

# Usability Interface



The Newsletter of the STC Usability SIG

April 2004

Volume 10, Issue 3



## Meet Ben Shneiderman, Opening Session Speaker at STC Conference

STC Press Office

**H**ow would Leonardo da Vinci use a laptop? What kinds of applications would he design? Ben Shneiderman, who will address conference attendees during the opening session, ponders these questions and others in *Leonardo's Laptop: Human Needs and the New Computing Technologies* (MIT Press, 2002). Praised in a United Press International review of *Leonardo's Laptop* for his “insightful views and forward thinking on the subject of computers,” Shneiderman urges designers of computer hardware and software to focus on human (as opposed to product) capabilities. “The new computing must be innovative,” Shneiderman writes, “and it must focus on raising user satisfaction, broadening participation, and supporting meaningful accomplishment.”

A professor of computer science at the University of Maryland at College Park (UM), Shneiderman is also the founding director of UM's Human-Computer Interaction Laboratory, which conducts research on the theory and design of interactive systems. He is a fellow of the American Association for the Advancement of Science and of the Association for Computing Machinery (ACM). In 2001, he received the ACM CHI (Computer-Human Interaction) Lifetime Achievement Award. He has written or edited a dozen books and published more than 200 technical papers and book chapters. His works include *Designing the User Interface: Strategies for Effective Human-Computer Interaction* (Addison Wesley Longman, 3rd ed., 1998).

Leonardo's Laptop has been one of the most talked-about books of the past couple of years. Take this opportunity to hear the author in person! You can meet Ben Shneiderman at the opening session on Monday, May 10, from 8 to 9:30 a.m. See the October 2003 issue of Usability Interface to read a review of *Leonardo's Laptop*.

## Top 10 Decisions That Reduce Usability

Compiled by David Dick

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Special thanks to Franck Ferront, Michael Granat, Howard Kiewe, Lyman Casey, Daniel Szuc, Sherri B, Chauncey Wilson and Helen Johnstone for their suggestions whose comments were considered for this list.

## Contribute to Usability Interface

### Have You Read A Good Book Lately?

Are you reading an interesting book about designing forms, prototyping, designing Web sites or software design? If you are, then *Usability Interface* would like to publish your book review. Send your book review idea to David Dick at [david.dick@swift.com](mailto:david.dick@swift.com).

### In Our Next Issue

*Usability Interface* is accepting original articles and case studies, anecdotes and cartoons for the summer 2004 issue: your comments and observations about the 51<sup>st</sup> STC Conference. The deadline for submitting articles is 30 June. Send your articles to [david.dick@swift.com](mailto:david.dick@swift.com).

### Visit Our Web Site

Information about upcoming conferences and seminars is published on our Web site at [www.stcsig.org/usability/resources/conferences.html](http://www.stcsig.org/usability/resources/conferences.html).

## Get Involved!

### Bring a Friend to a SIG Meeting

The next time you attend your chapter's Usability SIG meeting, consider bringing a guest. Introducing a friend or co-worker is one way to encourage membership growth. When your SIG grows, it can offer more and better services, including seminars, workshops, Web sites and newsletters.

### Telephone Seminars

Telephone seminars offer a low-cost way to learn new skills. A variety of seminars about information design and usability presented by renowned presenters are available at <http://www.stc.org/seminar> for the calendar. And don't forget to invite your friends.

#### Famous Quotations

"Hand-held computers are best for calendars, phone numbers, and to-do lists. Keep taking meeting notes in the spiral notebook."

*Fear No Yellow Stickies* by Richard A. Moran



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#### Usability Interface Online

[www.stcsig.org/usability/newsletter](http://www.stcsig.org/usability/newsletter)

#### SIG e-mail list

The SIG e-mail list is open to all members. To join, send an e-mail to [stcusesig\\_l-request@lists.stc.org](mailto:stcusesig_l-request@lists.stc.org). In the body of the mail message, type "subscribe stcusesig\_l"

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## Editorial: Is It Time to Upgrade?

By David Dick, Editor

How many times has a vendor's help desk operator told you that the solution to a problem is either an upgrade or a patch? Those of us in the IT industry are familiar with this reply because that's the advice our own helpdesk operators tell our customers. If corporate profits depend on improving product design, and selling upgrades, there is no profit in supporting old software and creating patches. The profit is in selling new and improved products.

An article in the *Washington Post*, "Microsoft Tears Down the Old to Sell the New," describes the rationale to discontinue support for older versions of Microsoft software to encourage customers to purchase the newest version.

