Verified by Visa: Usability Findings and Recommendations for Merchant Websites

March 31, 2004

NN/g
Nielsen Norman Group
# Table of Contents

**Introduction** ................................................................. 3  
  Scope and goals of project ............................................. 3  
  Examples of Inline, Frame, and Pop-Up Format .......... 3  

**Overview of findings and recommendations** ................. 5  

**Discussion of the Different Presentation Formats** ........... 8  

**Discussion of Recommended Guidelines** ......................... 11  
  Designing Frames .......................................................... 11  
  Pre- Messages ............................................................... 16  
  Verified by Visa Logos ............................................... 20  
  Status Indicators ......................................................... 26  
  Miscellaneous .............................................................. 29  

**Evaluation Methodology** .............................................. 30  
  Overview ......................................................................... 30  
  Participants ................................................................. 30
Introduction

SCOPE AND GOALS OF PROJECT

The main goal of this project is to evaluate the usability of the different implementations of Verified by Visa (VBV) on various Merchant sites and establish guidelines for best practices. The scope of this study addresses the following questions:

- What implementation for displaying Activation During Shopping (ADS) and Password screens within a merchant site works best - Inline, Frame, Pop-up, or other? And why?
- Does pre-messaging work in setting up user expectations? If so, what should it say, and where should it go?
- Does it help to have the VBV logo present during checkout? Is this critical to the success of VBV and what value does it add?

Note: The scope of this project does not cover the content or the visual design of the actual VBV (activation during shopping and password) screen.

EXAMPLES OF INLINE, FRAME, AND POP-UP FORMAT

This report addresses three primary implementation formats: Inline, Frame, and Pop-up. The following screenshots are examples of each type of implementation:

**Inline Description**: Mainly a blank white screen, with the Verified by Visa content appearing in the middle of the page.
**Frame Description:** Contains the company logo and may have some graphical treatment in the top area. The Verified by Visa content appears in the middle of the page.

**Pop-up Description:** The Verified by Visa content is contained within a Pop-up Window.
Overview of Findings and Recommendations

SUMMARY OF FINDINGS

The following summarizes the main findings:

- The Frame design is an effective method of displaying the Verified by Visa authentication window. The Frame design provides a consistent look and feel across the site, which preserves the site’s context. Doing so creates an integrated user experience that helps guide people through a complete process. When using this approach, the merchant should minimize the buttons and links within frame that could distract the cardholder or allow them to click to another page. It is important that when this approach is used, that the cardholder should not be presented with any links to pages outside of the check out process.

- The Inline design is also a good method of displaying Verified by Visa authentication window. The main advantage of the Inline implementation is that it’s simple and eliminates the temptation for designers to include anything frivolous that might distract users from the main purpose of the page. The main downside is that it doesn’t provide site context, thus possibly creating a jarring user experience. Presenting people with a completely different looking screen may cause people to wonder if they’ve made a mistake, left the site, or lost the data they’ve entered.

- The Pop-up implementation causes confusion and distrust and should be avoided.

- Pre-messaging helps prepare users for what’s to come, especially since a user may not have encountered Verified by Visa previously during the checkout process.

- Pre-messages should be placed immediately next to the Submit button to create a strong visual association. People are more likely to notice and read the pre-message if they see that it’s related to the action button.

- Pre-messages should be brief and only give information people need. It’s not necessary to reveal the technology behind the interface; most people don’t care.

- It is advantageous to place Verified by Visa logos next to the credit card entry area. The logos add credibility to the website by enhancing feelings of trust and security.
RECOMMENDATIONS

The recommendations in this report are numbered for easy reference. This review lists 16 recommendations. Of course, it would be preferable if all of these recommendations were followed. We realize that this is not always possible due to the constraints of available budget, time, and commitment to other priorities. Therefore, we have divided the recommendations into the following two levels:

**Essential**> We believe these recommendations must be fixed as an absolute minimum for sites to achieve a viable level of usability.

