Abstract

This paper addresses the emergent need for training measures designed to improve user behavior in regards to security. We do this by proposing a frame-work for information security training that has been developed for several years and over several projects. The result is the framework ContextBasedMicroTrain-ing (CBMT) which provides goals and guidelines for how to better implement information security training that supports the user in the situation where the user needs support. CBMT has been developed and tested for use in higher education as well as for support of users during passwords creation. This paper presents version 1.0 of the framework with the latest refinements.

1 Introduction

It is well established that insecure user behavior is a major problem in information security [1]. Users are commonly referred to as the weak link in security and while there are many technical security measures that address technical security issues, there is still a need for ways to improve user behavior with regards to security [2]. Threat actors recognize this notion and are often exploiting users, making the need for measures towards secure behavior emergent [3]. Desmand [4] described a need for making users understand the consequences of insecure behavior and learn them to be-have in a secure way [4].

The common suggestion for how to improve user behavior is through the use of training [5]. Further, there are many different suggestions on how to carry our security training, from the practitioner as well as the research community. Different training measures range from lectures to micro training or special purpose tools such as pass-word strength meters. While there are research examples of individual studies were researchers provide good evidence that specific methods work, there are reports that suggests that organizations training programs are not grounded in empirical evidence of their validity [6, 7]. As such, the need for further research into this area is apparent.

This paper reports on research in this area that has been ongoing since 2014 intending to address the following objectives:

• O1: Develop a framework of guidelines for user training that supports user aware-ness and security-related decision making.

• O2: Evaluate how the framework developed in O1 can assist in making users act more securely

• O3: Evaluate if the framework from O1 can be applied in higher education

As such, the paper will present and discuss the framework developed in the projects and focus on the later parts of the development where the framework is refined. Fol-lowing the presentation of the research process, previously published work will be accounted for and briefly described. The paper will then discuss the final part of the research process and present the final framework developed in the research. The pa-per will be concluded with a discussion on the topic and directions for future work.