Some questions to consider before buying the upgrade:

- How much does the upgrade cost? What is your budget and how much are you willing to spend?
- Does the upgrade have features and functions that you want and need?
- Do the features and functions solve chronic problems that you have had using the product in the past?
- Is the upgrade compatible with the operating system of your PC? If not, you may need to upgrade your operating system.
- What system requirements does the upgrade require of your PC? If not, you may need to upgrade components or buy a new PC. Are you willing to buy a new PC?
- Can you get the same functions and features from shareware or freeware?

All things considered, upgrading software, hardware or both will not be a small investment. Many vendors offer PCs with a suite of defacto standard software and operating system factory-installed, at a fraction of the price of buying it separately.

Consider that prices for software and hardware have never been cheaper. If you are willing to wait six months, a better product will be available at almost the same price. But that's the rule for all products on the market nowadays.

If you are willing to keep what you have, you can use the money that you would have spent on the upgrade to buy the new dining room table that you saw in your favorite furniture shop. It's all what you value.

### Reference

"Microsoft Tears Down the Old to Sell the New"  
[www.washingtonpost.com/wp-dyn/articles/A61510-2003Oct21.html](http://www.washingtonpost.com/wp-dyn/articles/A61510-2003Oct21.html).

## Pulse of the SIG Communities of Practice: Dealing with the Changes in the Technical Communication Field

By Karen Bachmann, SIG Manager

As I write this, the annual conference in Baltimore ([www.stc.org/conferences.asp](http://www.stc.org/conferences.asp)) is only a few weeks away. I hope many of you are planning to attend and to participate in the many quality offerings for usability advocates, from Ben Shneiderman as the opening keynote speaker to many excellent sessions in the Usability and Information Design stem to several valuable workshops on usability topics.

The Usability SIG business meeting on Monday, May 10, at 12:30 PM, provides a great chance for members and volunteers from around the world to meet in person and share ideas about how to improve the SIG for all members.

One of the most significant events at this year's conference will be leadership day on Sunday. The board will be reporting on the Society transformation efforts that began in Dallas last year. Like so many professional organizations, STC has been challenged by the changing economy and the evolving nature of our work and career development. These challenges have required Society leaders to look carefully into how the STC should change to better serve a diverse and global membership. The transformation committee understands that changes to the Society to adapt to different member needs must build on our existing strengths. The number and variety of SIGs and the significant number of STC members who are also SIG members have focused the transformation committee on defining *communities of practice* and ways to best support them.

STC recognizes a trend for members to identify less with their geographical communities and more with others sharing common career characteristics, such as the industry they work in, the nature of the deliverables they produce, and of course, their career specializations such as usability. While the value of local interaction has not lessened, the nature of how STC communities are defined at all levels will be changing to reflect what members need most from their Society.

While the transformation committee has been hard at work researching the issues, understanding the needs of a diverse membership, and discovering possible solutions, much still needs to be done.

*Continued on page 4.*

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## **Pulse of the SIG**

*Continued from page 3.*

The conference and leadership day on Sunday will be a time to learn not only about the committee's progress, but also to learn how to get involved with the continuing efforts in the coming year.

Consider making Leadership Day part of your conference plans. All members are welcome, as attendance is not restricted to those who have a "title" such as SIG manager or chapter president.

Your leaders will be discussing how the Usability SIG can better grow into a true community of practice at the Monday business meeting. Topics to be discussed include examining our mission statement, benefits of membership, leadership development, and recognition programs. In some ways, the SIG is already a strong community for usability advocates and practitioners within STC, but room for improvement and strengthening the organization exists. The meeting takes place in Room 345 of the Baltimore Convention Center.

Please join your usability community as we look for ways to grow our own community and discuss how we can support the Society's transformation.

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## ***Top 10 Decisions That Reduce Usability***

*Compiled by David Dick*

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# Designing Online Help for Pocket PCs

By Prashant Natarajan

Advances in technology in the last ten years have created an emerging category of portable online computers (Pocket PCs or PPCs) that offer a wide range of product features comparable to Personal Computers (PCs). Improvements in PPC hardware specifications and the growing numbers of compatible software applications are resulting in an increased (and multi-faceted) user base. Increasing technical capabilities, advanced product features, and a diversified user base are creating new challenges to design online Help systems that can satisfy user needs and requirements effectively.

