

Extended Validation: Making a big difference to the online community

Executive Summary

98% of Internet shoppers will prefer shopping on Web sites that display the green address bar of Extended Validation (EV), and 100% of those shoppers expect to notice the green address bar, according to a recent study conducted by VeriSign.

Not only will customers respond favorably to the green EV address bar, but the overwhelming majority of them prefer to see that the EV certificate was issued by VeriSign.

That's exciting news for online merchants who want an eye-catching and unequivocal means to prove to their customers that those customers can conduct financial transactions safely and securely.

Customers are concerned about security, and because of that, some of them are afraid of entering sensitive data online. Recent surveys show that about half of Internet users are still fearful about purchasing online. And 65% of online shoppers have abandoned an online purchase because they didn't get a sense of security when it came time to provide payment information. 53% of those shoppers report that they would have completed the transaction if it had a recognized trust mark such as the VeriSign Secured™ Seal (TNS Research, April 2006).

The Extended Validation green address bar would seem to be such a recognized trust mark—an unmistakable way for online customers to see at a glance if the site they are visiting is one to be trusted. Green means “go” all around the world.

But will customers see it? And if they do see it, will it make a difference in their perception of the site? There are a lot of new features and functions to learn in a new browser like IE7, and although it seems that the green address bar is a standout, there has been no proof yet that customers would appreciate the value of a site with a green EV address bar versus a site without it.

In October and November of 2006, VeriSign conducted a study of 56 Internet shoppers to try to answer these questions. The results showed that there is no doubt that EV will be a major factor in whether users go to and stay at a site.

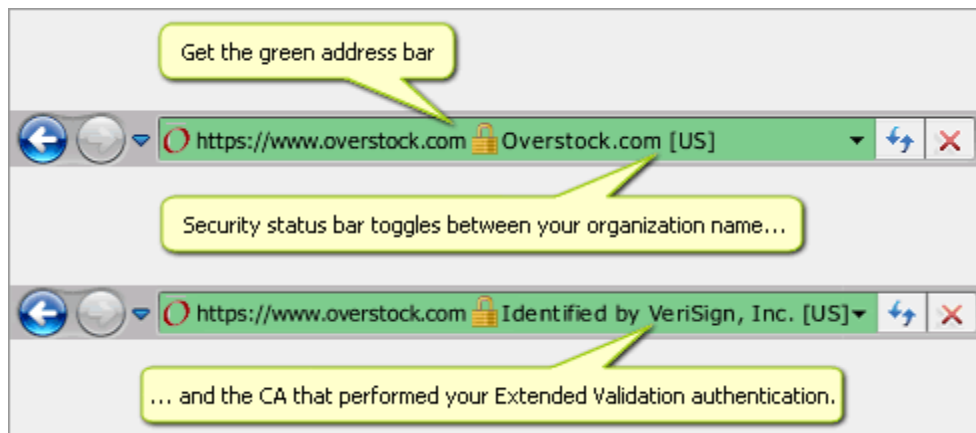
About Extended Validation

Extended Validation SSL certificates have been designed to strengthen the security of Internet transactions and to demonstrate that security with an eye-catching change to the browser. Using methods and standards agreed upon by the CA/Browser forum, certificate requestors will be subject to a thorough, standardized vetting process. The Certification Authority that issues the certificate must be able to perform the authentication procedures required, to ensure that the requesting organization is able to obtain the highest level of trust. The Certification Authority (CA) is the trusted organization that verifies the accuracy and applicability of the Web site owner's identifying information before including it in the certificate.

Before an online owner is able to obtain an EV certificate, they must go through a vetting process that not every CA is equipped to handle and not every applying organization can pass. Legal Existence, Identity, Registration Number, Registered agent, Right to Use Domain Name, and Authorization for EV Certificate are all confirmed by the issuing CA.

Newer browsers will incorporate interface changes so visitors can see that the site has undergone these stringent requirements. The first EV-compatible browser, Internet Explorer 7 (IE 7) uses the most obvious display, the green address bar. The URL field turns a glowing soft green if the Web server for that URL has been secured with an EV SSL certificate.