**Important**> These recommendations will contribute substantially to improving the quality of the user experience on the site. However, it would be possible to achieve a reasonably good site even if a few of the important recommendations were not followed.

“**Essential**” recommendations are listed below, and are numbered as they appear numbered in the report, so that you can find the descriptions of the usability problems that led to the recommendation.

### Essential Recommendations

<table>
<thead>
<tr>
<th>Guideline Number</th>
<th>Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use logos, images, and graphical elements judiciously to provide site context.</td>
</tr>
<tr>
<td>3</td>
<td>Keep any messages in the Frame short, concise and related to the purpose of the screen.</td>
</tr>
<tr>
<td>4</td>
<td>Make sure messages come during the appropriate time in the signup process.</td>
</tr>
<tr>
<td>5</td>
<td>Present pre-messaging to help set proper expectations.</td>
</tr>
<tr>
<td>6</td>
<td>Keep messages free from technical jargon.</td>
</tr>
<tr>
<td>7</td>
<td>Keep pre-messages as short and concise as possible.</td>
</tr>
<tr>
<td>13</td>
<td>Provide a simple status indicator that give visual feedback that the system is processing.</td>
</tr>
</tbody>
</table>
“Important” recommendations are listed below, and are numbered as they appear numbered in the report, so that you can find the descriptions of the usability problems that led to the recommendation.

### Important Recommendations

<table>
<thead>
<tr>
<th>Guideline Number</th>
<th>Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Don’t have a horizontal line separating the Frame area from the rest of the page.</td>
</tr>
<tr>
<td>8</td>
<td>Place the pre-message immediately next to the final order button.</td>
</tr>
<tr>
<td>9</td>
<td>Consider using graphical techniques to make the message more noticeable.</td>
</tr>
<tr>
<td>10</td>
<td>Consider placing the Verified by Visa logo next to the credit card entry area and other security related icons.</td>
</tr>
<tr>
<td>11</td>
<td>Make sure that the Verified by Visa logos aren’t overshadowed by other elements on the page.</td>
</tr>
<tr>
<td>12</td>
<td>Have a way for people to get more information about Verified by Visa.</td>
</tr>
<tr>
<td>14</td>
<td>Provide an estimated waiting time.</td>
</tr>
<tr>
<td>15</td>
<td>Make sure the Back button works properly.</td>
</tr>
</tbody>
</table>
Discussion of the Presentation Formats

The Inline Format is simple, but can create a jarring user experience

The main advantage of the Inline presentation is that it is simple and free from potentially distracting clutter. The blank white background creates a clean canvas, thereby keeping the users focused on the message. The main disadvantage however, is that it dumps people onto a completely different looking screen without the proper context. Encountering a screen that looks completely different to the rest of the site can create unnecessary tension that can cause distrust and doubt in Web consumers. To improve the user experience, we recommend that the merchant provide a concise pre-message immediately before check-out (ideally next to the final order button) to prepare users for what is coming (see Section 5, Pre-Messages).

Be wary of using the Pop-up Windows format

Our evaluation supports Visa’s plan to eliminate the use of pop-up windows. Pop-up windows are mostly perceived negatively by users and often result in disastrous usability outcomes. People often associate pop-up windows with advertisement or superfluous content that is unrelated to their immediate task at hand. They are intrusive, and startling. They make users feel that they are being advertised to, rather than informed. People often immediately close pop-ups or even worse struggle with them and lose their place on the website.

Embedding Verified by Visa in HTML-based pages is a better strategy than opening a new window of any size on top of the launching web page’s window. The embedded approach prevents people from accidentally clicking outside the parent browser window and thus burying the new window underneath it. We’ve seen users in other studies make this error over and over again — then they can’t find their way back to the parent window and conclude that they had lost their data. Also, many people don’t see the application window’s icon at the bottom of the screen.

User Quotes:

"I hate pop-ups. They’re annoying and they just get in the way.”

"This [pop-up window] makes it appear more like a solicitation. By coming over the site I’m on, it says it’s a solicitation. I automatically said ‘No Thanks’.”

