Background

- 620 million accounts are stolen from 16 different websites
- Prior studies focused on:
  - The security and usability of authentication schemes
  - Users’ password management strategies
  - Automated techniques to detect unauthorized access to user accounts
  - Educational tools to prevent social engineering attacks.
- There is a gap in understanding:
  - Users’ behavior upon losing access or identifying an unauthorized access to their online accounts
  - Users’ strategies to protect their accounts in the future

Research Questions

1. How do users respond to a situation when they lose access, or identify an unauthorized access to their online account?
2. What are the strategies and contingency plans of users to protect their online accounts in the future?

Methods

- Semi-structured interview (audio-recorded) with 22 participants in the USA
- Diverse backgrounds of participants: Mathematics, Learning Science, Architecture, and Engineering
- Study session: Between 20 and 30 minutes
- Compensation: $10 Amazon.com gift card
- Thematic analysis on transcription

Findings

- 17 of 22 participants either lost access or identified unauthorized access to their financial or identity accounts.
- Reasons behind Losing Access to Online Accounts:
  a. Geographic relocation
     “There was one email account that I lost completely because I had not connect my phone number with it and I tried using it from a different country using a wrong password and it blocked me out.” (P15)
  b. Lack or failure of secondary authentication
  c. Adversary’s actions
- User’s prevention strategies could increase security risks
- Accessibility issues constrain secure behavior
- Security Misconceptions
  - Email will notify whenever there is an unauthorized access!
  - Security software, like an antivirus application protects online accounts!
  - “They [adversaries] cannot get my password.” (P06)

Future Works

- A large-scale survey to attain quantitative and more generalizable results
- Investigating users’ strategies to protect the medium used to write down passwords
- Exploring the relation between users’ strategies to protect their online accounts and the underlying susceptibility to social engineering attacks

Figure 1: Prevention Strategies and Contingency Plans of Participants to Protect their Online Accounts