1. Introduction
Online social networks (OSNs) revolutionize increasingly larger parts of our lives. For more than a billion people, the online world is a natural extension of their offline world and it needs to be carefully managed. The users need to be updated, to write the “right” things, and to share information in a way that benefits their lives. However, as OSNs become an integral part of people’s lives, the management of privacy becomes increasingly important. Studies had shown that people are going more private during the years, actively restricting access to their profiles, which proves how crucial this issue to the design and success of OSNs (Stutzman, Gross & Acquisti, 2013). The information shared in OSNs, such as Facebook, Twitter and others, is here and it is here to stay, which adds a greater privacy complexity. The users should manage their future online social lives as well, practically, to manage their future privacy. Their current shared information will remain in the digital sphere for an unknown period of time, threatening their future desired identity. I want to design and evaluate mechanisms that will help users to manage their OSN exposure through longitudinal periods of time, building mechanisms that make it easier to ensure that users’ shared content will be viewed by the right people and at the right time.

2. Our Approach
When walking down the street, it is reasonable to assume that one’s privacy concern is about who currently sees her. In the privacy research field, only few studies refer to future privacy (Ayalon & Eran, 2013), while most studies refer to current privacy. However, when using OSNs, future privacy has a may have a far-reaching impact. Users do not always grasp the problematic aspect of future privacy in advance. However, as Facebook’s Timeline, and other mechanisms, are making past information increasingly accessible, usable and effective mechanisms need to address privacy in the long term, rather than in the short term. We present a study that empirically investigates the privacy preferences and manifested behavior of Facebook users with regard to historical information. We frame our research as retrospective privacy: how sharing preferences correlate with the time passed since publishing the information. We conducted a between-subjects user study in which we asked Facebook users to take a survey, using a custom-built Web application. We recruited the participants using Mechanical Turk. They were 18 or older and 43% of them were between the ages of 25-34. Additionally, they had a Facebook account for at least two years. The participants were asked about five posts published by them. They were randomly divided into four conditions, differing at the epoch of which their posts were fetched from: 1) current date of the survey up to one year ago; 2) between one year ago and two years ago; 3) more than two years ago; 4) control group (the entire time span of the user’s Facebook use).

3. Results
The study results reveal the extent and the nature of the relation between time and sharing preferences. We find that there is a negative correlation between willingness to share a post and the time passed since first publishing it, describing a decrease in willingness to share aged information, as displayed in figure 1 (Spearman correlation test: \( \rho = -0.21, p < 0.0001 \)). We find that following factors correlate with time and have an effect on the willingness to share a post: post’s relevancy as perceived by the user, the extent to which the post represents the user, social interaction around the post, life changes since publishing the post and changes in the user’s social network. For example, with post’s relevancy, we find that there is a significant difference between the three conditions (0-1 years, 1-2 years 2+ years) showing that the most recent posts are perceived as the most relevant ones. (Kruskal-Wallis test: \( H = 26.00, 2 \text{ df}, p < 0.0001 \)). In addition, we find a positive correlation between willingness to share the post and its relevancy (Spearman correlation test: \( \rho = 0.55, p < 0.0001 \)).

4. Implications for Design
We further explore how the study results can be used to guide the design of longitudinal privacy management interaction models. Specifically, we look at proactive mechanisms, such as an expiry date for information, and empirically suggest default values for the date. Furthermore, we suggest a model that predicts which posts are possible candidates for long-term archiving.

References