Several users on the next sample site (see next page) had difficulty closing the pop-up window because they were confronted with a confusing dialog box that warned them about moving away from the site. People didn’t understand the message and automatically clicked cancel each time, prompting the same message to reappear over and over again.

User Quote:

"That’s irritating. I want to get rid of this pop up. It thinks I’m trying to close the page. I can’t get rid of this. Now I’m going to minimize this and now it’s down there…which I’m not happy about.”
Users had difficulty closing the Verified by Visa Pop-up window because they couldn’t understand the message in the dialog box that appeared every time they tried to close it.

A final argument against any pop-ups is that many web browsers, plug-ins, toolbars, and other technologies block pop-ups or otherwise make them less likely to be seen by users who have installed such technologies. Pop-up blockers are getting to be more popular (because of users’ negative experience with pop-ups) and will become a standard component of Internet Explorer — the most commonly used browser.

**The Frame Method preserves context**

Of the three different ways merchants are currently displaying VBV screens (i.e. Inline, Frame, and Pop-up); the Frame implementation is the best way to preserve the user’s context on the website. Having some merchant branding in the top area creates a consistent look and feel across the entire site, fostering a sense of uniformity and cohesiveness.

When pages look similar, people know they’re still on the same site. Pages that look dramatically different are jarring and make people wonder if they’re on the right page or even on the right website. Preserving context offers an integrated experience that eases people through the signup and checkout process, which is critical in minimizing abandonment.

We usually recommend against using traditional frames because of problems such as printing and bookmarking. However, in this case, it is acceptable since most people will not need to print or bookmark Verified by Visa screens — and the benefit of having some branding far outweighs the disadvantages of not having any.
Currently, some merchant sites use frames. With screen resolution at 1024x768, these sites do a good job of making the screen not appear like traditional frames, with several different panels and scrolling areas. However, at 800x600, the panels appear, making the page look slightly more busy than necessary. If possible, consider a way of creating the embedded look without the use of traditional frames for a cleaner and more professional appearance.

When comparing an Inline format with a Framed format a user commented:

“This would appear to be part of the website [referring to the Frame]. The subtle difference is that if it did not have the frame, I might have a minor panic that I was bumped out...It would freak me out that I entered all this information and got bumped out.”

At 800x600 screen resolution, the page looks like a traditional frame, with a panel having its own scrolling area. This should be avoided if possible.
Discussion of Recommended Guidelines

This section discusses the reasoning behind the guidelines and offers examples to support them.

FRAME DESIGN

1. Use logos, images, and graphical elements judiciously to provide site context. <Essential>

In general, use graphics judiciously and only when they convey information people need. Some branding is good to ensure a smooth transition between the Checkout and Verified by Visa screens. The main purpose of the logo is to provide reassurance to customers that they’re on the right path. However, the design of logos should be kept to a minimal. The graphical treatment should have enough detail to preserve the site’s context, but not be so elaborate that they cause distractions or take the focus away from the main body of the page. Leave out any unnecessary elements such as navigational links, text, and icons that might draw the person’s attention away from the information they need to focus on.

Current Design: Currently, the Frame area on the above site contains too many visual distractions that unnecessarily clutter the top banner area of the page.
Suggested Design: Removing unnecessary graphical elements reduce clutter, helping users focus on the important area below.

2. Don’t have a horizontal line separating the Frame area from the rest of the page. <Important>

The horizontal line separates the top area from the rest of the page, causing people’s eyes to be drawn downward; people can easily miss any important messages that are contained in the top frame area.

This separator bar makes the top of this page look like a banner area, which people often associate with advertising and therefore ignore.
3. Keep any messages in the Frame short, concise and related to the purpose of the screen. <Essential>

If messages are used, make sure to leave out anything that sounds like marketing. People are constantly bombarded with marketing messages on the Web and are skeptical of offers that sound too good to be true. While in the checkout process, people are especially focused on the task at hand and tend to filter out anything that doesn’t get them to their final goal. Therefore, if you’re going to have any messages at all, make sure they’re short and to the point.