The SSL lock icon, formerly at the bottom of the page, moves up to the top part, in the address bar. Beside the lock icon is the name of the organization that owns the EV SSL certificate, extracted from the certificate itself. At regular intervals, the green address bar also displays the name of the CA, the trusted third party that issued the certificate to the organization.



The combination of EV SSL certificates and new browser versions will help Internet users easily discern a difference between Web sites. They will know that the Web sites they are visiting indeed are the ones they expect to access; not fraudulent ones masquerading as popular sites. This will also make it considerably more difficult for perpetrators of phishing schemes to successfully impersonate high-traffic Web sites.

And the users also perceive a difference in the site's willingness to take care of its customers. To them, the fact that an organization went to the trouble of getting an EV certificate implies that they care more about security and about the customers who use their site.

User research and observation leads to conclusive results

In October and November of 2006, VeriSign conducted a study of 56 Internet shoppers. VeriSign wanted to learn:

- If users quickly saw the difference between a site with a green EV address bar and a site without
- If users would prefer to do business with an EV site
- If users preferred seeing VeriSign as the CA name in the address bar.

Participants were selected based on the following criteria:

- They shopped online at least once a week
- They were familiar with the Internet Explorer browser
- They recognized the SSL lock icon that appears on the browser of a site that has an SSL certificate.

The study consisted of 29 women and 27 men, randomly selected, from 16 states in the US. Participants represented a wide range of age and income levels. They had no known affiliation with VeriSign.

Results

The results showed overwhelmingly that users notice the green EV bar and expect it to influence their online use. The great majority of users state that they will prefer to shop at sites with EV.

- **100%** of the subjects indicated that they expect they will be aware of sites that display the green EV address bar.
- **100%** of the subjects said that they are more likely to share their credit card information with sites that show the green bar.
- **98%** of the subjects indicated that they would prefer to shop on sites that display the green EV address bar.
- **80%** of the subjects said that if a site they shopped at stopped displaying the green EV bar, they would be hesitant to shop there.
- **91%** of the subjects said they preferred the name “VeriSign” as the issuer of the EV certificate.

Methodology

Testing comprised more than just survey questions. Experienced usability testers engaged participants in a 20-minute WebEx session. During the session, users were shown two fictional Web site mockups, *shopon-line.com* with the green EV address bar, and *electronics-on-line.com*, without EV. Half the users saw the EV site first and half the users saw the other site first.

All participants saw the same images and were asked to respond to the same questions. The testers read from a script so there would be no variation in the questions asked of the participants.

(Refer to Appendix A to see the script users followed.)

All sessions were documented and recorded.

What the customers are saying

As the participants reviewed the sample Web sites, they spoke freely about their reaction to Extended Validation and VeriSign. Their comments were all documented and recorded.

100% of subjects indicated they will notice the green bar in the future

All participants very quickly understand the purpose of the green EV bar. The moderator told them:

The green bar on the Shopon-line Web site means that the organization who owns this site has gone through extra steps to prove they are who they say they are. The leading Internet security providers are working together to agree on exactly what these extra steps will be.

Users were allowed to look over the new browser features and click a link to a Wikipedia article that briefly described Extended Validation.

Users looked at three sets of images with and without Extended Validation, each one asking them to enter sensitive data. The moderator noted whether the participants identified that one site had a green address bar and another did not. At the end of the session, one of the questions the moderator asked was:

When you shop online in the future, will you be likely to notice sites that show the green bar versus those that do not?

All participants responded yes. Some of the quotes from these participants demonstrate how well they understood the purpose of the green EV bar and how much they are likely to be aware of it.

I really like that idea—it's kind of idiot-proof. When you get busy and you have a nine-year-old, it's kind of hard to miss a green bar.

Green bar is good, white bar is “proceed with caution.”

Now I will notice it because I know the meaning.

