

JUNE 2008 · WHITEPAPER

**THE ONE THING YOU SHOULD KNOW
ABOUT A STRONG LOGIN SOLUTION:**

Simple Yet Effective Authentication for
Customers of Financial Institutions

FFIEC*-compliant user login authentication
*Federal Financial Institutions Examination Council



vidoop

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EXECUTIVE SUMMARY



It is easier for people to *recognize* their login information as opposed to *recall* it. This is the one thing you should know when trying to provide simple yet effective strong login authentication for financial institution customers. As password creation continues to require greater complexity, users find it increasingly more difficult to remember each password. Rather than using alpha-numeric, symbol-driven passwords, Vidoop allows users to easily recognize a set of secret image categories in a way that promotes strong login authentication and defeats prevalent forms of hacking. Financial institutions and e-commerce Web sites will find that users enjoy their login experience and are more likely to return for recurrent online transactions.

THE ONE THING YOU SHOULD KNOW ABOUT A STRONG LOGIN SOLUTION

Introduction

Financial institutions have strong incentives to drive Web-based transactions founded on the potential financial advantages that stand to be gained. Unfortunately, online privacy and security issues limit online transactions and keep potential customers at bay. Providing consumers with multi-factor¹ login authentication (strong authentication) provides the online protection needed to overcome security concerns and enjoy the benefits of online banking, financial services and e-commerce.

According to research from Gartner (*cited in CRM Today*), a recent survey finds that 95 percent of U.S. banks now comply with – or are close to complying with – the December 2006 Federal Financial Institutions Examination Council (FFIEC) authentication guidance, which mandated that stronger security solutions be implemented. However, survey data from RSA (2007) indicates that 91 percent of bank account holders are dissatisfied with the current login security provided by their banks and would be willing to use stronger security methods beyond “username-and-password” if offered.

This White Paper explores the advantages of recognizing picture categories versus recalling complex passwords during the login process. The benefit of recognition over recall is the one thing you should know to promote strong authentication for online transactions.

¹ Multi-factor authentication requires that two or more of the three categories of factors be used to authenticate a user; something the user is, something the user has, and something the user knows. Using more than one factor is also called strong authentication.

- Data from Gartner, Inc. (cited in eMarketer) suggests banks could do more to foster consumer trust of online transactions.
- Gartner, Inc. has also found that approximately **33 million** U.S. adults do not bank online due to security concerns.
- And nearly nine million U.S. adults have stopped banking online altogether.
- Another estimated **23.7 million** U.S. adults will not try online banking as a result of security concerns.

Challenge

Life would be much easier if consumers could use one password for every Web site and application that requires authentication. Unfortunately, the risks associated with conducting online financial transactions demand strong, user-unique authentication.

For most, more robust security requires users to create more complex passwords. Creating a “strong” password can require remembering a minimum of eight characters that must include at least one number, one special character and possibly one uppercase and one lowercase letter. But who has just one password? Regrettably, having a large number of passwords reduces memorability and increases insecure practices (Adams and Sasse, 1999).

When consumers realize they have too many complex passwords that can’t be remembered, they resort to creating easier ones or simply using the same one repeatedly. Some login protocols prevent the use of simple passwords, forcing users to remember an obscure username and password for one particular site or application. This can be very frustrating, especially after several failed login attempts result in account lock-out. Thus, the biggest challenge facing those who conduct online financial transactions is remembering several complicated passwords.

MORE THINGS YOU SHOULD KNOW:

- A 2007 survey from Gartner, Inc. revealed that roughly **3.6 million U.S. adults** fell victim to phishing attacks from August 2006 to August 2007, resulting in **3.2 billion dollars in losses**.
- This data shows a **56 percent increase** in successful phishing attacks from the previous year.
- According to the survey, debit cards and other bank credentials are a growing target for phishing schemes, citing that **47 percent** of consumers who lost money to a phishing attack had their debit or check card information stolen.
- Avivah Litan, vice president and distinguished analyst at Gartner, Inc, stated in conjunction with results from this survey that “custodians of consumer financial accounts must protect accounts through fraud prevention, stronger user authentication and transaction verification.”