The merchant website on the following page tries to combine too much information onto one screen resulting in a very long page that requires excessive scrolling. Combining two completely different views on the same page creates information overload. The top frame displays the itinerary summary while the bottom one shows the Verified by Visa information. It’s better to separate them onto different screens so that people can process the information separately in smaller chunks. The instructions are misleading, making it appear as if signing up with Verified by Visa is required. Such a message is jarring especially at this point since people are expecting to complete their transaction.
The above site combines two different views on a single screen which causes information overload.
4. Make sure messages come during the appropriate time in the signup process. <Essential>

Ensure that the instructions match with the interaction flow. Pre-messages need to come right before the Verified by Visa screens are presented. Instructions that are provided out of sequence cause confusion, making people question their understanding of the sign-up process.

People on some sites were puzzled by messaging in the frame because it contained too much technical jargon and appeared in an inappropriate place during the sign-up process. The instructions tell people that their credit card issuer might ask them to sign up for Verified by Visa when they were already enrolled in Verified by Visa. Users kept reading this message over and over again and couldn’t make sense of it. Worse, it distracted them from focusing on the main purpose of the screen, which is completing the Verified by Visa form.

A user was irritated that the instructions came too late in the sign-up process:

"Now it tells me that if I don’t sign up with Verified by Visa, I should sign up now. It tells me I have to go to Verified by Visa, it should tell me before hand... They should have told you upfront, that if you don’t have Verified by Visa, I should sign up first…”

Another user read the message over three times and didn’t fully understand it:

"Argh... They are asking me to do something…”

Another user on the second Verified by Visa sign up screen thought that the instructions were redundant because she already started signing up.

"I do not quite understand it. I just signed up for it. It sounds redundant.”

People on this site didn’t understand what the message meant and how it applied to them. Also, the same instructions came up on different screens, which confused users because it didn’t make sense in the overall flow.
PRE- MESSAGES

5. **Consider pre-messaging to help set proper expectations.** <Essential>

Since Verified by Visa is a new experience for many customers, consider having a concise message immediately before checkout, which will help prepare users of what’s coming. When people are at the end of checkout process they strongly believe that the next screen will confirm their purchase. Seeing something different can be startling. Therefore, having a gentle message that explains what’s next helps create a smoother transition and ease the tension.

User Quote:

“I noticed that...It helps you now what’s going on. It says hold on tight.”

6. **Keep messages free from technical jargon.** <Essential>

Do not expose the technical implementation of the feature. It only causes confusion and most people don’t care. For example, it’s not necessary to tell people that they will be taken to a different site. Rather present the information from a user perspective and explain more of what they see. Try and keep the technology as transparent as possible to users. People get confused when too much technological information is revealed.

Users view the shopping process as one continuous flow. That is, they don’t differentiate between what’s happening behind the scene, what server is doing, or whether they’re technically on a different site. They see it as one continuous process and don’t want to be bothered with what’s happening in the back end.
People glossed over or misinterpreted the pre-message on the following site because it gave too much technical detail that people didn’t care about. For example, rather than simply stating what they’ll see next, the site talks about being taken to a different website.

Most people on this site either ignored the pre-message or misinterpreted it because the text was too dense and small and the message was too technical to understand.

7. Keep pre-messages as short and concise as possible.

Numerous studies support the notion that people scan, rather than read, online. People tend not to read word-by-word on the Web, but rather they scan for information or pick out important words or terms. This is particularly true during the checkout process where people are completely focused on completing their transaction. Therefore, it’s critical to keep messages as short and concise as possible in order to have the best prospect of capturing the user’s attention. People are extremely task focused and tend to gloss over by dense text, missing important information. Reduce the complexity by being concise and to the point. Don’t make people read through lines of small text. It’s better to be brief and direct.

Below is a suggested phrase:

Note: The next screen you see may be payment card verification through Verified by Visa.
Current: The long dense text makes it difficult for people to read. Therefore they ignore it and go for the more prominent and desired area, the submit button.