Definitely it helps out visually. What it indicates is a higher level of assurance and that these sites can be trusted.

I notice the lock on a regular basis, so I would definitely be more aware of the green bar.

I'll look for Web sites that have it and be a little more secure about going there.

100% of the subjects said that they probably or definitely would share their credit card details with a site that showed the green bar.

Participants were asked to rank the likelihood of their entering credit card details into both sites the site that contained the green EV address bar and the one that didn't.

For the site that had Extended Validation:

- 49 participants said they would definitely enter their personal information on this page
- 7 participants said they would probably enter their personal information on this page

For the site that did not have Extended Validation:

- 14 participants said they would definitely enter their personal information on this page
- 20 participants said they would probably enter their personal information on this page
- 17 participants said they would be less likely to enter their personal information on this page
- 3 participants said they would not enter their personal information on this page (unless they had personally researched the site)

Some quotes from the users:

Green means that these people are more trustworthy. I'd feel more secure giving credit card information to a site that has the green bar.

The lock makes me feel secure enough and the green makes me feel even more secure.

It makes me feel safer when entering a credit card.

98% preferred to shop at the site that displayed the green EV address bar

Once the customers understood the purpose of EV, almost all of them indicated a preference for shopping at sites that displayed the EV address bar. After observing the two fictional Web sites, participants were asked, "Which of the two sites would you do business with? Why?"

Fifty-five out of 56 participants said they would prefer to do business with the site that displayed the EV green bar. (The 56th user had no preference and would only require the SSL lock.)

Some quotes:

It would give me more confidence and make me feel better about the purchase and shop online more often.

I would buy more at the site that has the green bar than those that don't.

It shows that the company took extra steps and that they care about their customers.

I'll go to the green bar more often in the future because I know it has extra security

I would be more willing to trust the smaller, independent Web sites that don't have as much brand recognition as the big companies do.

I would be inclined to shop at Web sites that show the green. I wouldn't have said that at the beginning. But the more I see it and understand, the more likely I am to want to shop at a site with green.

80% of the subjects said that if a site they shopped at stopped displaying the green EV bar, they would abandon the purchase or be hesitant to continue.

Participants had a lot to say about the possibility of using a site that displayed EV, only to come back one day and see that it was no longer green.

I'll do a double take if I don't see the green bar.

I would question it- I would go to FAQs and make sure they haven't changed their policies. I would wonder why they would take the green off. If it makes people feel secure, why would they take it off?

That would concern me. They lost certification... It's like the Better Business Bureau--you have to go through extra steps to become one. If someone lost their BBB standing, that would be a concern

I wonder what Shopon-line did that they are no longer verified. I'd be a little leery and look to purchase on another Web site. Either they did something – they're no longer verified--or they stopped paying their bills

I would look for another Web site that sold the same kind of stuff. I'd be very leery.

I would probably call the company to see if there was a problem. ... Wonder if the site was hacked or having some sort of problem.

I would think twice about buying something on their site – I would wonder why they are less secure now than they were before.

I would probably think that I'm not really there. I'd question if I should use it or not.

91% of the subjects said they preferred the name “VeriSign” as the issuer of the EV certificate.

The participants were asked if they recognized the names of some of the standard CAs. They were shown a list in alphabetical order, of COMODO, Entrust, Geotrust, Godaddy, Thawte, and VeriSign and asked which names they were familiar with. Then they were asked, “Would seeing any of these brand names increase your level of confidence when you are shopping online?” Fifty-one out of 56, or 91%, answered VeriSign as the name that gave them the highest level of confidence. Customers had this to say:

VeriSign has good credibility and reputation

The only name I would trust is VeriSign.

I would prefer to see VeriSign because I don't know much about other sites. With my limited information, I'd be comfortable about VeriSign.

VeriSign is the only SSL company I know of.

Statistical significance

The responses of fifty-six test subjects provide a very close parallel to the answers we could expect to get from our target population of 118 million, the approximate number of Internet shoppers.

