

# **GONE FOR BETTER OR FOR WORSE? EXPLORING THE DUAL NATURE OF EPHEMERALITY ON SOCIAL MEDIA PLATFORMS**

*Research paper*

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## **Abstract**

*The implementation of functionalities inspired by ephemerality represents a new and promising direction for social media platform providers to ensure active user participation. Social media platforms that already rely on ephemerality show increased activity rates. However, ephemerality represents a whole new principle in the social media context; and its impact on user perceptions and behaviours has hardly been explored. Building on an exploratory research approach, we seek to develop an in-depth understanding of how and why perceived ephemerality affects user behaviour. Based on 37 interviews with users of ephemerality-based platforms and drawing on a thematic analysis, we depict the promising nature of ephemerality by revealing its positive impact on user behaviour, such as an increase in users' willingness to share information. We found that users' control perceptions help to explain this positive relationship. However, and contrary to existing knowledge, we found that, in specific conditions, perceived ephemerality can negatively affect user behaviour. This adverse effect can be explained by users' loss perceptions as an underlying cognitive mechanism. From a practical perspective, our findings highlight the need to keep the delicate balance of potential upsides and downsides of ephemerality when implementing functionalities.*

*Keywords: Ephemerality, Ephemerality-based Platforms, Control Perceptions, Loss Perceptions, User Behaviour, Information Privacy.*

## 1 Introduction

Providing ephemerality-based functionalities is an emerging trend, particularly for social media platform providers, who seek to ensure active user participation (Hoffmann, 2016; Sheerit, 2017). Social media platforms that rely on ephemerality as a core feature — which we refer to as ephemerality-based platforms — show high activity rates. On Snapchat, for instance, users send daily 3.5 billion so-called Snaps, which are image-based ephemeral messages that disappear within a period of one up to 10 seconds (Firsching, 2017). Ephemerality entails that shared content is only available for a specific amount of time based on automatic deletion (Xu et al., 2016) and is seeing growing attention in the social media market (Russell, 2017; Statt, 2017). Even with social media platforms, which were so far mainly based on data persistence, a shift towards ephemerality can be observed (Bhattacharya, 2018). For instance, Instagram and WhatsApp successfully copied the Snapchat Stories feature that allows users to share photos or videos that automatically disappear after 24 hours. On these two platforms, this feature has already more than 300 million daily active users (Constine, 2017). Thus, ephemerality represents a new and highly promising solution for platform providers' current struggles with user participation (Armstrong, 2017).

For providers, it is therefore essential to understand how they can benefit most from the provision of functionalities inspired by ephemerality. This also includes that platform providers need to know whether there are conditions in which ephemerality could potentially negatively affect user behaviour, that is, conflicting with the goal of ensuring user participation. Despite the seemingly positive impact of ephemerality in the social media context, research on ephemerality is still in its infancy, particularly in the information systems (IS) literature (Morlok et al., 2017; Salovaara and Tuunainen, 2015). Researchers from other disciplines, such as from communication sciences (Bayer et al., 2015; Piwek and Joinson, 2016) and from computer science (Cavalcanti et al., 2017; Schlesinger et al., 2017) have recently begun to investigate ephemerality in the social media context. However, these studies only provide preliminary insights into, for example, the adoption of and general usage patterns on ephemerality-based platforms (Schlesinger et al., 2017; Utz et al., 2015). The ephemerality concept as well as the relationship between ephemerality, user perceptions, and behavioural outcomes have hardly been investigated so far. It is yet unclear what the reasons for positive effects on user behaviour are and in what conditions ephemerality could entail disadvantages. We thus seek to address this research gap by developing an initial understanding of how ephemerality change the ways users behave on social media platforms and on the underlying cognitive mechanisms that help to explain these effects. We thus intend to answer the following two research questions:

**RQ1:** *How does ephemerality affect user behaviour on social media platforms?*

**RQ2:** *What are the underlying cognitive mechanisms that can explain how ephemerality affects user behaviour?*

To answer our research questions, we drew on qualitative research approaches and conducted 37 semi-structured interviews with users of an ephemerality-based platform. Based on thematic analysis (Braun and Clarke, 2006), we identified positive effects of ephemerality on user behaviour and revealed different behavioural outcomes related to perceived ephemerality. Yet, our exploratory approach allowed us to also identify adverse effects of ephemerality. We identified conditions in which ephemerality impedes active participation. By revealing users' control perceptions and loss perceptions as underlying cognitive mechanisms we were not only able to identify the dual nature of ephemerality but also to provide explanations for it. We provide a more nuanced understanding of the ephemerality concept in the social media context and its potential effects on user behaviour. By revealing and explaining the dual nature of ephemerality, we contribute to IS research generally and particularly to research on ephemerality in the social media context. From a practical perspective, our findings enable platform providers to better understand how to use ephemerality as a driver of user participation while avoiding potential detrimental behavioural outcomes, such as switching behaviour.

In the next section, we present an overview of research on ephemerality and the specifics related to the use of ephemerality-based platforms. We then describe our research method, data collection and analysis procedure. This is followed by the presentation of our findings, which highlight the upsides and downsides of ephemerality and the underlying cognitive mechanisms. In particular, we provide detailed insights into users' control perceptions and loss perceptions as cognitive mechanisms that help to understand the dual nature of ephemerality. We then discuss the study's key findings, the theoretical contribution, and the practical implications. We conclude by outlining the study's limitations and highlighting avenues for future research.