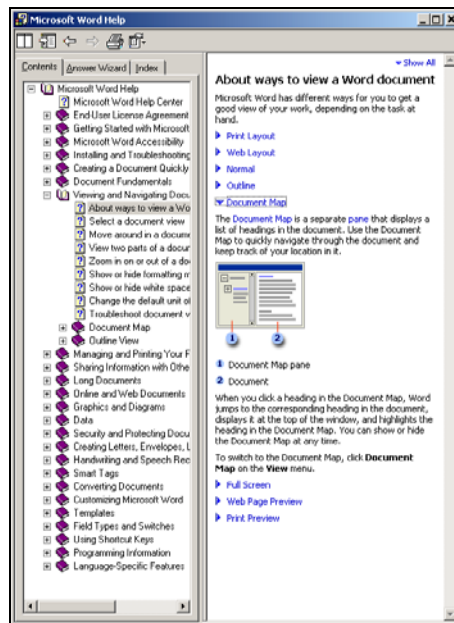
Online Help, an integral component of software products, is probably the most useful user assistance system. End-users rely on online Help to find conceptual (“What is it”), procedural (“How to”) or reference (“Where do I go from here”) information for software or hardware features. This article examines the current state and design of online Help systems in PCs and PPCs.

While designing online Help for PPCs, information developers are forced to deal with several technical considerations and usage patterns. Some technical considerations include the limited screen area, low resolution, limited storage space, and primitive online Help authoring tools. In addition to these issues, information developers must also design online Help systems for a diverse population of users who are familiar with online Help as it appears on PCs today. An analysis of the similarities and differences between online Help in PCs and PPCs will allow information developers to effectively design PPC online Help based on task analysis, audience analysis, context of use, and usability.

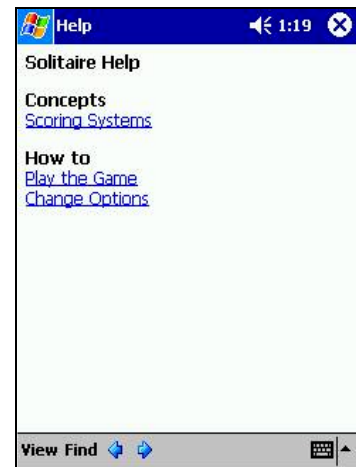
For the sake of consistency, this article uses the term PPC to refer to Pocket PCs that use Microsoft’s Windows CE operating system. The term PC refers to desktop or notebook computers that use other versions of the Windows operating system as Windows 98, Windows 2000, and Windows XP. Computers that use Palm OS are not included in the scope of this article.

## Accessing Online Help

Software applications designed for PCs usually contain both general (non-context-sensitive) and context-sensitive online Help systems. General online Help systems consist of a single compiled online Help file, which contains a table of contents and an index, and accessible from the Help menu in a software program (Figure 1.A).



A. General Online Help in PCs



B. Context-sensitive Help in PPCs

Figure 1 – General and Context-Sensitive Online Help

In PPCs, there is no general online Help. When clicked, the Help menu displays a context-sensitive Help window and the information in this window always relates to the active screen that the user is working on (Figure 1.B). Topics cannot be called for a specific option or field in a form in PPCs, as they can in PCs. Table 1 shows a comparison of online Help features that are currently available in PPCs and PCs.

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## Designing Online Help for Pocket PCs

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**Table 1** - Comparison of online Help features

Feature	PCs	PPCs
Table of Contents	- Multi-level ToC (hierarchical) - Graphical icons represent different levels in the ToC.	- Single-level ToC (linear) - Set of simple hyperlinks, no icons or graphics.
Index	Two-level index	Not supported
Search	Advanced “find” functionality including full text search supported	- Simple “Find” functionality - No full text search
Hyperlinks	Supports hyperlinks, jumps, and expanding hotspots.	Simple hyperlinks without DHTML capabilities.
Graphics	Fully supported	Limited support
See and See Also links	Fully Supported	Not supported
Pop-up windows	Fully Supported	Not supported

## Screen Size and PPC Online Help

Information developers of online Help for PPCs must be able to create usable and user-friendly online Help while simultaneously overcoming various limitations caused by the limited screen size and associated technical drawbacks. The limitations imposed by the PPC screen size include:

- ❑ **Resolution** – The difference in screen sizes in PCs and PPCs has a significant impact on the resolution. A typical PC screen size (diagonal) ranges from 14 to 21 inches while a PPC screen measures 3.7 inches. The available screen resolution in the PPC drops to 240 x 320 pixels from the standard 1024 x 768 pixels in the PC (Hayhoe 3).
- ❑ **Scrolling** – Due to the smaller screen size compared to PCs, PPCs require more scrolling for the same amount of text. Hayhoe states, “[Jones and others] found that reading text from Web pages on a screen with 640 x 480 resolution reduced user effectiveness by 50% compared to reading from displays with higher resolution because of the increased amount of scrolling necessary” (4). Online Help must be designed so that information is immediately available on user request. Fatigue caused by the limited screen area and an ineffective online Help system can affect user performance and satisfaction.