Fifty-six test subjects provide a confidence level of 90% with a confidence interval of plus or minus 11%. The confidence level means that VeriSign can be 90% certain that the responses gathered will be within the range of the confidence interval. The confidence interval is plus or minus 11%.

Therefore, VeriSign is 90% certain that if the entire population had been tested, the answers would fall within a range of 11% less or more than the numbers provided within this document.

Conclusion

The results were so consistent that VeriSign stopped the testing after 56 subjects.

A future study will be done by a neutral third party research company, to obtain a 95% confidence level with a 5% confidence interval.

Appendix A. Test Script

The following pages reproduce the script followed by the VeriSign testers.

VeriSign, Inc.

Test Materials

Extended Validation
Research Study

487 E Middlefield Ave
Mountain View, CA
94043

October 2006

1 Overview

Goals

- Find out if users prefer to do business with sites that have a green EV bar
- Explore whether users prefer VeriSign over other CAs

We will test participants based on shopping habits and familiarity with Internet Explorer, and familiarity with secure sites. Participants will receive \$30 Amazon.com Gift Certificates by email.

Sessions will be held using a WebEx “meetmenow” account, and recorded with Morae.

Scenarios

There will be two shopping sites, all showing https pages.

Users will be split into two groups. Half will see the green EV bar first, half will see the white bar first.

Part 1

Login page:

- Introduce the EV bar. The site with EV also has an announcement on its https pages that it has EV.

Part 2

2a) Enter Address page

- User chooses which site they would be most likely to provide their address to: a site with a green EV bar or a site without the EV bar

2b) Enter Credit Card Information page

- User chooses which site they would be most likely to provide their credit card information to: a site with a green EV bar or a site without the EV bar

Part 3

- Follow-up Questions

2 Test Session Setup

- Start the WebEx session
- Minimize the testing artifact
- Minimize the screenshots explaining Extended Validation
- Minimize the ratings scale
- Call the user and have them connect to the WebEx session
- Meetmenow.webex.com
- Explain to the user how to take control of the mouse

Between sessions, the test administrator will:

- Name and save the just-recorded Morae file

- Review the participant's characteristics as captured by the screening survey
- Start the Morae recorder and the upon orienting the participant to WebEx

After the last session each day, the test administrator will:

- Name and save the just-recorded Morae file [Backups will be provided as recordings are saved in the observation room with the remote viewer. Remote viewer saves files as movies.]

3 Connecting to WebEx

>> To start off, we're going to get you connected to my computer through an online meeting tool called WebEx. WebEx will allow you to view and control my desktop, but I will not be able to see yours.

Once the user has connected to WebEx:

>> You are now connected to my local computer through WebEx. Please maximize the WebEx window so that it fills your entire screen. During this session, it is important that I see what parts of the screen that you refer to. When you talk about a specific part of the screen, please remember to point at it with your mouse.

>> In order for me to be able to see your mouse cursor, I need to pass control of the mouse to you. To take control of the mouse, click your mouse. After a moment, you'll be able to move the mouse cursor for both of us. Let's try that now. Take control of the mouse and point to the center of the screen.

4 Introduction

>> Now that we're connected through WebEx, I'll introduce you to our session.

Start time _____

Thank you for agreeing to take part in our research study. During this session, I'll be using this script to ensure that, as much as possible, my instructions to everyone who participates are the same.

Today you will be comparing your experience with a mockup of the new Internet Explorer browser over two fictitious Web sites: Shopon-line.com and Electronicson-line.com.

Because we want to hear what you're thinking, I'm going to ask you to "think out loud" during this session. Please tell me what you're doing and why. Tell me about anything you're not sure you understand and about any problems that you're having. Don't hesitate to tell me whatever is going through your mind as you look at the different screens.

Your comments are very important, so I'll be taking notes as well as recording the session. But rest assured that anything you do and say in this session is confidential and won't be used outside of VeriSign.