## 2 Theoretical Background

### 2.1 Understanding Ephemerality on Social Media Platforms

While ephemerality is highly relevant for information-intensive areas, such as the social media context, it is not limited to this context. The word ephemerality derives from the Greek word *ephemeros*, which means to last for only one day (Liddell and Scott, 1843). Thus, ephemerality relates to transition and temporality. Owing to its broad meaning, ephemerality has been investigated in various disciplines, ranging from architecture (Baek, 2006), natural sciences (Keddy, 2007), fashion (Berthon et al., 2009), to communication sciences (Grieve, 2017). In IS research, ephemerality has primarily been investigated in the field of knowledge management. Salovaara and Tuunainen (2015) investigated how software developers address the challenges of ephemeral knowledge via knowledge management practices. The authors define ephemerality as "information that the focal community believes to become out-dated as the time passes because the context in which the knowledge is intended to be used is expected to change" (Salovaara and Tuunainen, 2015, p.11).

The Internet in general and social media platforms in particular have long been characterised by data persistence. Yet, the longevity of data raises uncertainties about potential risks (Acquisti et al., 2015), such as monetary, psychological, and social risks (Milne et al., 2017). A large research stream in the IS literature has explored the problems that arise from data persistence, especially concerning user privacy (Acquisti et al., 2015; Milne et al., 2017; Solove, 2007). To address issues related to data persistence, computer science scholars have highlighted the relevance of ephemerality as a technical countermeasure that may help to ensure user privacy (Bannon, 2006; Mayer-Schönberger, 2011). Particularly in the social media context, ephemerality is perceived as a technical remedy for issues arising from data persistence, rather than as a threat (Kotfila, 2014).

New ephemerality-based platform types have emerged that build on ephemerality as a core feature (e.g., YikYak, Snapchat). In this context, ephemerality has been described as "the quality of transience and disappearance, into the exchange of digital content" (He and Kivetz, 2016, p. 470). Thus, from a technical perspective, ephemerality in the social media context refers to the fact that content cannot be easily saved or stored digitally, and is only available for a limited time (Cavalcanti et al., 2017). Snapchat for instance allows its users to employ different extents of ephemerality, which are intensified by the design of the application's core features (Cavalcanti et al., 2017; Xu et al., 2016). We categorise different strengths of ephemerality into *reinforced ephemerality* and *general ephemerality*. Reinforced ephemerality is represented by the Snap feature; the sender can specify the content's availability for a time of between one and 10 seconds. This setting can be changed for every individual Snap (Cavalcanti et al., 2017). Lower ephemerality (general ephemerality) can be achieved by publishing Stories that last for 24 hours and are visible to followers as many times as they like (Grieve, 2017).

### 2.2 The Use of Ephemerality-based Platforms

With the rise of ephemerality-based platforms, ephemerality also has gained increasing attention in different disciplines, ranging from cyberpsychology (Utz et al., 2015), to communication sciences (Bayer et al., 2015), and computer sciences (Schlesinger et al., 2017; Xu et al., 2016). For instance, scholars have addressed the use of ephemerality-based platforms such as YikYak (Schlesinger et al.,

2017) and Snapchat (Utz et al., 2015). Several studies found that the main reasons for using ephemerality-based platforms included communication and the desire to share funny, personal or emotional content and combat boredom (Piwek and Joinson, 2016; Roesner et al., 2014). These findings are supported by Bayer et al. (2015), who showed that users of ephemerality-based platforms typically share mundane experiences with close ties.

Recent studies indicated that users perceive functionalities that build on ephemerality as being beneficial (Bayer et al., 2015; Piwek and Joinson, 2016). Bayer et al. (2015) found that users perceive interactions on ephemerality-based platforms as easier and more enjoyable compared to interactions on other social media platforms, such as Facebook. Several studies investigated gratifications related to the use of ephemerality-based platforms (Grieve, 2017; Vaterlaus et al., 2016; Waddell, 2016). Grieve (2017) for instance found that Snapchat users are younger than Facebook users and that they value social connectedness higher than non-users. They also found that Snapchat users rely more on graphics in communication, have higher technology capabilities, and show stronger preferences for online social interaction (Grieve, 2017). Maintaining contact with friends and reinforcing in-group bonds through sending personalised selfies have been identified as two motivational factors for the use of ephemerality-based platforms (Katz and Crocker, 2015). Piwek and Joinson (2016) revealed that the use of these platforms relates to bonding rather than bridging social capital. Bayer et al. (2015) argued that users perceive an ephemerality-based platform not as a platform for sharing or viewing photographs, but as a channel for sharing spontaneous experiences with trusted ties. He and Kivetz (2016) pointed out that the use of ephemerality-based platforms relates to increased experiences of immersion and presence.