- ❑ **Graphics** – Although PPCs allow the use of graphics, the limited PPC screen area controls the number and size of graphics that can be viewed at a given time on the screen. Due to this limitation, the use of screenshots, charts, and pictures in PPC online Help should be kept to the bare minimum.

## Design Challenges

The range of features offered by PPCs is limited compared to PCs. Information developers cannot apply the same principles for developing online Help in PPCs and PCs because of technical limitations and hardware considerations. Design factors that influence online Help design in PPCs include topic size, navigation and orientation, arrangement and formatting, searching patterns, online reading behavior, and context of use.

## Topic Size

Design limitations restrict the number of words in a PPC online Help topic from 50 to 75. The principles of visual chunking are limited not by the content but rather by the topic’s word count. The reduction in the topic size also places severe limitations on the amount of conceptual, procedural, and reference information on the display in a PPC screen.

## Navigation and Orientation

For an online Help system to be usable and effective, information developers must use orientation and navigation elements to ease the task of finding online information. Navigation aids improve document usability and user performance. Orientation aids provide a constant frame of reference within the online Help system and allow the reader to find information, process it, and return to the task at hand.

Navigation elements include table of contents, index, full-text search, hyperlinks, and cross-references. Orientation elements include headings, books and levels in the table of contents, levels in the index, and Help topic and word-level formatting.

The table of contents in a PPC online Help system consists of a set of links arranged in a single-level list. Other online Help elements common in PC online help are absent on PPCs, such as pop-ups, See and See Also links, and indexes. Navigation functions in PPCs are limited to: View, Back, Forward, and Find.

*Continued on page 7.*

## Arrangement and Formatting

Arrangement and formatting options in PPCs are constrained by:

- ❑ The limited set of typefaces and sizes supported by the Windows CE operating system
- ❑ Word-level formatting constraints (bold, italics, and high color might cause problems at a low-resolution)
- ❑ The absence of Dynamic HTML and JavaScript capabilities, which prevents information developers from using various bells and whistles like expanding pop-ups or right-click menu options

## User Behavior and Usage Patterns

Albers and Kim state, “(to the PDA user) the information content is the system” (51). The designers of online Help should be able to predict the user’s context of use and provide the right information that allows the user to complete a task. In a PPC online Help system, the small chunks of information force the user to spend more time in finding, reading, and assimilating the same amount of information as compared to the substantially larger user interface of the PC.

PPC users demonstrate a searching behavior where they try to find answers to problems. However, the search mechanism in PPC online Help has limited functionality and does not support full-text search. As a result, PPC users must define their search criteria carefully; PPC users cannot use ill-defined search patterns where they have only a vague notion of the end goal. They cannot continually redefine the search criteria based on the results of the ongoing search process to obtain the desired information.

Online Help in PPCs presents information in a linear structure. In a linear design, the number of levels (or depth) at which information is located is minimal and users access the target online Help topics through first-level hyperlinks. Research by Sprujit and Jansen shows that the linear hypertext format used in PPC online Help replicates online reading behavior, supports faster reading, and is conducive to performing a specific, information-gathering task.

## Current Status

Considering the many design challenges and technical limitations, the development of online Help in PPCs has come a long way. However, this area of user assistance is still evolving and has tremendous potential for new features and new delivery methods. New technology initiatives will

allow information developers to create more responsive, effective, and usable online Help systems. Alternative media like video, voice, and Internet delivery can be used to support the current online Help system.

Recent models of PPCs allow synchronization of video files between a PC and a PPC. Improved storage and memory capabilities also allow users to download and run video files on their PPCs. Procedural information can be delivered via video clips and the PPC online Help can be used in support for presenting conceptual and reference information. Context-sensitive video can be also be used in conjunction with voice to provide information that perfectly meets the user’s requests in a given context.

PPCs now offer sophisticated and fully functional support for media files. Though the use of videos as an alternative medium for delivering online Help is still limited by current file size restrictions, video-based user assistance might help information developers overcome the design limitations in PPCs. Delivery of information through the use of sound-only files is another promising medium for presenting conceptual or procedural information. However, like video files, the use of sound files is still limited by current file size restrictions.

