular moment and gain insight into their current everyday lives. Moreover, the snap feature affords brief and informal conversations about trivial matters.

The story feature affords the presentation of casual but unusual experiences worth being presented for a day to close ties and acquaintances. Compared to snaps, stories tend to

consist of content that is less personal and trivial but not appealing enough for a permanent post. Thus, the lower degree of ephemerality tends to encourage a lower level of authentic or uninhibited self-disclosure than the snap feature. However, since stories disappear after 24 hours and cannot be stored on receivers' phones, senders typically feel like they can express themselves unobtrusively to receivers interested in viewing and keeping up with the sender's everyday experiences.

User Behaviors Arising from the Affordances and Their Effect on User Engagement

We identified five user behaviors derived from different strands of affordances, which, if actualized, result in behavioral, emotional, and cognitive engagement. Tables 4 and 5 provide overviews of the underlying affordances and the user engagement resulting in these user behaviors concerning snap and story features, respectively.

Showing Contextualized Snapshots of Fleeting Value

With the snap feature, users can reveal and share with others situational everyday moments and express themselves authentically and uninhibitedly. Participants provided several examples of how they enacted these affordances and how this led to different user engagement outcomes, such as frequent content-sharing, low attention, joy, and annoyance.

For example, during her exam period, one participant wanted to send a "sign of life" to her friends to stay in touch. Using the snap feature, she spontaneously took photos of the assignment sheet or herself at the library. Expressing such authentic impressions of her current situation satisfied the momentary urge to express herself to others while she was bored or stressed. Actualizing the affordances led her to send ephemeral content several times a day. On a more general note, she explained:

> *With Snapchat, you share nonsense pictures made out of boredom as well as fun pictures when you need a bit of contact with people… Sometimes you easily send twenty to thirty snaps per day of some nonsense you've just seen. I would never do that with Instagram because, first, people don't actually care that much, and, second, they don't have to know my life down to the last detail.* (FG 1).

In sum, the user behavior of showing contextualized snapshots of fleeting value is spontaneous and involves

activities and events of everyday life, which are shown to an individual or a selected group of people. Senders not only reveal contextualized content they would otherwise not share (e.g., unflattering or even embarrassing selfies, party pictures, trivial everyday objects) but also do so spontaneously without overthinking the potential consequences. Ephemerality seems to reduce senders' self-presentation concerns (e.g., attractiveness) compared to permanent content, which tends to be more carefully curated.

Glimpsing the Sender's Contextualized Snapshots of Fleeting Value

The snap feature allows receivers to glance at the sender's everyday activities to maintain their relationship. Participants provided several examples of how the actualization of the underlying affordance leads to positive emotional engagement and high cognitive engagement but also indicated that it can lead to low behavioral engagement and occasionally even negative emotional engagement (e.g., annoyance about losing content).

For example, one participant explained that the snap feature provides him with private and out-of-the-ordinary insights into the lives of his social network, which he perceives as entertaining: "I think it's great. I use Snapchat because the content is ephemeral and, therefore, much more fun. You really get the funniest pictures of people, pictures you don't see anywhere on Facebook, Instagram, or anywhere else" (FG 3). In fact, humorous private content, such as "intentionally ugly" or silly selfies, appears to make up a large part of the content exchanged via the snap feature.

While receivers indicated that they pay attention to the content, its trivial nature causes them to respond to messages only sporadically, "Most of the time I ignore it because I think it probably wasn't anything special anyway. In most cases, I don't write back" (FG 6). Another reason for the lack of receiver response is that they quickly forget the content and feel it is not worth asking the sender to share it again. However, in some instances, getting a glimpse of the sender's everyday life via the snap feature can also cause annoyance— for example, when receivers lose content that they would have liked to view more carefully. Many receivers reported that content consumption is a challenge, which is exacerbated by senders trying to reduce the replicability of content. When content can be accessed only briefly, receivers might not see or analyze the entire image or read the whole text. In addition to the short availability, usage mistakes, such as accidentally clicking the content away or closing the chat before reading the whole message, can exacerbate this problem because the content cannot be reaccessed.

