

Challenges of Developing a Usable Browser Based Product Compiled by:

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Reduced spending, increased competition, nontraditional work environments and ongoing technological advances impose new pressures to adapt software offerings accordingly. Forward-thinking developers are increasingly moving from traditional Windows-based offerings to browser-based interfaces to keep pace. Browser based applications can result in a highly scalable solution that dramatically reduces deployment costs for your users and provides a consistent, easy to use interface for even the most novice users. But this solution is not just a simple change to the existing user interface. It can be much harder to develop than a traditional client/server application. From a marketing standpoint this customized appearance is a good thing, and helps to differentiate the application from competitors and even allows companies to build a brand around the look and feel of their product or product family. From the engineering and product management view, this requires new skills-information and visual design-which are not traditionally found in a development team.

Some of the challenges that come by prominently are:

- **Scalability and Time Factor :**

Thin-client application is often on a four to six month timeline, but it is expected to scale to thousands of users immediately.

- **To Provide for Power Users :**

To force power/expert users, who have become accustomed to the flexibility of modeless windows, drag and drop, and other traditional GUI features might be met with a lot of resistance. The browser, being a SDI (single document interface) implementation, is not well suited for applications where multiple views, direct user manipulation, or multiple windows are required.

- **Higher User Expectations :**

The possibility of deploying the application to a much wider base of users including our business partners, employees, and customers invariably changes the level of expectations that must be met leading to immense usability challenges that must be overcome. Users approach the application with a "browser mentality" that says that the software should be instantly usable.

- **Usability Challenges :**

Gone are the days when you can test the application to a few friendly users, get some feedback, and then make adjustments for both usability and performance. The inherent nature of web-based

applications is that they are immediately available to everyone and normally installed without any training. This leads to skyrocketed support desk calls and user frustration.

- **Good User Interface Design and an Effective Usability Testing Process :**

success. But as information is not available at a detailed level about our users and how they work, it becomes nearly impossible to develop effective user profiles to tailor our thin-client interfaces for the users' specific needs and interaction requirements.

- **Interaction Challenges :**

A number of factors including visual interaction, navigational model, and existing client desktop platforms. With an HTML-based interface, the standard rich graphical controls such as tabs, trees, and list views are much more difficult to implement effectively. In addition, direct user manipulation techniques, such as drag and drop, are nearly impossible to implement.

- **Navigational Models :**

Navigation models are very different for web-based applications as compared to traditional client/server GUIs because of the limited scope of the typical navigation controls available and the hierarchical nature of most browser-based solutions. Normal methods of flattening out navigation, such as multiple modeless windows, also pose challenges, as most users do not like having windows launched from their existing browser window.

- **Maintaining a Consistent Look and Feel :**

One of the great advantages of a thin-client solution is the ability to inexpensively deploy the software to a much larger user base. Novice users often learn in a cognitive mode with little to no formal training. This type of learning relies on past experience and behavioral consistency to be effective. Software that has an inconsistent look and feel often results in significant support costs and rejection by the users to which it was intended.

- **Providing for a Unified Workspace**

The browser is not very friendly to the concept of applications. In a browser, we don't select from a 'Start' menu to launch another thin-client solution. Instead, we simply click on a link and the content is displayed. Since all of the application content is only one click away, your design must provide a unified workspace where content, rather than the traditional menu structure, is the main navigation method.

- **Developmental Challenges :**

The guidelines need to address implementations with both rich GUI interfaces

and more constrained web-based interfaces. Collecting and sharing this design knowledge could be accomplished via a web-based knowledge repository that allows for easy update, access, and dissemination of the design patterns developed within the organization.

- **Technical Challenges :**

You must get a thin-client solution to perform both fast and reliably across a variety of network firewalls, gateways, and servers.

But all challenges provide scope for improvisation and enhancement. The result is that challenges require resources to come from outside the core development group, and possibly even outside the organization, and in many instances the latter makes the most business sense.