The Internet can be used to support users by facilitating access to additional information that is not available in the PPC online Help. Information developers can use the wireless Internet capabilities in PPCs to create multiple levels of user assistance. Users can also access video and sound files, which cannot be stored on the PPC due to storage and memory limitations.

## Conclusion

The design and development of PPC online Help systems is still in its nascent state. It is also useful to note that, at present, there is very little empirical research and data on design and usability of PPC online Help systems. However, information developers must continue to strive for the same levels of comfort, reliability, efficiency, and usability that are offered to users of today’s PC-based online Help systems. Converging technologies such as video, voice, and Internet may hold promise to help information developers improve the usability of online Help in PPCs.

## Acknowledgements

I thank Dr. Elizabeth (Betsy) Overman Smith of Auburn University for her advice and feedback. In addition, I wish to express my gratitude to Rachel Kennedy (who provided input on accessibility issues and options), the peer reviewers, and the editor.

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Though the scope of my discussions has been quite basic, I understand that in the absence of a “touch/feel” interface, visually challenged users need to rely on others for assistance. Memory and feeling/touching, compensatory mechanisms for the visually challenged, cannot be easily extended to the Pocket PC interface. Screen readers are now available for pocket PCs but they are very expensive.

Sound might be a feasible option for physically challenged users. Such an option can be implemented by associating a sound (.wav or MP3) file with the associated help topic, and the user can then access the information. Interaction with the system through a voice-based option might also provide the input mechanism. I believe that these accessibility options need further exploration; however, the pocket PC remains a challenging environment for physically challenged users (especially the visually challenged).

## Works Cited

- Albers, Michael J. and Loel Kim. “An Overview of Web Design Issues for Personal Digital Assistants.” Technical Communication 49.1 (2002): 45-60.
- Buckley, Susan. “Microsoft Windows CE Help for the Pocket PC 2002.” MSDN Online Library. 29 Oct. 2003. <http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnppc2k2/html/WinCEHelp.asp>.
- Hayhoe, George F. “From Desktop to Palmtop: Creating Usable Online Documents for Wireless and Handheld Devices.” Proceedings of the IEEE International Professional Communication Conference., 24-27 Oct. 2001. Institute of Electrical and Electronics Engineers Online Publications: Professional Communication Society, 2001.

## Works Consulted

- Albers, Michael J. and Loel Kim. “Web Design Issues When Searching for Information Using Handheld Interfaces.” Technical Communication 49.3 (2002): 314-329.
- Geisler, Cheryl. “When Management Becomes Personal: An Activity-Theoretic Analysis of Palm Technologies.” Writing Selves/Writing Societies: Research from Activity Perspectives. Eds. Bazerman, Charles and Russell, David. 2003. Colorado State University. 20 Oct. 2003. For more information see [http://wac.colostate.edu/books/selves\\_societies/geisler.html](http://wac.colostate.edu/books/selves_societies/geisler.html).

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## Letter to the Editor

Submitted by Naomi Kleid

I think that the Usability SIG offers its members outstanding ways to share their knowledge, ideas, research, and experience. The *Usability Interface* newsletter provides members and non-members carefully prepared, thoughtful articles. The Usability SIG Web site gives members and non-members access to current and back issues of the newsletter; it also serves as a repository for valuable professional information and links to additional information. The Usability discussion group offers members who choose to belong to it an opportunity to discuss a wide range of quickly changing topics.

## Proposal

Each of our communication vehicles is incredibly valuable in its own right. However, for the past year or so<sup>1</sup> I've been wondering if we could foster more synergy among our communication vehicles so that members enjoy an even more exciting and engaging USIG experience. Specifically, I would like to suggest three things:

- ❑ We make our newsletter more interactive by designating some articles in each issue of *Usability Interface* as **discussion articles** and that we encourage SIG members to comment on those articles.
- ❑ We provide online methods for members to contribute their comments and read other members' comments. The opportunities to contribute and read the discussion comments might be benefits of SIG membership, and the discussions might promote participation and interaction among our USIG community.
- ❑ We provide an archive and / or summary of the comments to document the response of our members.

## Implementation Approaches

How to designate discussion articles and encourage comments would be up to the newsletter Editor. We might, perhaps, start by designating this article as one of the discussion pieces in this issue of *Usability Interface*.

How to collect and disseminate comments could be done in a number of ways. The method selected would probably depend on the effort required and the staffing available to get the work done. (I would be happy to help.)

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# How Much Interaction is too Much?

By Clifford Anderson

I was watching a vendor facilitate a test of his software in my lab, when I distinctly overheard him say, “What is he doing?” and “Hey, he can’t do that.”