Solution

Simply stated, recognizing information is easier than recalling it. If given the opportunity to choose login information significant to them, consumers can more easily remember the information by simply recognizing it, unlike information such as complex passwords, they are forced to recall. A string of password characters might be easier to remember if the components were in plain sight and could be recognized by the user. However, this convenience would quickly lead to compromised security due to the inherent danger of keystroke logging and screen capturing.



What if strong login authentication could be accomplished using pictures rather than words? And what if users could recognize chosen pictures rather than having to recall them? **And what if those pictures provided a level of security that eliminated the need to remember passwords and protected against prevalent forms of hacking** – all with no hardware required? **This solution is precisely what Vidoop does.** Vidoop uses the stronger brain function of recognition instead of the weaker function of recall required for traditional password systems.

Benefits

From a business perspective, Vidoop gives account holders a quick, easy login with the assurance to complete online transactions knowing that their login is secure behind enterprise-grade, multi-factor authentication. Vidoop fixes the password problem by validating users with a matrix of random images that belong to static categories. The ground-breaking solution provides robust authentication strong enough for banking, finance, and e-commerce while providing a usable, stress-free experience.

Discussion

Five decades of research² demonstrates that the human brain processes visual imagery more reliably than text. Time and time again, it has been found that pictures are remembered better than words, because pictures are more likely than words to evoke both verbal and imagery codes. Furthermore, according to the **Picture Superiority Effect** cited in this research, concepts presented in pictures rather than words are much more likely to be remembered.

The basis of the Picture Superiority Effect can be attributed to the greater sensory distinctiveness pictures have compared to words. Recognizing image categories minimizes the load on a user's memory by making options visible in plain sight. The user is not burdened or discouraged by trying to remember difficult, complex characters. Humans are capable of remembering between five to nine chunks³ of static information at a time. However, in a dynamic environment such as the Web a user's memory capacity is limited to roughly two or three chunks of information, thereby making the Web "an enemy of human memory" (Rhodes, 1998).

Vidoop combines the inherent ease of recognition with the reliability of the Picture Superiority Effect to create an intuitive, sustainable, positive user experience.

² Apple, 1987; Brown, 2007; Childers and Houston, 1984; Endestad, Magnussen, Helstrup, 2003, 2004; Franklin, et. al., 2005; Gadzella, 1991; Hamilton and Geraci, 2006; Kinjo and Snodgrass, 2000; Mintzer and Snodgrass, 1999; Nelson, et. al., 1976; Nielson and Molich, 1990; Paivio, 1971, 1986; Plesis, 2005; Shepard, 1967; Stenberg, 2006; Whitehouse et. al., 2006; and Wiedenbeck, 2005

³ A chunk can be defined as a group of equal-sized pieces of memory. The word chunking comes from a famous 1956 paper by George A. Miller, The Magical Number Seven, Plus or Minus Two: Some Limits on our Capacity for Processing Information. Short term memory has a capacity of about "seven plus-or-minus two" chunks.



Vidoop provides enterprise-grade, multi-factor authentication solutions to all businesses. We offer authentication solutions **strong enough for banking, finance and e-commerce, while delivering a uniquely usable, stress-free experience for users.** Our technology results in a visibly secure Web site that equates to more customer confidence, more traffic and more business.

In summary, the one thing you should know about strong login authentication is that the human brain processes visual imagery more reliably than text. These findings are backed by research, and *the Picture Superiority Effect* reinforces the supremacy of pictures over text. Vidoop combines the intrinsic ease of recognition with the dependability of the Picture Superiority Effect to create a convenient, intuitive, sustainable customer experience that drives online participation using real security that earns consumer trust. Recognition used in conjunction with the Picture Superiority Effect undoubtedly lessens the load on a user's memory, resulting in fewer support calls, decreased failed logins and increased customer confidence.

Vidoop has combined a talented team of developers with experience from Microsoft, the U.S. Naval Research Laboratory and the National Institute of Standards & Technology as well as various institutions in the banking, energy and healthcare industries. Vidoop is a privately held company currently employing more than 40 professionals at our Portland and Tulsa offices.

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