

Project Proposal:

## **Combating Phishing with the aid of persuasive techniques**

### **Background**

Security systems involve both technology and people. Technological advances make the task to provide security easier but it is becoming increasingly evident that the human factor is the weakest link. Security problems relate to risk and uncertainty, and the way we react to them. Cognitive and perception biases affect the way we deal with risk, and therefore the way we understand security. In order to be effective, users should understand the risks involved, need of security and be aware of available security tools/measures, so that they are used.

To illustrate, let us take the example of Phishing. Phishing attacks trick people into logging on to websites that appear genuine but actually steal passwords. Technical measures can stop some phishing tactics, but stopping users from making bad decisions is much harder. Various visual indicators are present in the browsers - on status bar and address bar - that indicate whether the site is authentic or not. But they are rarely noticed by many users. Even if they are aware of the risk involved, they falsely feel more secure if there is a lock icon or message "verified by .." inside the web-page. Deception-based attacks are now the greatest threat to online security.

The scope of the project is to design a web based application that attempts to make users aware of the risks involved and available security measures. Our application will be designed on the principles of chosen persuasion strategies, that have already been applied to other domains.

### **Connection with course**

Persuasive technology is broadly defined as technology that intentionally changes attitudes or behaviors through persuasion and social influence. Captology - the study of computers as persuasive technology - investigates how people are motivated or persuaded when interacting with computing products. Captology focuses on the planned persuasive effects of computer technologies. B.J. Fogg proposed the three basic ways that people view or respond to computing technologies. Persuasive technologies can function as - tools, media, and social actors. In his book entitled "Persuasive Technology: Using Computers to change the way we think and do" he has listed many persuasion strategies like -

Tool

- making target behavior easier to do
- leading people through a process
- performing calculations or measurements that motivate

Media

- allowing people to explore cause-and-effect relationships
- providing people with vicarious experiences that motivate
- helping people rehearse a behavior

Social Actor

- rewarding people with positive feedback
- modeling a target behavior or attitude
- providing social support

We will be studying these persuasion strategies and select those that are suited to our application.

### **Approach**

- Previous applications of captology strategies to other domains will be studied.
- Next step would be to develop the web based application using selected Captology strategies.
- Design a test that captures their phishing awareness.
- Compare the performance of users who used the application with users that did not have access to our application, on the test – before and after using the application.

### **Expectations**

This is a practical application of concept of persuasion. By observing the theory working in real life, it will allow us to understand persuasion comprehensively. Thorough this project, we are hoping to learn how the use of persuasive technology can be extended to address other domains.

### **Evaluation**

Success of the project depends on three criteria -

- Successful development of the application.
- Successful design of the test.
- Significant improvement in the performance of users on our designed test who used the application compared to those who have not.