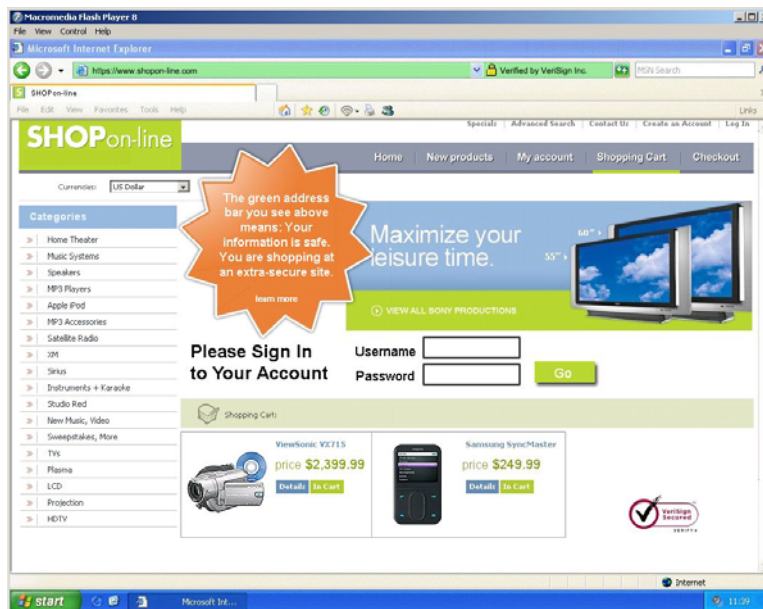
Something else that's really important: This is not a test, and there is no such thing as a wrong answer. Also rest assured we're not here to sell you anything. Instead, we're interested in finding out how new features in Internet Explorer 7 may affect your online shopping experience.

Here's a quick overview of how we'll spend our time together today. I'll start by asking you to imagine yourself in a situation where you are doing some online shopping. Along the way and at the end of the session, I'll ask you some questions about your experiences. The whole session will take about half an hour. At the end of it, you'll receive a \$30 Amazon.com Gift Certificate to thank you for your time and input.

Do you have any questions before we begin? >>*Answer any questions*>>

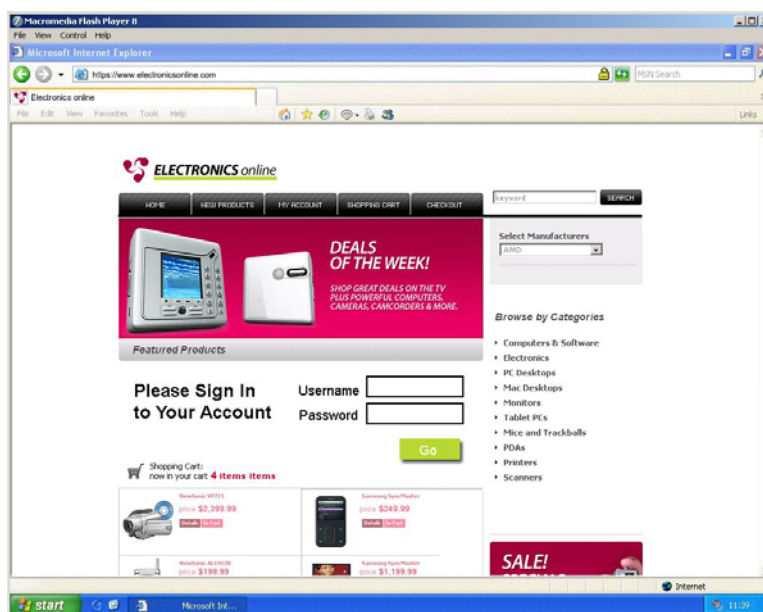
5 Part 1: Introduction to the lock and green bar

Maximize the testing artifact- a flash demo of IE7, with the Extended Validation bar changing between a Web site company name and VeriSign.



>> This is a mockup of the latest version of the Internet Explorer browser: IE7 which has some new security and privacy features.