Table 4. User Behaviors Afforded by Snap Feature and Outcomes			
User role	**First-order affordances**	**Second-order affordances**	**User engagement**
Showing contextualized snapshots of fleeting value			
S	Showing situational everyday moments	• Showing oneself authentically • Revealing oneself uninhibitedly	• High frequency of content-sharing (B) • Low attention (C) • Joy; Annoyance (E)
Glimpsing the sender's contextualized snapshots of fleeting value			
R	Glancing at the sender's everyday life		• Sporadic replying (B) • High attention (C) • Joy; annoyance (E)
Instantaneously communicating about contextualized snapshots of fleeting value			
S/R	Communicating informally		• Joy (E) • Cognitive burden from loss of context (C)

Table 5. User Behaviors Afforded by Story Feature and Outcomes			
User role	**First-order affordances**	**Second-order affordances**	**User engagement**
Presenting experiences of transient value			
S	Presenting momentary experiences from everyday life	• Expressing oneself unobtrusively	• Frequency of content-sharing depending on live events (B) • High attention (C) • Joy (E)
Actively keeping up-to-date with the sender's experiences of transient value			
R	Watching senders' momentary experiences from everyday life		• Clicking on and browsing stories (B) • Low attention (C) • Joy (E)

In sum, we found that the user behavior of *glimpsing the sender's contextualized snapshots of fleeting value* involves receivers catching glimpses of what their close ties are doing in their everyday lives at the moment. Receivers indicated that while they are attentive to content that swiftly disappears, they consider much of the content received to be less relevant and of lower quality compared to permanent content.

Instantaneously Communicating about Contextualized Snapshots of Fleeting Value

The snap feature enables users to strengthen their relationships by informally exchanging content related to a common thread. However, we found that actualizing this affordance causes both positively and negatively valenced engagement. Feelings of joy and a cognitive burden from the loss of context from disappearing conversations were both evident in our interviews.

When communicating informally via the snap feature, users reported experiencing joy: "When we go out, and something embarrassing happens, they (my best friends) get it. Often, it's very funny because many of my close friends study in another

city, and when they're out partying as well, we send each other snaps back and forth" (FG 6). Users stated that following and keeping a conversation going requires paying attention to the exchanged content, similar to a face-to-face interaction. Receivers expressed the importance of grasping and interpreting the content's meaning before it disappears and then quickly thinking of appropriate content to send back. The wish to keep a conversation alive can lead to instant behavioral reactions: "On WhatsApp, I read a message and think to myself, 'Okay, it's huge. I'll answer it later.' On Snapchat, I do that immediately. I get a huge message, and I answer immediately because otherwise, I forget it, the message is gone, and the conversation is ruined" (FG 3). However, we found that receivers typically do not reply to messages immediately (e.g., due to lack of time), which ends the interaction and leads to a cognitive burden from the loss of context for both senders and receivers, who may find it difficult to keep track of conversations. Senders reported often forgetting what they sent if receivers fail to respond promptly, "Sometimes it's really stressful when the messages disappear, and you forget to save them. So, if I write something and then get an answer, I often think, 'Damn, what did I write again?' Then I have to send a message that says something like, 'Hey,

sorry, what did I write again? What did you reply to?'" (FG 3). Receivers, on the other hand, stated that they often lose track of the context of a conversation if they are, for example, busy or inattentive when receiving a message.

In sum, we found that *instantaneously communicating about contextualized snapshots of fleeting value* results in both positive and negative outcomes related to user engagement. Failure to reply in time (asynchronous communication) significantly hampers continuous communication, resulting in the communication session ending shortly after it begins. Users stated that they switch the conversation to SMPs with permanent content features for extended conversations or activity planning.

Presenting Experiences of Transient Value

The story feature allows users to present what they are experiencing at the moment to others and express themselves unobtrusively. Participants provided several examples of how they enact these affordances and how this leads to different user engagement outcomes, such as context-dependent content-sharing, a high level of attention, and joy. They indicated that they use the story feature to present momentary but unusual experiences in their everyday lives, such as events (e.g., birthdays, holidays/trips, concerts), settings (e.g., beautiful sunsets, good food), and characters (e.g., pictures with friends, animals), to their broader social networks. Users stated that they deliberately choose to present their experiences for only 24 hours via the story feature, as the content will quickly lose its value: "In the story, I post things that others are interested in only for a short time. For example, a concert. After one day, it is over, and no one cares about it anymore" (FG 4).

Senders reported choosing the story feature over the snap feature to reach a broader audience, offering sufficient time to consume the content if they actively click on it. This behavior is similar to how they use the story feature in other SMPs.[4] "That is such a classic story picture on Instagram or Snapchat. You are going on a hike and you're up on the mountain taking a picture and sharing it in your story because you want to show people 'I've done something great today.' All my friends should know that, but only for a short time" (FG 12). This results in positive emotional and behavioral engagement with the story feature. Compared to snaps, the presented content tends to be of higher quality and requires less contextual knowledge about the sender's everyday life, thereby preventing misinterpretation. Most senders stated that they do

not share selfies, let alone embarrassing ones. Stories involve content of transient value that users do not wish to share permanently: "Stories are for things that I want to share, but that aren't so important that I want them on my profile forever" (FG 8).

