

Online Banking Authentication Augmentation

By

Jeffery L. Williams Jr.

*A creative component submitted to the graduate college
in partial fulfillment of the requirements for the degree of*
MASTER OF SCIENCE

Major: Computer Engineering/INFAS

Program of Study Committee:

Doug Jacobson, Major Professor

Jennifer L. Davidson, Minor Representative

Barbara L. Licklider, Outside Focus Representative

**Iowa State University
Ames, Iowa
Monday, March 26, 2012**

Paper Submission Date: March 26, 2012
Oral Examination Date: April 9, 2012 @ 1:00pm

Online Banking Authentication Augmentation

ABSTRACT:

The environment of online banking has grown tremendously over the past decade and will continue to grow as financial institutions continue to strive towards making banking more easy and convenient for their customers. There are several advantages that online banking provides to the customers and the financial institution. Online Banking is convenient because unlike a bank at a physical location, online banking websites never close. The ubiquity of online banking is another huge advantage. Many bankers have money issues while they are away from home and online banking allows them to log on instantly to handle business wherever they are. Online banking transaction speeds also seem to be quicker than ATM processing speeds. Online banking gives financial institutions the ability to save money, due to the decreased transactions made by tellers. These are just a few advantages that online banking provides, but it also has some disadvantages. The biggest disadvantage to online banking is security issues. Users of online banking information can be compromised by attackers if the right security methods are not used. This leads to an increase in bank fraud, which usually ends up costing the users and financial institutions excessive money.

This creative component will focus on existing user authentication methods, authentication methods used by financial institutions today, and introduce a new method to improve online banking authentication while making it applicable for financial institutions. The goal of this authentication method will be to help decrease the human error factor of security by using a one time password that will be sent to a mobile device that the user has. There are many different ways authentication can be accomplished. The key to securing systems is identifying the needs of the system and the information that is being protected by the system. Financial institutions are responsible for securing their customers information and any compromises to this information could cause major problems. That is why it is vital for financial institutions to have strong security tactics on their online system.