>> <show the two different Web sites> Today you'll be looking over two fictitious Web sites: Shopon-line.com and Electronicson-line.com.



>> *<indicate with the mouse>* You'll notice, at the top of the browser, in the address bar there's a lock icon- here and here. The lock icon means that both Web sites are secure. But the green bar on the shopon-line.com Web site means that:

>> The organization who owns this site has gone through extra steps to prove they are who they say they are. The leading Internet security providers are working together to agree on exactly what these extra steps will be.

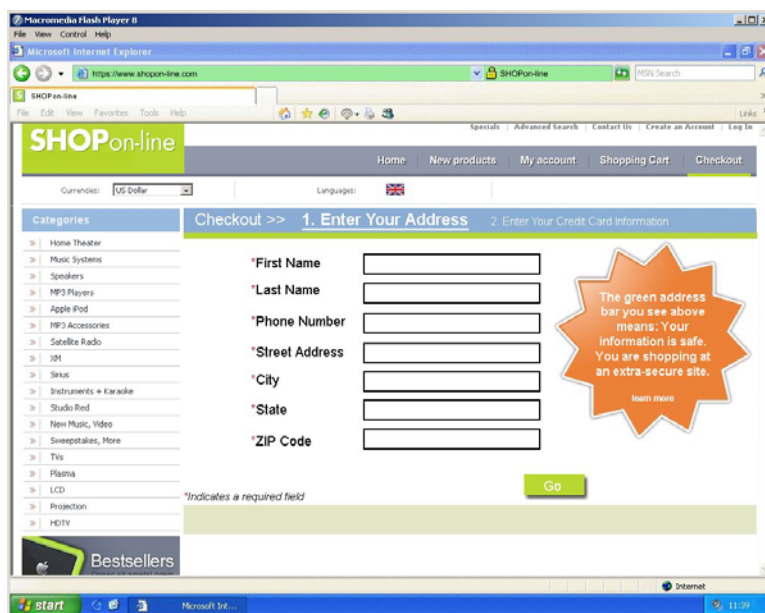
>> We're interested in learning how the lock and colored address bar affect your online shopping experience.

>> *Indicating the Extended Validation bar:* At this time, I'd like to call your attention back to the green bar at the top of the page. What does this area indicate to you?

6 Part 2a: Does the user prefer a green EV Bar (entering address)?

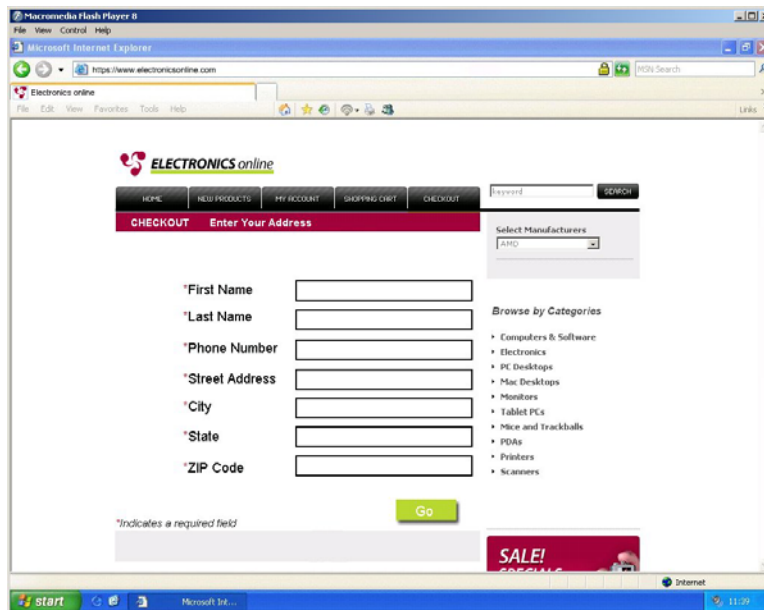
>> For the next part of the session, I'd like you to imagine that you have been doing some online shopping. You have selected a few items and proceeded to the checkout section. Although you will be looking at the same two sites you saw earlier, keep in mind that you've never visited or heard of either of these sites that are now asking that you to provide your name, phone number and address. Please tell me what you would do at this point.