In sum, we found that *presenting experiences of transient value* involves sharing events whose value is context-related and diminishing. The content is shown to those who choose to browse it and differs from permanent content that is used to build the user's profile on an SMP.

Actively Keeping Up-To-Date with the Sender's Experiences of Transient Value

The story feature allows receivers to see the current everyday experiences of their social network, which leads them to actively click on and browse the stories, usually with low attention. At the same time, receivers reported experiencing joy in relation to the story feature.

As one user explained, "I think it's cool because I don't really hear anything from a lot of people, but through Snapchat, I see what they're up to. I can see what they're doing or where they are at the moment" (FG 3). Another user said that the story feature allows him to "experience the current everyday life of others" (INT 16), which motivates him to browse stories regularly, leading to positive feelings. At the same time, receivers stated that they often browse stories without paying close attention to the actual content while distracting themselves from other activities (e.g., studying) or killing time (e.g., on the train). This was also typical for other SMPs offering the story feature: "I actually think that with all the photos in the stories it is like: seen once, out of sight, out of mind. This morning I looked at ten Instagram stories for sure. But I cannot even tell you anymore what was in there. You can see what people are currently doing, then you think 'okay, cool.' In five days, who cares?" (FG 12). Some users compared viewing a story to scrolling a wall with permanent content (e.g., Facebook). However, they emphasized that they appreciated the ability to actively click on or skip content based on their interests, which is not possible with posts on a wall.

In sum, this reflects the receiver's *actively keeping up-to-date with the sender's experiences of transient value* by browsing the sender's content intentionally but paying little attention, without the constraints of a strict time limitation. Story content is related to the day the event occurred, and its value diminishes shortly thereafter.

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[4] Appendix G in the online supplement at https://osf.io/yhd34 provides examples of quotes from the focus group data on the affordances associated

with Instagram stories, indicating their similarities to the affordances associated with Snapchat stories.

Discussion ▬▬▬▬▬

Given the increasing popularity of ephemerality features in social media, understanding how they influence user engagement with an SMP is of significant theoretical and practical importance. Our study adds to social media research by challenging the common understanding that only permanent content, which users can like, comment on, and share, contributes to user engagement with SMPs. In the following, we discuss our findings in relation to the social media affordances research and the user engagement and ephemerality research.

Contributions and Implications for Future Research

This study extends research on social media affordances by uncovering the affordances arising from ephemerality features on SMPs and showing how they differ from those of permanent content features. Building on Leidner et al.'s (2018) method of investigating affordances in the social media context, which distinguishes between features, use, affordances, and outcomes, we were able to systematically investigate user interaction with specific technology features and identify the implications for user engagement with the SMP. Following this method, we were able to identify social media affordances at the feature level, observe the different outcomes for senders and receivers, and describe new forms of user behavior.

Prior research has systematically addressed a set of affordance categories related to social media by focusing on permanent content features (Karahanna et al., 2018). Building on the affordance categories that resemble those identified in our study, we argue that self-presentation, browsing others' content, and communication differ for ephemerality features, which has consequences for user engagement.

SMPs allow for self-presentation by providing features that enable users to "reveal and present information related to themselves" (Karahanna et al., 2018, p. 744). Echoing prior research (Lowe-Calverley & Grieve, 2018), we found that self-presentation based on permanent content features is enacted as well-thought-out sharing practices, as users carefully select and curate the information shared. In contrast, ephemerality features afford less strategic self-presentation and reduce concerns about impression management (Bayer et al., 2016), allowing users more freedom in what they share and how they present themselves. Ephemerality features encourage users to share moments of their daily lives that they would not share as permanent content—that is, "backstage footage rather than the rehearsed performance" (Johnston,

2016). Extending prior research, our study uncovers nuances of self-presentation affordances between features of different degrees of ephemerality.