Ephemerality-based platforms also seem to better protect users' privacy (Kotfila, 2014; Utz et al., 2015). Ephemerality has been related to users' worries about potential negative consequences relating to the disclosure of information on platforms. Scholars argue that ephemerality may lower self-presentational and privacy concerns (Bayer et al., 2015; Xu et al., 2016). Initial studies indicate that users feel safer about their privacy with content that is automatically deleted as the default setting (Xu et al., 2016). Providing users with the feeling of a private setting, ephemerality may facilitate social interaction among users and may therefore raise users' willingness to engage with a platform (Bayer et al., 2015). Morlok et al. (2017) showed that perceived ephemerality may drive individuals' intentions to use an ephemerality-based platform by counteracting privacy concerns. In contrast, Lemay et al. (2017) investigated the adoption of Snapchat and found that privacy concerns were not related to the use of the platform. Yet, Utz et al. (2015) found higher jealousy levels on Snapchat compared to Facebook and explained this finding based on the differences in privacy and persistence of information on the two platforms (Utz et al., 2015).

In sum, recent studies, particularly from communication sciences, offer preliminary insights into the use of ephemerality-based platforms (e.g., Bayer et al., 2015; Grieve, 2017). However, ephemerality represents a whole new principle in the social media context which has long been characterized by data persistence (Fox and Moreland, 2015). A profound knowledge about the ephemerality concept is still lacking, particularly from an IS perspective (Morlok et al., 2017; Salovaara and Tuunainen, 2015). We thus seek to develop a more profound understanding of the potential positive and negative impact ephemerality has on user perceptions and behaviours on social media platforms.

### 3 Methodology

We seek to understand ephemerality, its effects on user behaviour, and underlying cognitive mechanisms that help to explain its impact. Owing to limited insights in the literature and the exploratory nature of our project, we relied on a qualitative research design, since it allows close contact with the field of study, to gain the necessary understanding of a specific phenomenon (Creswell, 2009). Specifically, we chose personal interviews as best suited to investigate, in depth, users' perceptions and feelings related to ephemerality and to learn more about users' experiences with the use of ephemerality-based platforms and features (Myers and Newman, 2007). For analysing the data, we drew on thematic

analysis (Braun and Clarke, 2006). This offers us detailed procedures to analyse the data concerning themes that emerge and are relevant for answering our research questions. Relevant themes correspond to ephemerality and the identification of concepts that may function as underlying mechanisms that explain the relationships between ephemerality and user behaviour. For data analysis, we drew on Braun and Clarke (2006), who have proposed a detailed step-by-step guide for this research method.

### 3.1 Data Collection

To capture a holistic picture of the novel research phenomenon, we relied on the purposive sampling technique (Patton, 1990). This technique allowed us to focus on participants from whom we could learn much about the role of ephemerality in the use of social media platforms (Patton 1990, p. 169). Since we sought to gain insights into users' perceptions and behaviours on ephemerality-based platforms, participants were required to have been Snapchat users for at least six months prior to the interviews. Respondents were selected to represent the main Snapchat user group, which is under the age of 34 (Aslam, 2018). Thus, our sample primarily consisted of digital natives (Palfrey and Gasser, 2011; Prensky, 2001). Overall, we conducted 37 personal interviews (semi-structured) for in-depth investigation of ephemerality's roles in user behaviour and the underlying cognitive mechanisms (Lacity and Janson, 1994). We conducted interviews until data saturation was achieved (Miles et al., 2014) and following recommendations by Marshall et al. (2013). Two IS department members of both universities conducted the interviews over seven months (April to October 2017) in Germany and Denmark. By the participants' choice, all interviews were held at the two IS department's offices. The interviews were conducted in German, except for two that were conducted entirely in English. The interview guide (pre-defined and tested) consisted of 25 open-ended questions, which were also inspired by knowledge from the literature on ephemerality in the social media context. The participants were asked to describe their Snapchat usage patterns (e.g., their sharing behaviours) and their perceptions related to ephemerality and specific ephemerality-based functionalities in this context. At the end of the interviews, we asked for demographics. As an incentive for participation, each interviewee received a €5 Amazon gift voucher after their interview.

On average, the interviews lasted 36 minutes. The average interviewee age was 21; the youngest was 12, and the oldest 27. Most of the interviewees were female (62.16%). The majority of the interviewees were students (73.38%), and the rest pupils (16.22%) or employees (5.4%). On average, these users spend 37 minutes on Snapchat per day compared to 162 minutes on other social media platforms (e.g., Facebook, Instagram, WhatsApp). Users described themselves as active Snapchat users and send, on average, 104 Snaps per week; from other users, they receive 113 Snaps. In contrast, all users described themselves as being passive Facebook users, i.e. they rarely post content (e.g., status updates, pictures, videos). Their average number of Snapchat friends is 57 compared to 442 Facebook friends.

### 3.2 Data Analysis

The interviews were recorded, transcribed, and analysed by applying qualitative data coding techniques (Myers, 2013) with ATLAS.ti, which is widely used and accepted among IS researchers (e.g., Cyr et al., 2009; Sergeeva et al., 2017). We analysed the data from the interviews based on the thematic analysis technique and through the phases proposed by Braun and Clarke (2006). The unit of analysis is the individual, with a focus on understanding user perceptions relating to ephemerality and its effects on user behaviour. With the software, we structured the data material, using content analysis to identify emerging patterns in the data material (Miles et al., 2014). We initially transcribed the interview audio recordings and then repeatedly read through the transcript. We identified 25 different codes in the data set by searching the data for recurring patterns. We organised these first-order codes into tables that supported a single theme across the various data sources (Braun and Clarke, 2006). We then developed second-order categories (for an example of the coding process, see Table 1 in the Ap-

pendix). The process of matching codes with second-order themes and then these themes with aggregate dimensions was accompanied by a constant review of the literature (Webster and Watson, 2002).