Show the first page, collect impressions



Appendix A. Test Script

Show the second page, collect impressions



>> *Maximize the rating scale.* Now, I would like for you to use this scale to rank how likely you would be to enter your personal information on each of the two screens that you just looked over. Please take a moment to read through it. Also, let me know when you need to switch back and forth between the screen or show and hide the rating scale, and I'll go ahead and do that.

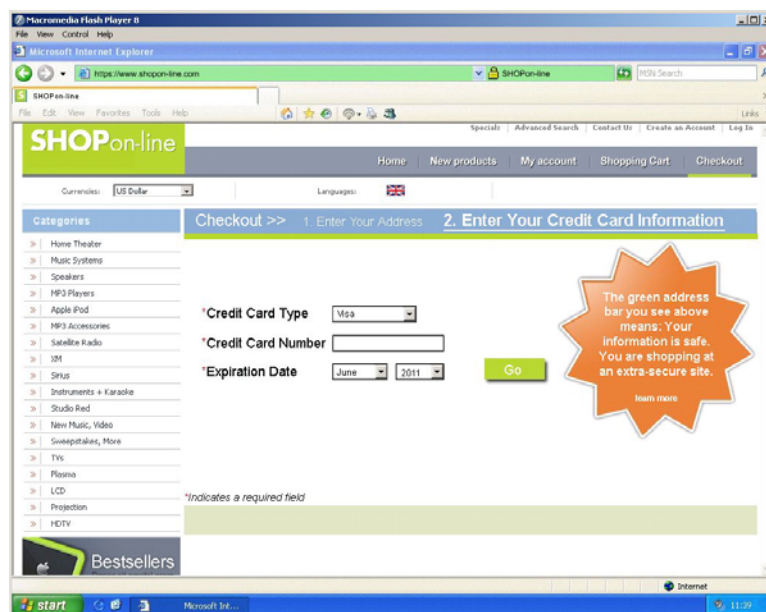
1	2	3	4
Would not enter my information	Less Likely	More likely	Would enter my information
I would not enter my personal information on this page	I would be less likely to enter my personal information on this page	I would probably enter my personal information on this page	I would enter my personal information on this page

>> *Ask why they rated each the way they did*

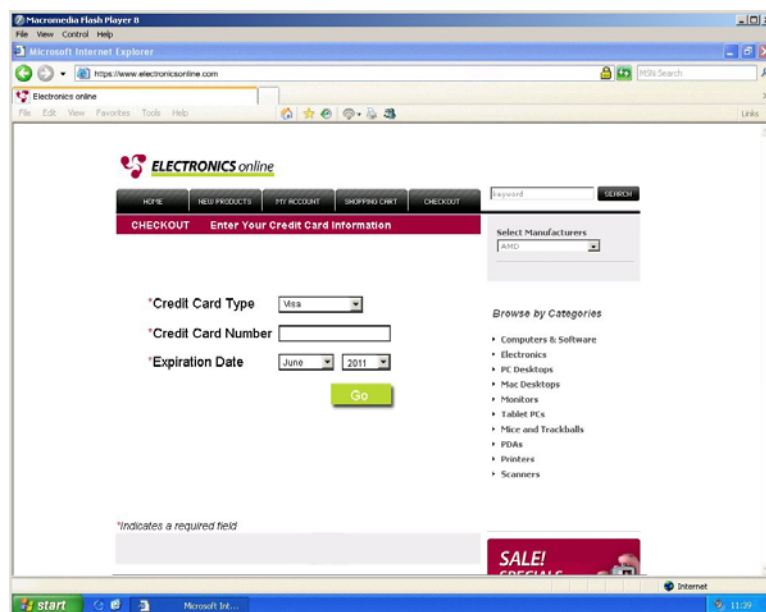
7 Part 2a: Does the user prefer a green EV Bar (entering credit card)?