Suggested: This version is more concise, making it easier for people to quickly scan and understand the information.
8. **Place the pre-message immediately next to the final order button.** *<Important>*

The message works best when placed immediately next to the final order button. Having the message and the button in close proximity to each other helps create a strong visual association and ties the message together with the action. When these two elements are visually close, people are more likely to notice the message and think that it’s important to read it before moving on to the next step.

9. **Consider using graphical techniques to make the message more noticeable.** *<Important>*

Consider graphical treatments such as using large text, bolding, and color to help draw attention to the message. People are very task focused, especially at the end of the checkout process and even the most clearly written message can easily be overlooked. The checkout button is a very strong visual cue that indicates the finish line and people are extremely eager to click on it to complete their task. Also, creating a visual grouping such as drawing a box around the button and message can also help tie these two elements together.

**Current design:** The above site doesn’t have any pre-messages.

**Suggested Design:** The blue box groups the pre-message and *Order* button together, drawing people’s attention to both elements.
VERIFIED BY VISA LOGOS

10. Consider placing the Verified by Visa logo next to the payment card entry area and other security related icons. <Important>

Having the Verified by Visa logo next to the payment card entry fields serves as a way to reassure customers that the company is concerned about security issues, which is comforting to users.

While most people didn’t click on the logo to sign up or learn more, many people felt that it boosted the site’s credibility and furthered people’s trust in the company. Also, the logo shows that site is a participating in Verified by Visa, which is especially helpful for those who are specifically looking for it, or have already signed up.

User Quotes:

"It’s for security–That your information is not going out into cyberspace.”

"I noticed them and it registered subconsciously. It’s surely a secure website.”

"I noticed the MasterCard and then Visa. My eyes went to the red first. I’ve seen it before. It tells me that it’s a secure site.”

The above site does a good job of displaying the payment card logos in the appropriate place, next to the payment method entry fields. Although this design works, the visual association would be stronger if the logos were placed slightly closer to the fields.
11. Make sure that the Verified by Visa logos aren’t overshadowed by other elements on the page.

People are more likely to notice logos if they are free from other visual clutter. For example, two sites below both have logos next to the payment card fields. However, users are more likely to notice the logos on the second site because it stands alone, free from other competing elements. The first site, however, has several different icons grouped together with dense red text on top and bottom. Presentations like this overwhelm users and reduce the likelihood that any of the information will be noticed or read.

The close placement of the Verified by Visa learn more logo with the other icons and heavy red copy on this site creates a busy screen.
This site does a good job of placing the Verified by Visa learn more logo on the left-side panel so that it’s unobtrusive yet prominent enough to be noticeable. The smaller Verified by Visa activate now logo in the bottom however, while placed in a relevant place, is too small to read.
The above site places the Verified by Visa activate now logo in the right area, but the logo needs to be larger in order to optimize readability.

12. **Have a way for people to get more information about Verified by Visa.** <Important>

Make sure that there’s any easy way for people to learn more about Verified by Visa by providing a link to more information. Having the logo alone doesn’t give people enough information or a way to sign up.

Logos that had “Learn More” links were viewed more favorably that those that didn’t have any links at all.

User Quotes:

“Learn More–good choice of words. There’s something about it. It sounds intelligent but not condescending.”
This site properly places the Verified by Visa logo next to other security related icons. However, there isn’t an easy way to learn more about the program.

Similarly, this site doesn’t provide a link to Verified by Visa “Learn More”. Also, the logos at the bottom of this screen are too close together which makes the Verified by Visa logo blur in the user’s visual field. Inserting a small space between the logos would help without adding clutter or confusion.
The Learn More link on this site gives people an easy way to get more information.
This site goes the extra step of explaining what Verified by Visa is and how it relates to them. While not necessary for sites that don’t have much space on their pages, this type of explanation can be helpful for sites that have an uncluttered screen available that doesn’t become cluttered by adding this information.