## 4 Findings

In the following, we provide an overview of our findings. In Section 4.1, we present positive effects of ephemerality on user behaviour. Drawing on these results, in Section 4.2, we dive deeper into ephemerality's beneficial side, depicting the relationship between ephemerality, users' privacy concerns and control perceptions. This is followed by an overview of ephemerality's potential downsides, revealing loss perceptions as an underlying mechanism to explain ephemerality's negative side (Section 4.3).

### 4.1 Ephemerality and User Behaviour

Among the interviewees, ephemerality appears to be a major driver of sharing intentions: “[...] *you only send these things because they are gone within a couple of seconds*” (male, 22). In particular, the fact that content availability is limited in time for receivers supports users' increased willingness to share: “*Rather than beautiful pictures, you share silly pictures compared to WhatsApp, where you know that the person will have it on their device and may do with the picture whatever they want to do with it and can forward it to others and look at it again and again*” (female, 24). As the interviewees indicated, the reason why ephemerality affects sharing intentions is that it allows users to share a broader variety of content, ranging from mundane (e.g., daily activities) to highly sensitive information (e.g., selfies, excessive alcohol consumption, nude photographs).

First, in contrast to users' sharing intentions on social media platforms that mostly rely on data persistence (e.g., Facebook), users expressed that they are more willing to share mundane information because it is ephemeral: “*On other social networks, you always try to present yourself in the best possible way. You have only the most fantastic pictures on Instagram. On Snapchat, you share everyday activities that just happen. You don't have to pretend*” (male, 24). Users pointed out that sharing mundane information is a major benefit of ephemerality: “*I began to understand the advantages of this feature [Snaps], because you can just send random stuff, and in the end it doesn't matter [...], you don't have to send relevant things. That's the point, not being relevant*” (female, 22). Users often described the use of Snapchat to resemble face-to-face communication. Interviewees explained that they feel that ephemerality allows them to share fairly mundane information, which they would usually exchange in personal conversations: “*Because you don't share anything important. I use it only for conversations*” (female, 22). Another user said: “[...] *you're more inclined to share daily activities. Because you'd talk about it when you see each other. Actually, that's the main reason*” (female, 22). Thus, ephemerality allows users to interact in a more natural way, similar to offline communication among friends and close ties.

Second, users stated that ephemerality also allows them to share more sensitive information, such as potentially embarrassing pictures: “*I send more funny pictures via Snapchat. [...] On other platforms, I don't do that [...]. On Snapchat, it can also become a bit more embarrassing*” (female, 16). We also asked interviewees what would have been different without ephemerality on the platform. As an interviewee explained: “[I would not send] *such personal pictures, where I am depicted on. Embarrassing things. For instance, if videos no longer disappeared and people had them on their mobile devices, I would not send them. [...] content would be much less personal and more carefully selected*” (female, 24). Thus, users seemed to be aware of the potential threat of sharing persistent information and potential consequences. The interviewees also stated that ephemerality makes them more willing to share sexually explicit content: “*With sexting, I think to myself how good it is that it disappears quickly [...]*” (male, 27).

Thus, our analysis revealed that ephemerality may positively affect user behaviour. We also found that ephemerality may positively influence the overall frequency, breath, and depth of information (Nguyen et al., 2012) users are willing to share.

## 4.2 Ephemerality, Privacy and Control Perceptions

The interviews revealed that users often relate ephemerality to privacy; i.e., the ability to control their personal information (Smith et al., 2011). To better understand ephemerality's positive side, it helps to look at what users said about their privacy and how ephemerality functions as a privacy proxy, implicitly providing more control to users.

Interestingly, all interviewees stated that they are generally worried about potential misuse by other users. Specifically, users consistently expressed their worries about what may happen if they share information with a large audience. Users' worries about the audience make them less willing to share information: "[...] because the reach on Facebook is much larger. Assuming that people would be tagged, and then not only my friends would see it, but also their friends. I wouldn't do it, on no account" (female, 23). Users expressed their concerns about what others may do with their information, such as forwarding it. Interviewees consistently stated that they worried about potential risks, such as embarrassment and reputational damages: "And then it [a picture] will be forwarded [...]. Like this, it goes on forever, and in the end, several hundred people have the picture. I don't want this for my pictures or for my friends' pictures, because it would be somewhat embarrassing. In the worst case, a conservative employer sees the picture, and then you don't get the position" (male, 26). Being aware of potential threats, users highlighted that they carefully selected the audience: "I send lightly dressed pictures only to individual receivers, never in the Story feature. [...] Because it would interfere with my privacy too much" (female, 22).

