

A Double Edged Sword

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Architecturally speaking, frames are one of the most intriguing HTML extensions around. Unfortunately, in the wrong hands, they're also one of the most dangerous.

Frames provide Web architects and designers with the ability to define one or more independently scrollable "panes" within a single browser window. Hypertextual links within one pane may control the content displayed in other panes within that same window. Static banners and scrollable navigation bars can be used to provide context and consistency as users navigate a Web site. In Netscape's words, "(frames) allow designers to display onscreen information in more useful and innovative ways."

While I agree with this in principle, I contend that in practice it is very challenging to design user-friendly Web sites using frames. Previous experience with hundreds of existing un-framed Web sites have convinced me that many designers already have enough trouble organizing information on a single pane. By providing an additional layer of complexity, the frames extensions are simply giving these designers more rope with which to hang themselves. And based on the propensity on the part of many designers and clients alike for integrating every new feature as soon as it comes out without really thinking about whether it will improve usability, I expect frames to be popping up all over the place in the next several months.

Now I'm not advocating a frameless society, but I do think that many designers who are considering framing their Web site ***shouldn't***, and that those who go ahead anyway should be fully aware of the potential problems as well as the opportunities.

Before we start looking at some of the advanced architectural tangles that designers get themselves into when working with frames, there are a number of basic problems that need addressing.

Speed

Right off the bat, a Web page with multiple panes will take a hit on loading speed. Since each pane is a separate file with its own URL, loading each pane requires a separate client-server interaction. In other words, the user spends a lot of time watching "host contacted" messages fly by at the bottom of the screen. Try loading the [Netscape](#) home page with and without frames turned on and you'll see what I mean. To turn frames on, select the "show frames" button on the navigation bar at page bottom. The default for the Netscape site is "frames off." I wonder why? Oh, by the way, unless you're using Netscape 2.0, chances are you won't be able to see frames in action...but read on.

Design for a Multi-Client Environment

As if this issue didn't frustrate us enough already, design for the multi-platform, multi-client environment of the Web becomes even more difficult with frames. The most significant problem stems from the fact that most browsers don't support frames. There are a number of solutions:

- Design a Netscape 2.0 only site and let the information technology underclass fend for themselves. Seriously, if you know all of your users have frames-capable browsers, this solution works fine, but how often is that really the case?
- Create two Web sites, one with frames (and other extensions) and one without and give the user the option of selecting either. This may work fine for users but is a serious headache for designers, maintainers, and the clients who are footing the bill.
- Design a site that works well without frames and then add frames to provide an additional means of viewing marketing content (e.g. banners) and navigational elements. For people using frames-capable browsers, this approach results in the duplication of information within the main content pane and the frame-based panes. This redundancy adds to clutter and confusion. Wasn't this what we were trying to reduce in the first place?
- Design a site that works well without frames and then don't add frames. In most cases this is the best and certainly least painful solution.

Browser Functionality

One of my favorite buttons on my Web browser is the Back button. Frames renders this button practically useless. As Netscape explains,

"the Back button lets you review pages that you've just visited by recalling the URL of an entire screen or frameset. It doesn't, however, call up the URL of the last frame you viewed. So, if you press the Back button when you simply want to revisit a previously chosen frame, you'll find yourself further back than you meant to be."

No kidding. This provides yet another way to get lost and frustrated very quickly. To their credit, Netscape has provided a "back in frame" option that can be selected by clicking the right mouse button on the appropriate pane. However, I happen to think that expecting people to discover and remember this feature involves placing too much of a burden on the user.

Bookmarking, another of my favorite browser features, has been impacted in a seriously negative way by frames. The easiest way to bookmark pages within a framed site is to turn off frames, find the page in question, and then bookmark it. Again, frames is causing more problems than it's solving.

Finally, despite the contention of some that we're moving towards a paperless society, I suspect that I'm not the only one who uses the Print button on a regular basis. Well, Print Page has now become Print Frame, so if you want to replicate the look and feel of an entire page, you better be ready to print each pane on a separate sheet of paper and then get out the scissors and tape.

A Couple of Case Studies

Having covered some of the basic issues involved in designing frames-based Web sites, let's explore some more problems by taking a look at a couple of sites.

[Internet Shopping Network](#)

The Internet Shopping Network provides an example of a fairly standard implementation of frames. The static banner at the top of the page serves as a

consistent reminder of whose Web site you are on. The scrollable navigation bar running down the left side of the page serves as a directory. Selecting links within the navigation bar causes the appropriate content to be displayed within the main content pane.

The biggest trap ISN falls into is that of providing navigation elements in both the navigation and content panes. Upon first glance, I would expect all the navigation options to be available via the "directory." However, there are a number of important options hidden at the bottom of the content pane including ISN Home Page and Search.

Inconsistency between the navigation and content panes further increases the potential for confusion. For example, the navigation pane displays a two-layer hierarchy of options. I can select the category "specialty stores" or any one of seven stores within that category. Upon selecting the category, I am presented with six stores to choose from (represented as both graphical icons and textual links) in the content pane. Upon close examination, I realize that one store is missing from the content pane. By this point, I'm really not sure which pane to trust and I'm overwhelmed by the apparent size and complexity of the site. Faced with this confusion, I leave the Web site. I'm sure I'm not the only one.

Infoseek

Infoseek, a popular Internet search tool, uses frames for its query interface. While the idea of using frames to improve query interface layout is sound, this specific implementation is not. Infoseek divides the page into a bottom of page advertising banner, a left side of page scrollable navigation bar that provides several main subject categories to choose from, and a main content pane that includes the query interface. What amazes me about this implementation, is that if I input a query or select a category from the navigation menu, the entire page (all 3 panes) is redrawn with new content. So much for providing consistency and context. In my opinion, the greatest benefit in using frames for query interface design lies in separating the query interface from the browsing and search results interfaces. A static query pane at the top of the page with a

scrollable pane for browsing through categories or viewing search results would go a long way to improving the usability of this Web site. Unfortunately, Infoseek incurs all the problems related to using frames without really leveraging any of the benefits.

Framing a Conclusion

Things used to be so much simpler for information architects back when Gophers roamed the Internet and textual hierarchies were the only way to organize information. Then came the Web, bringing with it a jumble of hypertext and hypermedia links. Now we're headed into a world full of enabling technologies such as Frames and Java and VRML. The tools and technologies for organizing information on the Internet are becoming more numerous and powerful all the time. Unfortunately, the mental capacities of site architects and users are not improving at the same clip. Increasingly, the usability of our information spaces is limited not by the technologies of the day, but by the capacity of the human brain. Not that this will stop many of our fellow designers and architects from continuing to design on the bleeding edge of technology. I shudder to think what some of these people are going to do with 3 dimensions.