The degree of ephemerality affects the authenticity with which senders present themselves in a social media context. Features with a high degree of ephemerality (i.e., snaps) encourage senders to reveal trivial, often playful snippets of everyday life that have only momentary value and meaning and are thus not memorable. Due to the high degree of ephemerality, users do not feel the pressure of having to present highlights of their lives, as is the case in permanent content settings. This facilitates more authentic self-presentation. A high degree of ephemerality seems to prevent users from self-censoring and promotes uninhibited self-presentation. In contrast, features with a lower degree of ephemerality (i.e., the story feature) allow users to present momentary experiences from life as it happens without the need for the careful planning associated with permanent content. Our findings are also applicable to other SMPs offering a story feature. In a recent study, Kreling et al. (2022) similarly found that Instagram stories are used to share everyday moments as they unfold without careful planning. Compared to permanent content, stories enable a more spontaneous self-presentation and are thus perceived to be more authentic (Kreling et al., 2022).

Browsing others' content is a prominent affordance of SMPs (Karahanna et al., 2018). Previous research has assumed that this possibility requires permanent content features such as timelines. However, ephemerality features also allow users to keep themselves apprised of other users' activities. A high degree of ephemerality (i.e., snap feature) allows receivers to access a backstage view of the sender's everyday life. The high frequency of updates observed for snaps (see also Morlok et al., 2018; Piwek & Joinson, 2016), compared to permanent content on other SMPs, results in a news stream that is constantly refreshed and renewed. Further, the triviality of the content, combined with its constant updating, drives down the value of each individual piece of content (Kallinikos, 2009). In contrast to permanent content, which tends to be imposed on users as they scroll through the feed, the story feature allows users to actively choose whether and which stories to view.

We also found that communication affordances (Karahanna et al., 2018) provided by ephemerality features differ greatly from those of permanent content features. The latter allow users to compose dialogs thoughtfully and asynchronously, resulting in "long-running, deep, coherent conversations" (Erickson & Kellogg, 2000, p. 69). In contrast, communication through ephemeral content comprises nearly synchronous exchanges of visual content and brief, short-lived comments (Kreling et al., 2022). As the course of the conversation cannot be retrieved, this has similarities with face-to-face communication, "where the conversation is of value primarily as it occurs" (Erickson &

Kellogg, 2000, p. 69). However, at this point, we should clarify that this difference is only applicable for features with a high degree of ephemerality, i.e., snaps. Adding to social media research, future studies should draw on the affordance perspective to investigate SMPs combining permanent and ephemerality features and uncover the emerging affordances and their interdependencies.

The affordances of ephemerality features lead to different engagement outcomes for senders and receivers. Our study extends Chen and Cheung's findings (2019) by unpacking the concept of user engagement into a three-dimensional conceptualization while incorporating both positively and negatively valenced manifestations (Hollebeek & Chen, 2014). We argue that the temporal nuances introduced by ephemerality features have more complex implications for user engagement. Adding to Chen and Cheung (2019), we found more frequent content sharing via the snap feature, which involves a high degree of ephemerality, than via the story feature. Extending Alhabash and Ma's (2017) comparative study of college students' use of SMPs, we observed that users share and receive ephemeral content more frequently than permanent content, but receivers often consume ephemeral content without active reciprocation (e.g., replying). While previous studies have found positive (Bayer et al., 2016; Piwek & Joinson, 2016) and negative (Morlok et al., 2018) reactions to features with a high degree of ephemerality, i.e., snaps, we extend these empirical findings and also include a feature with a lower degree of ephemerality, i.e., stories. For the stories feature we found that users' emotional engagement is exclusively positively valanced since interactions are consistently perceived as joyful; in contrast, the snaps feature sometimes evokes annoyance in receivers—for example, when that content is lost (Morlok et al., 2018). Finally, our study systematically introduces the cognitive engagement dimension by revealing varying attention levels between senders and receivers. In addition, we saw how the different degrees of ephemerality influence the level of cognitive engagement. Future studies could quantify the observed nuances regarding the three dimensions of user engagement.

Our study also extends empirical findings regarding ephemerality features on SMPs from comparative studies (e.g., Birnholtz et al., 2020; Chen & Cheung, 2019; Kreling et al., 2022). Offering a richer comparison among features with different degrees of ephemeral and permanent content features allowed us to tease out previously unobserved affordances and user behaviors. In particular, the features of different degrees of ephemerality appear to complement each other, e.g., presenting contextualized snapshots or pictures of personal experiences conveys information that is authentic but of transient value. In contrast, permanent content features are used for more unique and memorable content. Our study also highlights that individuals have different interactions with ephemerality

features when they are in different roles (i.e., sender vs. receiver) and develop new types of behaviors on SMPs. Future research could investigate how user behaviors evolve as increasing numbers of ephemerality features are introduced on SMPs. Given the increased use of ephemerality features, future research could also expand beyond the social media context. Business applications are increasingly implementing ephemerality features (van Nimwegen & Bergman, 2019), and the rise of live streaming services indicates high user demand for "in the moment" experiences, as opposed to content remaining online forever (Bründl et al., 2023).