We found that users perceive that ephemerality counteracts their privacy concerns by increasing their control perceptions: "Especially when I am sending selfies [...] then I like it [ephemerality] a lot. I am not that concerned, because I just think, ok, it will disappear after ten seconds" (female, 24). Three additional control features on Snapchat also contribute to users' control perceptions:

First, Snapchat provides an audience control feature that helps to counteract users' worries about the information flow and potential misuse by other users. Interviewees stated that they have only a small number of contacts on Snapchat, especially when asked to compare it to Facebook: "On Snapchat, I have approximately twenty-five friends. On Facebook, I think I have more than five-hundred, much more" (female, 22). A small audience size helps users to feel more private when interacting on the platform: "Many of my four-hundred-and-fifty Facebook friends I don't know, and I also don't think they should see everything I do. Snapchat is much more private" (female, 25). Not only is the overall audience fairly small, interviewees highlighted that they mostly interacted with close ties: "I would say I communicate mainly with close friends. Not with strangers, but with people I know better" (female, 23). The specific audience composition is achieved by the audience control feature on Snapchat that allows users to create a network of close ties. The audience control feature results in an audience characterized by a small size and a well-defined composition, which contributes to users' control perceptions and lower privacy concerns.

This specific audience composition also contributes to users' trust perceptions. Throughout the interviews, users highlighted the high trust regarding the Snapchat audience. For instance, although no absolute ephemerality exists on Snapchat, trust among its users seems to counteract users' worries about negative consequences. The high trust among users makes them willing to share sensitive information, such as embarrassing pictures: "[...] I send most Snaps personally to specific persons, who are my best friends, and they have already enough embarrassing pictures of me, so I trust them" (female, 25).

Second, Snapchat allows users to adapt the extent of ephemerality for each Snap. The interviewees indicated that, depending on the sensitivity of the information, they adapted the extent of ephemerality. Especially, for sensitive information, users choose reinforced ephemerality: "I reduce the time for lightly dressed pictures, and there are also Snaps which you can look at forever. There is the infinity sign, with which you can look at Snaps as long as you want to. This is more about events, activities, food, outfits, nail polish, or songs. And otherwise, when it is about selfies, funny, or sad, or grimace pictures, then I would say I always have it adjusted to eight seconds" (female, 22). Users showed different preferences for the extent of ephemerality concerning Snaps. While some users preferred strong ephemerality (one to three seconds), others preferred lower ephemerality (10 seconds or unrestricted).

Strengthening the extent of ephemerality is also a means to avoid the threat of screenshots: *“If I have a picture with a funny filter, I put it to one or two seconds, so that nobody can take a screenshot”* (female, 15).

Finally, all interviewees were aware of the fact that receivers can screenshot their shared content. However, interviewees also knew that the sender is directly notified about screenshots. When asked how the screenshot notification feature is perceived, one interviewee explained: *“You will notice [...] when someone takes a screenshot, so you have control over a person”* (female, 23). Thus, supporting ephemerality with a screenshot notification feature contributes to senders’ control perceptions. Users expect to be notified when others take a screenshot and therefore feel more in control about the information flow: *“On Snapchat, it [the picture] is ephemeral and everyone may see it once. That’s it. Besides, I know if someone takes a screenshot. On all other platforms, I don’t. There, the picture may be immediately reproduced and forwarded”* (female, 24). On the receiver side, screenshot notifications represent a technical friction that makes it harder for users to break the platform’s ephemerality norm. By knowing that the sender will be directly informed about a screenshot that has been taken, the feature creates a mental barrier. Users highlighted that screenshot notifications make them stick to social norms on the platform, because they want to avoid conflicts with other users. Users indicated that this feature makes them less willing to take screenshots of others’ pictures. Most users indicated that they only take screenshots of pictures that depict themselves: *“The other person receives a notification. It would be dumb to take a screenshot on other types of pictures”* (female, 22).

To conclude, we found that users mostly worried about the potential misuse of their information by other users. Yet, the interviews revealed that ephemerality (as the time-limited availability of content for other users) represents a means of control that may help to counteract these concerns. Our findings also indicate that additional control features concerning the audience and the extent of ephemerality may help to further enhance users’ control perceptions.

#### 4.3 Downsides of Ephemerality

Our interviews revealed that users do not always perceive the automatic deletion of information as beneficial. Instead, users noted that they sometimes want to store information they perceive as valuable. However, this is hardly feasible in an ephemeral setting. Thus, users report feelings of loss and regret: *“For instance, when I take a picture of myself or a picture of something and I forget to store it, it’s a real pity. I would say, ‘Oh no, I would like to have this, I forgot to save it’ ”* (female, 24).

The interviewees indicated that perceptions of loss arise for senders and receivers: *“The problem is that the text disappears. This really annoys me. I wonder why they don’t change the text function to permanent. It is annoying [...] because I cannot remember a) what I have written and b) what the others have written”* (female, 23). Thus, ephemerality may cause problems for users, because it creates situations in which users cannot fully capture the content or recall what they have shared or received: *“The other [person] cannot see your picture, because it disappears so quickly. When it is visible for only a second, I don’t like that at all”* (male, 15).

Negative emotional reactions (i.e., annoyance) and physiological reactions (i.e., stress) related to ephemerality were pointed out throughout the interviews. The potential downsides of ephemerality became especially apparent from a receiver’s perspective. Users described two conditions in which ephemerality is disadvantageous.