That was probably my first misgiving, as I’ve always been taught that you should avoid testing your own work. Watching the facilitator, I was worried that he had stepped over the line of too much interaction and was biasing the test.

I’ve been doing usability testing for almost 20 years. Although I haven’t been exposed to that many other facilitators, the ones I had seen facilitated very much like I did, which also seemed to be very much ‘by the book.’ Here, was someone with a very different approach.

To do a quick sanity check, I asked another usability engineer on my team to come and observe. He seemed to confirm my fears: there was too much interaction by the facilitator in the test. I raised my concerns to a usability e-mail discussion list What they had to say got me thinking.

## “It Depends”

The main theme of my responses was “it depends.” A number of respondents pointed out that the degree of interaction would depend greatly on the **kind of test**. For example, a quantitative test would be much less interactive than a qualitative one.

As Jennifer Kremer, of Hewitt Associates, puts it “I think the level of interaction can also depend on the type of test. If the test requires the user to be timed, I limit interaction as much as possible. If the test is just to see how the user would complete the tasks (and no timing is involved), then I may be more interactive.”

Jennifer points out another difference, depending on **when the testing is being done**, or on the particular parameters of that test:

Also, if it is a more informal design review or paper prototyping testing session, the rigor you would have for a formal usability test may not be appropriate (it just depends on the expectations of you, your users, and the people sponsoring/owning the work).

Being **flexible** is the key here. As Whitney Quesenbery, of WQUsability, points out “Perhaps we are talking about adapting the moderation style to the participants, context, and goals of the test (as, indeed, one might choose a specific testing method to meet specific goals).”

## Standard Interactions

At the same time, though, there are a number of calls for interaction that are pretty standard. Chauncey Wilson, of BMC Software, pointed out two very practical considerations:

**If a prototype is buggy** and there is limited functionality, you may have to intervene to help people around the rough edges. Intervene **when someone has gotten so far off track** that you are wasting everyone’s time and you are not learning anything. Try to provide cues in a progressive disclosure style to avoid blatant assistance (give a small tip and then escalate).

Figuring out when the second issue actually happens is more problematic. I rely on quotes in my reports, and I find I get some of my best ones when users are in such situations. At the same time, making the user feel helpless or upset can be very counter-productive. This *is* a judgment call.

One form of interaction we all have experience with is **getting a user to talk**. Non-directive, open-ended questions such as “What are you thinking?” “Is that what you expected?” or “What just happened?” seem to work best here. More directive interjections like “Are you confused?” or “Were you trying to copy the file?” run the risk of interpreting behavior and, thus, possibly influencing it. They should be avoided.

A particularly good method to keep users talking involves **“active listening”**. This limits interaction more to echoing what the user just said and lots of “uh-huhs.” The former is particularly useful if what the user said was incomplete (“This isn’t what ...”) or vague (“Wow!”).

Personally, I also do all I can at the beginning of the test to **address the unusual situation** that users find themselves in (and which, I believe, contributes to their being silent). I directly address the oddness of the environment, the unfamiliarity of thinking out loud, and of my sitting there but not participating. Telling users that the system, and not them, is the “subject” of the test helps too. Treating the user as more of a partner in the study is even more beneficial.

A final necessary interaction is to elicit **specific issues**. Though we design our tests to lead the user to these issues as part of a real task, human behavior is unpredictable, and users don’t always end up where we think they will.

*Continued on page 10.*

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## How Much Interaction is too Much?

Continued from page 9.

Note, though, that this kind of interaction is much less straightforward and much more prone to bias.

## Quality, Not Quantity

Ash Donaldson points out that it's not the amount of interaction, but the kind of interaction that counts, "It's not so much what level, but what types of interactions, will bias the results."

As Ash points out, this can get quite **subtle** "Without discipline and the relevant background and training, opinions are often transferred during interactions with the participant in the form of leading questions (while probing) on the obvious side, or changes in pitch, intonation and pace of the voice, posture, head movements, hand movements, facial expressions, eye movements, etc., on the not-so-obvious side."

Chauncey Wilson points out that this is especially a problem when it comes to **reinforcement** he advises, "Watch how you reinforce the participant's responses. For example, it might be necessary to provide some positive feedback, but don't overdo it because it might backfire the first time the person has trouble and you aren't providing feedback (I've seen this happen and the participant will sometimes look at the facilitator and say something like, "I guess that I'm not doing too good now" when they are suddenly deprived of that positive feedback.)"