Implications for Practice

On a practical level, our findings help SMPs develop features with varying degrees of ephemerality in order to enhance user engagement with their platform. Since users tend to experience joy when using such features, they are likely to visit the SMP more frequently to share or consume content. This may explain why many popular SMPs have introduced ephemerality features. However, SMP providers must be aware of the tensions that such features can create. Our findings indicate that ephemerality features increase the engagement of senders while receivers tend to remain passive; in the case of snaps, receivers may even have negative reactions, such as annoyance, anxiety, or cognitive burdens related to the loss of context. To address these issues, providers could exploit functionalities that would allow receivers to view content as long as desired but still have the content disappear after the receiver closes the message. SMP providers should also consider ways to encourage more behavioral engagement by receivers (e.g., responses) while mitigating the disadvantages of communication based on ephemeral content (i.e., loss of context). For example, they could direct responses to ephemeral content into a permanent chat feature, allowing users to continue the conversation more easily. This could potentially increase the frequency of visits and the time users spend on the SMP—both important qualities for attracting advertisers.

We found that ephemerality features complement rather than substitute for permanent content features. While trivial or private content is shared through ephemerality features, users tend to switch to permanent content to share information they see as memorable and not too private. SMPs that have traditionally relied on permanent content only, such as Facebook, Instagram, and WhatsApp, are currently pursuing this strategy. However, simply combining permanent and ephemerality features may lead to too many options for users, and thus have mixed effects on user engagement and ad revenue generation. Our findings suggest that ephemerality features could be implemented in contexts in which providers aim to encourage users to effortlessly share content regularly

to promote fast, intensive, but short-lived communication (e.g., in online dating). In contrast, contexts in which users share important and valuable content or engage in deep communication (e.g., in service contexts with firms) are less suitable for ephemerality features.

Ephemerality features allow SMPs to generate revenue by monetizing users' attention to advertisers differently than is the case with permanent content. For example, Snapchat enables advertisers to promote brands by designing ephemeral content, e.g., stories, or offering artifacts to sponsor content editing, e.g., filters (Flecha-Ortiz et al., 2021). Stories are designed around sharing everyday experiences of transient value for a limited time. This feature makes users return to the SMP frequently to view such content (Alhabash & Ma, 2017). The casual, authentic environment created by ephemerality features offers new opportunities for advertisers, as users actively click on stories to keep up with their social network activities, thereby experiencing joy (Alhabash & Ma, 2017). However, our findings show that users typically browse stories without paying much attention to the content. Thus, it is vital for advertisers to present content in stories that immediately draws users' attention.

Limitations

One limitation of our study is that the results were based on data collection from a single SMP. While focusing on a single case is a "typical and legitimate endeavor" (Lee & Baskerville, 2003, p. 231) in IS research, we acknowledge that generalization in a statistical sense is impossible with our research design. Given that SMPs have different characteristics and user groups, it is possible that research examining the impact of ephemerality features in other SMPs would yield different results. Since the snap feature was not available in other SMPs at the time of our study, one could assume that results for snaps only relate to the specific platform. However, this does not apply to stories, as we observed similarities to other SMPs—in particular, Instagram. We expect that our study could be generalized beyond its singular context because we corroborated our findings with established works in the literature on SMPs and technology affordances, as well as the data on participants' use of other SMPs. As such, this study draws on the principles of analytic generalization (Yin, 2003), or what Lee and Baskerville (2003, p. 235) refer to as "generalizing from description to theory." However, further research is needed to investigate the applicability of our findings to other SMPs. Future research could achieve generalizability by collecting data from users of multiple SMPs and statistically validating our findings.

Another limitation of this study is its focus on active users of Snapchat. Involving people who tried Snapchat but do not use it extensively would be an interesting avenue for future research.

For example, the negative implications of ephemeral content might not be fully captured by our sample, which did not include individuals who discontinued using Snapchat or those who use other SMPs but choose not to use ephemerality features.

Conclusion

In this research, we analyzed how ephemerality features affect user engagement with SMPs. Based on a qualitative multimethod approach including 37 individual interviews and 15 focus groups with Snapchat users, we identified new user behaviors arising from ephemerality features. Our research shows that SMP providers can influence user engagement by introducing ephemerality features; however, they must be aware of and carefully manage the tensions that such features can cause.

Acknowledgments

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