First, interviewees pointed out that reinforced ephemerality may create feelings of time pressure, because the increased ephemerality makes it even harder for a receiver to fully capture the content: *“I think it is a little annoying when you only have two seconds to look at a picture, because I think that, for a picture, you need a little bit longer. If it is only available for two seconds and then it is already gone, it’s like: ‘ok, what was that?’ ”* (female, 24). Another interviewee noted: *“If they [Snaps] are very short, like only two seconds, [...] you can hardly see anything”* (female, 16). Users consistently expressed that strong reinforced ephemerality (one to three seconds) often cause feelings of annoyance. One interviewee stated: *“Let’s say I receive a Snap and I couldn’t see or couldn’t hear what was in it, I can replay it and if again I can’t see it or hear it, then it’s gone so then I have to write to that person,*



*'hey, can you send it again, I didn't see, I couldn't hear' "* (female, 22). One interviewee described her negative experiences with reinforced ephemerality and the receiver's negative reaction: *"He gets really upset when I reduce the display duration"* (female, 24). Second, we found that the differences in users' preferred extents of ephemerality may cause problems, particularly if the sender prefers a stronger ephemerality than the receiver: *"I have a friend who always sends Snaps that are only one to two seconds long. If she writes something on it, then I can't either see the picture or can't read the text. This is simply too short to fully retrieve the information from a picture"* (female, 23).

Interestingly, the downsides of ephemerality have often been related to the use of the chat feature, which also relies on ephemerality: *"It annoys me because often the text will be gone and you haven't seen it yet [...] which is completely stupid"* (female, 22). Users often expressed strong negative emotions related to the ephemerality of text-based content: *"There is the problem that the text disappears. This is really annoying, actually. Why the text feature isn't persistent, I don't understand, because it's really annoying"* (female, 23). Our analysis shows that users typically use the chat feature (i.e., text messages) only as a response to others' Snaps and Stories. Users hardly use the ephemerality-based text feature: *"[...] my text messages are always related to others' pictures, never without context. I would never simply write someone per Snapchat. Instead, I would do it via WhatsApp or anything else"* (male, 23). As this quote illustrates, most users noted that, for sharing important information, they switched to social media platforms that provide data persistence, such as WhatsApp: *"In WhatsApp, I write important things. In Snapchat, I ask: 'How are you?' whereas in WhatsApp, I write more important things [...]"* (female, 24). Most users said they used text messages' functionalities to exchange information with utilitarian and/or long-term value: *"[...] especially when writing something one would like to review later because it is important [...]. It is more practical to write such things via WhatsApp"* (male, 15). Users consistently explained their switching behaviour based on perceived loss: *"If I really want to exchange messages with someone, I rather use WhatsApp, because on Snapchat the messages are gone [...]"* (male, 22). Users reported that they switch to other platforms characterized by data persistence, and for the exchange of specific types of visual information: *"Sometimes you also send or receive beautiful pictures. In such cases, it is a disadvantage that they disappear"* (female, 24).

It became apparent that users switch to other platforms to exchange important information. Interviewees pointed out several examples of information that make them switch to social media platforms that allow for the exchange of persistent data, such as family pictures, pictures or videos of special events, or information about planning events and meetings. These examples illustrate that perceptions of important information mainly relate to the information's utilitarian and long-term value. Thus, our analysis revealed a downside of ephemerality: *loss perceptions*. Users reported that they switch to other social media platforms to share important information, because they seek to avoid the potential loss of valuable information.

## 5 Discussion

### 5.1 Key Findings

We investigated users' perceptions related to ephemerality and explored how ephemerality affects user participation. Based on our findings, we could identify positive effects of ephemerality on information disclosure behaviour, such as the overall willingness to actively disclose information as well as a positive relationship between ephemerality and the frequency, breath, and depth of the information that is disclosed (Nguyen et al., 2012). Users' control perceptions help us to better understand the positive side of ephemerality. However, we also found conditions in which ephemerality may negatively affect user behaviour. Specifically, ephemerality can make users less willing to share information or even make them inclined to switch to other platforms for the exchange of specific types of information. We revealed that loss perceptions help to explain these adverse effects.

First, we found that offering ephemerality-based functionalities positively relates to users' sharing intentions and their willingness to share a broad variety and intimacy of personal information (i.e., breadth and depth of information) of personal information (Nguyen et al., 2012), ranging from mundane to sensitive information, but not important information. Our findings are consistent with recent studies in ephemerality literature that highlight content choice differences between social media platforms that primarily rely on data persistence (e.g., Facebook) and ephemerality-based platforms, such as Snapchat (Bayer et al., 2015). However, in contrast to Roesner et al. (2014), we found that users are not only willing to share mundane information, but that ephemerality makes them more inclined to share highly sensitive information, such as pictures of excessive alcohol consumption and nudity. Users' willingness to share sensitive information may be explained by the relationship between ephemerality and self-presentational and privacy concerns. We found that users reported lower levels of these concerns when sharing content via ephemerality-based functionalities. This finding conforms to knowledge from the social media literature that indicates users' decreased willingness to share persistent information for instance on Facebook (e.g., Chen, 2013), owing to risks that arise from sharing persistent data (Bayer et al., 2015; Milne et al., 2017). We also found that users' privacy concerns are about the potential misuse by other users rather than by the platform providers. This finding stands in contrast to prior privacy research that mainly addressed privacy concerns regarding organizational misuses of data (Malhotra et al., 2004; Smith et al., 1996). Yet, we complement recent studies in privacy research in the peer context that highlight the relevance of privacy risks arising from peers' misuses of data (e.g., Ozdemir et al., 2017). Second, congruent with privacy research (Wilson et al., 2015; Xu et al., 2012), we found that users' control perceptions counteract privacy concerns. Our results revealed that ephemerality helps users to feel in control of the flow of their personal information. This finding is consistent with Kotfila (2014), who suggested that ephemerality-based platforms seem to better protect users' privacy by shifting control of digital content back to its owners. Our analysis also revealed that users are more willing to share information in the presence of ephemerality combined with additional control features, such as audience control, adjusting the extent of ephemerality, and screenshot notifications, because these features contribute to users' control perceptions. We found that users deliberately adjust the extent of ephemerality depending on the content type and its sensitivity. Our findings indicate that the control of display duration and screenshot notifications contribute to users' control perceptions, because: (1) reinforced ephemerality makes it more difficult for the receiver to take screenshots and forward the picture to other users, and (2) screenshot notifications represent a technical friction that keeps users from violating social norms on the platform. We also found that users apply the audience control feature and deliberately stick to a small audience size consisting of close ties. This finding is in accordance with social media literature that found that large and diverse audience composition results in users' worries about context collapse and other privacy risks (Marwick and Boyd, 2011; Vitak, 2012).