One reader referenced an excellent article by Howard Tamler ([www.htamler.com/papers/intervene/](http://www.htamler.com/papers/intervene/)). Tamler discusses a particularly subtle problem – "**why**" questions:

They are not only imprecise but also imply criticism. For example, if I say to my shivering and crying child "Why didn't you wear your jacket?" she knows she's being scolded rather than being asked for information. Likewise, "Why did you select that file?" suggests that the user needs to justify her action because it's incorrect, and does not specify what the questioner is fishing for. A better way to phrase the same question is "When you selected that file, what were you expecting to do with it?" or "How did you decide to select that file rather than some other file?"

These more neutral and precise questions imply a sincere request for particular information, rather than a request for justification. The difference is subtle but can often be potent in terms of how the user responds. Other problems include engaging in a **dialog** with the user (with all the problems the consequent social dynamics introduce). Donna Maurer suggests a way to deal with the user's natural

tendency to do so, "If asked a direct question, try tossing it back with a 'what do you think?' kind of question." Because some users may be naturally curious about how the system you are testing works (especially if they failed to complete a task), I also always tell them to "hold that thought," record the question, then come back to it at the end of the test.

Another issue involves **letting the user play designer**. Tamler cites Jared Spool as observing that, "users don't know enough about the particular application, or design in general, to come up with feasible suggestions, and their answers to such questions are generally naive and unproductive." At the same time, though, Tamler cites several instances where a user has cut through the Gordian knot and proposed a credible solution, something that I have also observed. In general, at our lab we allow users to "put on their designer hats," but without encouraging them to do so, and we shut them off only if the hat seems to fit too well and they spend too much time in design mode.

A final issue involves **task completion**. A user's sense of whether they are done can be a very important finding. If, however, the facilitator jumps in and asks directly, "Are you done?" we will never get that valuable information.

## Think Ahead

Given what a challenge all this can be, how can the facilitator avoid bias in these situations? Simply "winging it" is probably not the solution. Chauncey Wilson suggests that including a section in any proposal, test plan, or report that details guidelines for intervention. For example, you could include a note about how you would handle the situations described above.

I take this one step further. I am famous for my extremely **detailed test scripts**. These typically include the scenario I will give the user and detailed steps for the correct and any logical alternate paths (whether correct or incorrect). The scripts also include possible interactions and interventions for each step. Though no test will ever go so neatly as my test scripts, thinking ahead what you are going to say in this manner can help ensure that each user will hear the same open-ended, non-directive questions.

Even if you're not open to this degree of fanatical preparation, you can make a **conscious effort** to avoid bias, even if only during the test. As Ash Donaldson points out, "By choosing words carefully, maintaining a consistent voice and minimizing physical presence, I believe that much more, less biased data can be drawn from participants."

*Continued on page 11.*

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### ***How Much Interaction is too Much?***

*Continued from page 10.*

## **Improving Your Skills**

None of this is easy. Tamler cites his background as a psychotherapist as particularly useful. Though going back for your PhD in clinical psychology may not be practical for all of us, there are things we can all do better.

**Simply recognizing** that facilitation is a real, difficult, hard-to-acquire skill may help. This is particularly the case for beginners, especially when one realizes that the skills involved are not natural in any sense of the word. As Donna Maurer puts it, "One of the hardest things to do is to learn when to keep quiet." It is natural to want to keep the conversation going, to participate, to be helpful. Much of the mentoring I have done has focused on this basic skill."

For more experienced facilitators, perhaps the best way to improve is simply to **get feedback**. As Chauncey Wilson points out, "If you are a sole practitioner, take some old tapes and have a colleague watch with you and discuss how you intervened and whether it was too little, too much, biased, etc. If you work with a group, consider asking the observers during pilot testing or regular sessions if there was anyplace where the intervention didn't seem appropriate."

As with a number of usability skills and as Donna very aptly puts it, "The concepts are easy, the practice hard."

Special thanks to Jennifer Kremer, Whitney Quesenbery, Chauncey Wilson, Ash Donaldson, Donna Maurer for their contributions to this article.

*Clifford Anderson is a Senior Usability Engineer with Wachovia Bank in Charlotte, North Carolina. He is responsible for usability testing and expert evaluations for wachovia.com and for the bank's intranet.*

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## ***SIG Bits***

### **2003 Distinguished SIG Service Award**

Congratulations to Alice Preston as the recipient of the 2003 Distinguished SIG Service Award in recognition for her work with the New Jersey Usability SIG and contributions as lead copyeditor of *Usability Interface*.

## **Usability SIG Business Luncheon at STC Conference**

**When:** Monday, May 10 at 12:30 p.m.

**Where:** Room 345 of the Baltimore Convention Center

**Agenda:** Discuss how the SIG is doing and your ideas for improving it.

Everybody is welcome!