**STATUS INDICATORS**

13. **Provide a simple status indicator that give visual feedback that the system is processing.** *Essential*

Let people know that the system is running by providing a processing indicator that has a simple movement. Something like dots from left to right is enough to let people know that something is working in the background. Static processing screens confuse users because it’s difficult to tell whether the system is working or frozen. People tend to be more impatient when there isn’t any visual feedback and often click Back, Cancel, Refresh or close the browser window, which usually disrupts their purchase.
14. Provide an estimated waiting time. <Important>

People are more likely to patiently wait if they have an expected waiting time. Even if you don’t know an exact time, it’s still helpful to give people a general sense of how long they should wait. For example, people want to know if it is going to be a few seconds, or minutes. Also, it’s helpful to give a gentle warning if any unintentional action could disrupt the processing of their order. Consider saying something like:

*Processing*[ moving dots]*

*It may take a few seconds. Please do not click the Refresh or Back button or this transaction may be interrupted or terminated.*

This site (above) does a good job of keeping their design simple. However, it would be even better to give feedback on the expected waiting time and any other waiting instructions.

*Completing Order*

*Please stand by - it may take a few moments for your order to be submitted. Thank you for your patience.*

*Please DO NOT close this window.*

*If this window does not reload after 10 seconds, please click here to continue.*

This site (above) could be improved with a simple moving element to show that the system is still working and not frozen.
This site (above) needs a visual feedback mechanism to show that the system is still functioning.

This site (above) gives away too much detail about where the system is connecting. This is especially confusing for people who don’t make the distinction between their bank and credit card company.

This site (above) could be improved by having an indicator. Also, the message is too wordy, making it difficult for people to quickly scan and understand it. Note, however, that it is good to provide an estimated waiting time (30 seconds).
**MISCELLANEOUS**

15. Make sure the *Back* button works properly.

*Important*

The *Back* button is the lifeline of Web users and the second-most used navigation feature (after following hypertext links). Users depend on the back button to return them to familiar territory. If possible, make the back button work the way people expect.

The Back button on many of the websites we evaluated didn’t work properly. Once on the Verified by Visa screen, clicking the back button produced unexpected results. For many sites, clicking the back button brings up an unexpected and confusing dialog box. Then once the dialog box is closed, an expired warning page appears. Finally clicking the Back button many more times brings back the shopping cart where people will have to log back in. Clicking *Back* some sites didn’t do anything at all.

Many sites didn’t have back buttons that worked properly. Clicking *Back* opens up a confusing dialog box. Then an expired message appears once the dialog box is closed.
Evaluation Methodology

OVERVIEW
The analysis for this evaluation consisted of three different parts:

Part 1: Design Review
We conducted an independent usability visual inspection of 20 different merchant websites to evaluate the ways Verified by Visa was implemented on each of them.

Part 2: User Testing
We conducted user tests using the thinking aloud protocol. We gave participants tasks to perform, mainly purchasing products online. The facilitator sat next to the user and observed, listened, and took notes as the participant attempted tasks on selected websites. Participants were encouraged to talk about their rationales, strategies and questions as they performed the tasks.

Part 3: Creating and Testing Paper Prototypes
The data obtained from user testing in Part 2 was used to inform the third part of our study. Paper mock-ups were created to fine-tune new ideas, assumptions, and screen flow.

PARTICIPANTS
A total of 12 people participated in this study. All of the participants were Internet users, ranging from novice to experience. We screened out any participants who were "technical experts,” such as IT personnel, programmers, or Web or software designers, since they have expert knowledge in using the Web.

The main requirements were:

- They must have purchased products online using a credit card.
- Must have at least 1 year experience with using the Web.
- For the online test, participants must have Visa cards and be willing to use them to purchase products online.

There were 4 male and 8 female participants. The table below shows participants by age group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>50-60</th>
<th>Over 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Participants</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

The following is a partial list of participants’ occupations:

- Travel Agent
- Office Manager
- Administrative Assistant
- Facilities Manager
- Banker
- Systems Analyst
- Student