Third, our data analysis revealed downsides of ephemerality. Our findings show that for both the sender and the receiver, ephemerality can imply loss perceptions. The perceived importance of information influences the decision whether or not individuals decide to share it via ephemerality-based functionalities. The purpose of which to share information thus determines whether ephemerality is perceived as positive or negative. However, it can also be the case that users exchange information via these functionalities, and only afterwards realize that the information was of a long-term value, which in turn results in loss perception. Receiving ephemeral information that is valuable for a user can also create loss perceptions because the receiver lacks control to save the information. This finding complements insights from IS literature that indicates ephemerality's downsides from an organizational perspective because ephemerality of valuable information may be detrimental for decision-making and knowledge management in software programming (Salovaara and Tuunainen, 2015). Prior research in communication sciences emphasized the positive effects of ephemerality in the private context, such as positive emotions (e.g., enjoyment) that relate to the use of ephemerality-based platforms (Bayer et al., 2015). However, our study complements recent findings by Cavalcanti et al. (2017), who investigated different types of de facto information loss that can occur on ephemerality-based platforms. Complementing this study, our results identify potential detrimental outcomes related to users' loss

perceptions. Further, our findings indicate that users not only show negative emotional reactions (i.e., regret, annoyance) related to ephemerality, but also negative physiological reactions such as stress. Stress has been indicated on the receiver side, where reinforced ephemerality creates a time pressure cue that makes users struggle to fully capture the content and its meaning. This finding is consistent with existing knowledge from IS research in the e-commerce field (Amirpur and Benlian, 2015). For instance, the relationship between loss perception and negative emotional and physiological reactions has also been found in the advertising context (Neben and Schneider, 2015; Tang and Zhang, 2013). Moreover, Amirpur and Benlian (2015) showed that time pressure cues (such as reinforced ephemerality, in our case) result in psychological stress among consumers. This is consistent with our finding that the short availability of content creates stress perceptions.

## 5.2 Theoretical Contribution

To conclude, based on our findings, we propose a conceptual framework that captures the dual nature of ephemerality and how ephemerality contributes to changes in user behaviour (see Figure 1). The adverse effects of ephemerality can be described by underlying cognitive mechanisms: On the one hand, ephemerality helps users to feel more in control of the flow of their information, which is positively related to user behaviour. On the other hand, the time-limited availability of shared content may cause perceptions of loss, which may have detrimental implications for active user participation, because users seek to avoid experiences of loss on the platform. Thus, we propose that these loss perceptions make users act counter-intuitively, such as switching to other platforms, for instance concerning sharing important information.

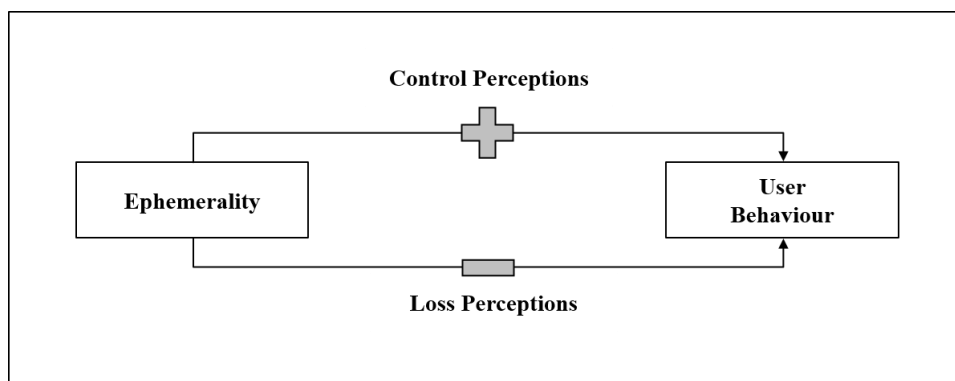


Figure 1. The Dual Nature of Ephemerality.

