Towards Building a Support System for User Security Awareness

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Problem

Users time and again take security risks despite warnings because they are either unaware of the possible repercussions of their actions or they think that the utility is worth the risk. A fundamental problem that feeds this behavior is that users do not receive any feedback at a later point in time on how they are doing from a security point of view.

We hypothesize that given the right support system, the users can in fact be trained to care about security and privacy decisions. The support system will present the users with a journal of their security practices and allow them to track their progress over time.

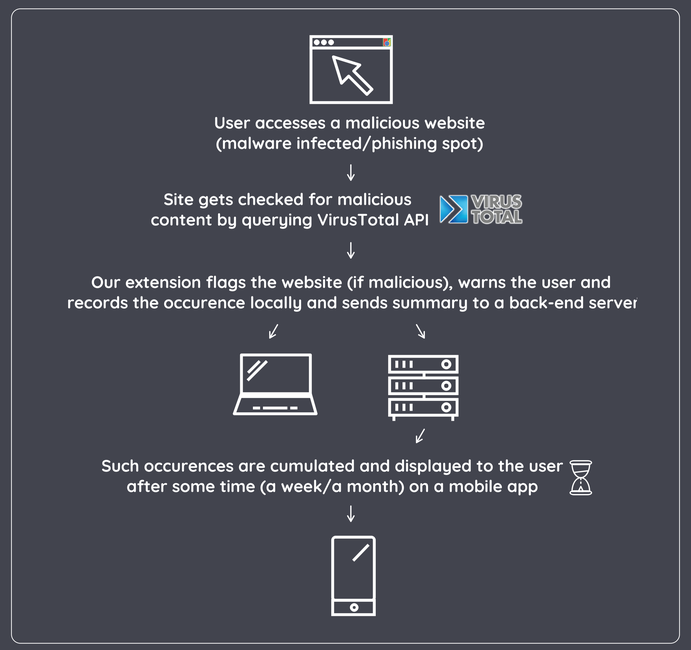
Existing Tools

We surveyed 25 of the most popular Chrome and Firefox browser extensions that help protect users' security and have presented a sample in the following list:

- 360 Internet Protection
- LastPass
- Avast Online Security
- Netcraft extension
- Avira Browser safety
- NoScript
- Comodo Online Security
- SSleuth
- Dr. Web
- Stop Phishing
- J2TEAM Security
- Web of Trust

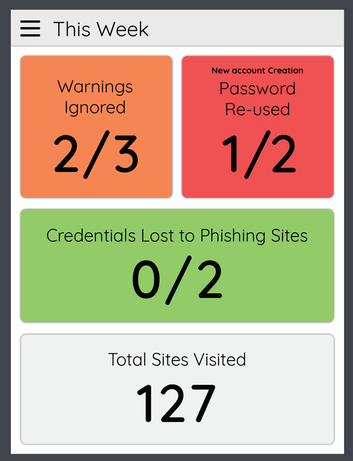
None of the tools surveyed provide delayed feedback; the only tool that does come close is LastPass, which in addition to managing sensitive information, also reviews user password habits.

Key Idea: Time Shifted Feedback on Security Behavior



A view of the proposed tool gathering information on visiting malicious sites for delayed feedback.

Critical user actions that require feedback.



A mock-up of delayed feedback presented on a mobile phone.

Initial User Survey

Methodology: Exploratory, semi-structured interviews
Age Group: 17-49
Sample Size: 10
Time per interview: 30-40 minutes long
Area: Urban Lahore

Interview Structure

- Demographics
- Internet Usage
- Security Mental Model
- Online Threat Perception
- Mock-up Feedback

Findings

Users were found to have polarized views on their online security. On one end, users were confident of how they had secured themselves, while on other they did not think necessary to take security measures at all. Users in general did not trust tools with their sensitive information.

Research Angles

- How to make users interested in improving their security behavior?
  - Removing mental blocks
  - User Education
- How to make users stick to the goal of improving security behavior?
  - Gamification
  - Leveraging Social Networks

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