>> On the next page, the shopping site is asking you to provide your credit card information to pay for your items. When you are ready, please indicate how likely you would be to enter your credit card information.

>> Show the first page, collect impressions



>> Show the second page, collect impressions



>> *Maximize the rating scale.* Now, I would like for you to use this scale to rank how likely you would be to enter your personal information on each of the screens that you just looked over. Please take a moment to read through it. Feel free to let me know when you need to flip back and forth between the screens or hide the rating scale.

1 Would not enter my information	2 Less Likely	3 More likely	4 Would enter my information
I would not enter my personal information on this page	I would be less likely to enter my personal information on this page	I would probably enter my personal information on this page	I would enter my personal information on this page

8 Part 3: Follow up Questions

>> Okay, now I'd like to pause and ask you a few follow up questions.

>> Today we looked at two different sites, Shopon-line.com and Electronics-on-line.com. Which of the two sites would you prefer to do business with? Why?

>> Would you prefer to do business with a merchant who displays the green bar over one who does not?

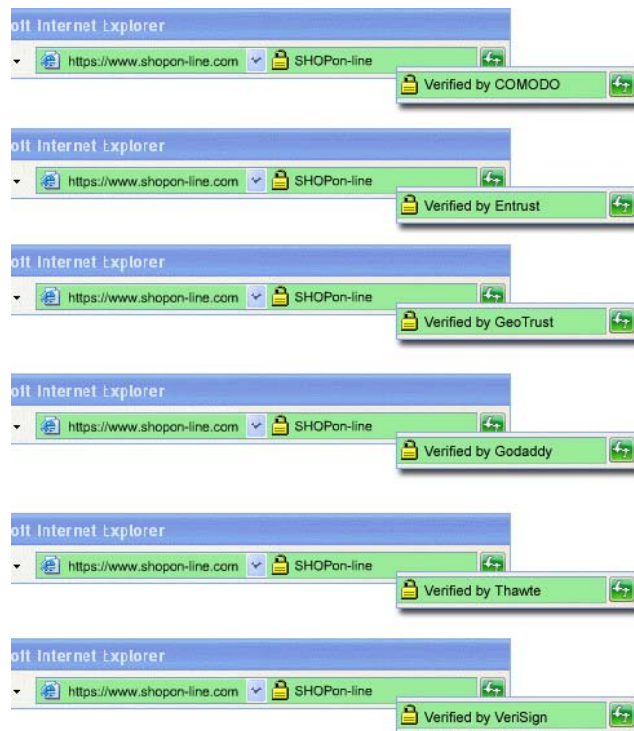
>> If you were shopping and the green bar does not show up, would you be likely to abandon a purchase?

>> *Indicate the EV bar*>> At this point, I'd like to direct your attention to the green bar again. You'll notice that the name in the bar changes from the name of the Web site to another company. What does that say to you? In other words, what is the reason for this second company name appearing here?

>> Okay, now I'm going to show you another image. Imagine that this area is the green bar that you saw earlier. This area *<indicate the appropriate area>* is the company that owns the Web site and the bar switches to show another company name in this area *<indicate the appropriate area>*. Do you recognize any of the names on the right?

[company names are COMODO, Entrust, Geotrust, Godaddy, Thawte and VeriSign]

Appendix A. Test Script



>> Would you proceed on a Web site that shows the green bar regardless of this second name?

>> Would seeing any of these brand names increase your level of confidence when you are shopping on-line? Which?

>> Let's say you were a regular shopper at Shopon-line.com and that one day you return and the address bar is not green. What would you do?

>> When you shop online in the future, will you be likely to notice sites that show the green bar vs. those that do not?

>> How will that affect how you shop online?

>> I think we've got what we need. Thank you again for taking part in this research study. Your input is very valuable to us.

>> To thank you for participating, you will receive a \$30 Amazon.com gift certificate at the email address within a few hours. If you have any problems, feel free to call me back at the number I gave you.