With our qualitative findings and the conceptual framework, we contribute to the IS field in two major ways: we contribute to IS research by investigating the relevance of ephemerality from an organizational perspective, and beyond knowledge management (Salovaara and Tuunainen, 2015). Our findings illustrate the relevance of ephemerality in user behaviour in the social media context. Ensuring active user participation is a major challenge for social media platforms that seek to monetize user data. We show how ephemerality may support a platform provider's strategy to generate more user-generated content and thus ensure the success of data-driven business models that hinge on active user participation (Claussen et al., 2013). IS studies indicated that a platform design determines how users behave, governing its overall success (Kane et al., 2014). We have contributed to the strategic perspective on the role of platform design and its features in user behaviour (Dellarocas, 2010) by illustrating adverse effects of ephemerality-based functionalities that providers should consider in their strategic choice-making (Berger et al., 2014).

Second, this study goes beyond the organizational perspective and contributes to privacy research in IS from an individual perspective. Specifically, we contribute to the existing knowledge about the key roles of users' control perceptions in user participation (Wilson et al., 2015; Xu et al., 2012). In privacy research, it is well known that a lack of perceived control about the collection and use of infor-

mation raises users' privacy concerns, which negatively affect their sharing intentions (Xu et al., 2012). Our findings support this perspective and shed light on ephemerality as a means to raise users' control perceptions. Besides, by revealing the dual nature of ephemerality concerning user participation, we contribute to IS research that indicated that features of an information system (e.g., social media platform) may enable but also constrain its users in specific ways (Kane et al., 2014). Our study supports this view by showing how ephemerality-based functionalities may motivate or hinder active user participation. IS research on ephemerality is still in its infancy (Morlok et al., 2017; Salovaara and Tuunainen, 2015). By revealing a dual nature of ephemerality, we help to develop a more nuanced understanding of ephemerality and contribute to the growing body of knowledge about ephemerality in various disciplines (Bayer et al., 2015; Berthon et al., 2009).

### 5.3 Practical Implications

Our study also has implications for practice. We offer insights for social media platform providers when deciding on the implementation of functionalities inspired by ephemerality. A high level of perceived control is crucial for active user participation (Xu et al., 2012). Since persistence-based social media platforms, such as Facebook, struggle with user participation based on the lack of perceived control (Brecht, 2017), platform providers must identify new directions to raise control perceptions. As our study illustrates, ephemerality offers the means to increase control over information flow for users, although it seems that the information type to be disclosed plays a key role. While mundane or sensitive information is shared on ephemerality-based platforms, users switch to other platforms (that rely on data persistence) to share important information. This must be considered when designing new platform features. Besides, as our study shows, providing additional control features that address potential misuse by other users (Ozdemir et al., 2017), such as control of the audience, adjusting the display duration, and screenshot notifications may further strengthen users' control perceptions and may thus help to ensure user participation. Second, providers should be aware of the dual nature of ephemerality. To avoid loss perceptions, providers should for instance offer features that allow one to selectively save information. Snap Inc. recently introduced two features to address information loss: the memory feature and the infinity feature (Snap, 2017). The memory feature allows users to save pictures and videos. Also, the infinity feature allows receivers to watch Snaps as long as they want to while the content still disappears after the receiver closes the message (Velasco, 2017). This feature may help to address the downsides of (reinforced) ephemerality such as a time constraint.

## 6 Limitations, Future Research and Conclusion

This study has three limitations, which provide avenues for future research. First, because there is still little knowledge about ephemerality generally and particularly in the social media context, our study is exploratory, and we primarily relied on qualitative data. Researchers may approach the role of ephemerality in user behaviour by drawing on quantitative research approaches. In particular, future studies may seek to further enhance the knowledge of the dual nature of ephemerality. Second, we relied on Snapchat users as our interviewees. Snapchat still represents the most popular ephemerality-based platform (Firsching, 2017). Its broad user base made Snapchat well suited for our exploratory study. Yet, we encourage researchers to go beyond this particular setting and to investigate the role of ephemerality on other platforms and contexts. Third, by drawing on qualitative interviews, our findings are based on self-reported data, which may suffer from social desirability bias. While qualitative interviews are well suited for investigating new, underexplored phenomena, IS scholars are encouraged to observe *de facto* user behaviour, such as counterintuitive sharing or switching behaviour that arise in the presence of ephemerality.

To conclude, our study examined ephemerality and its potential effects on active user participation. Our qualitative research approach allowed us to shed light on users' perceptions that may function as underlying mechanisms that drive or inhibit user behaviour in the social media context. Our findings have shown that users evaluate ephemerality as particularly beneficial for their privacy, because they feel in control of their information flow. However, our findings also shed light on potential downsides

of ephemerality. Users do not always evaluate the disappearance of their information as favourable. Rather, limited availability may create a time constraint and may result in loss perceptions or feelings of annoyance or stress. We hope that our study will spark future research interests, leading to the investigation the dual nature of ephemerality and going beyond the social media context.

## Appendix

First-Order Codes (Raw Data)	Second-Order Themes	Aggregate Dimensions
“I started to understand the advantages of this feature [Snaps], because you can just send random stuff and in the end it doesn’t matter [...], you don’t have to send relevant things, that’s the point, not being relevant” (female, 22).	Mundane Information	Variety of Information
“Because you don’t share anything important. I use it only for conversations” (female, 22).	Mundane Information	
“I send more funny pictures via Snapchat. [...] On other platforms, I don’t do that [...]. On Snapchat, it can also become a bit more embarrassing” (female, 16).	Sensitive Information	
“With sexting, I think to myself how good it is that it disappears quickly [...].” (male, 27).	Sensitive Information	

Table 1. Example of the Coding Process.

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