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## ***Conferences: Usability Professionals' Association***

The 13th Annual Usability Professionals' Association Conference (UPA 2004) will be held June 7-11, 2004 at The Minneapolis Marriott City Center in Minneapolis, Minnesota.

Registration is open on the UPA 2004 conference website at [www.upa2004.org/](http://www.upa2004.org/). The site now includes the program, including Workshops, Tutorials, Invited Speakers and the Presentation schedule.

The conference theme is Connecting Communities. Communities are changing in ways unimagined a generation ago. While technology undercuts and fragments traditional communities in many ways, it also opens broad new possibilities. UPA 2004 will explore the ways that communities affect usability and users, as well as the ways that technology affects communities.

Susan Fowler and Alice Preston will be leading a workshop at UPA on Tuesday, June 8, 2004, titled: Workshop 9: "Yeah, I hear you": Why Aren't There More Sounds and Graphics in Our Interfaces? This one day workshop will collect information on the use of graphics and sound in complex, data-intensive, and mission-critical designs. The participants will share information about the neuropsychology of visualization and auralization; when multiple media are and are not useful; and the challenges of adding multimedia to applications. The result will be guidelines, a resource list, and a bibliography.

For more information, see [www.upassoc.org/conferences\\_and\\_events/upa\\_conference/2004/program/Workshops/YeahIHearYou.html](http://www.upassoc.org/conferences_and_events/upa_conference/2004/program/Workshops/YeahIHearYou.html).

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## Letter to the Editor

Continued from page 8.

Of the many approaches possible, two are:

- ❑ We could either provide a link at the end of the online version of the discussion articles to the current USIG discussion group or we could provide a link to a separate USIG discussion group dedicated to discussing newsletter articles.
- ❑ We could provide a link at the end of the online version of each discussion article to a separate discussion group for only that article. (For example, we could establish something like a Yahoo! community listserv for each article, and authorize participation in that community for the addresses on the USIG email list.)
- ❑ If we need to make provisions to include comments from members who do not use the internet, we could do that too.

How to provide an archive or summary of the comments submitted during the discussion of the article would depend on how the discussion comments were collected.

- ❑ If the comments were collected in a separate discussion Blog for that article, then the comments might be archived online with the original online version of the article.
- ❑ If the comments were collected in a shared discussion group, then the original author might prepare a summary of the comments. (This collection approach would follow the very effective technical communication FORUM conferences, especially their Idea Markets and their *PreSeedings* and *PostHarvest* publications, which influenced my thinking about this part of this proposal.) If the original author is unavailable to prepare the summary, then a discussion summarizer might be assigned.
- ❑ In either case, a summary of the comments could then appear in a follow-on article in the newsletter.

## Benefits

If we start by designating some of our newsletter articles as discussion articles, we may be able to shift the "newsletter" paradigm to more of a "news discussion" paradigm. As I see it, the newsletter paradigm is one in which an author writes a letter or article that is sent to others who then sit and read it. Perhaps a better paradigm for our fast-moving, highly interactive society is that of an idea network or news discussion in which a person presents a carefully prepared, thoughtful idea statement (which is like an article) that is sent to others who then respond by entering into a discussion of that idea; the discussion might include the statement's author and any other respondents who care to participate.

By using our newsletter to increase interaction among SIG members, we may increase the vitality of our newsletter and provide an additional way to promote a sense of community among the Usability SIG participants. And by using the Web as our primary medium for interactivity, we would have more reasons for disseminating our newsletter online, and we would retain the ability to archive and retrieve past articles and discussion comments online.

A few journals have adopted this approach (such as e-Volunteerism: The Electronic Journal of the Volunteer Community, at [www.e-volunteerism.com](http://www.e-volunteerism.com)), but we may be the first professional society to create an interactive online newsletter.

I think we have much to gain by designating some of our newsletter articles as discussion articles and providing an interactive method to discuss those articles. I think we should try it and see how it goes. Perhaps we could start the news discussion with this proposal. I'd like to know what you think.

Thank you for considering these ideas.

Naomi Kleid

*Dear Naomi*

*Thank you for writing. Good idea. I have submitted your suggestion to Whitney Quesenbery our Web Master and Karen Bachmann our Usability SIG Manager to review the feasibility and benefits of your suggestion. Their response will be published in the next issue.*

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## Profiles in Usability

Do you know a person or organization that is a champion of usability and deserves to be recognized? If you do, *Usability Interface* would like to know. Your article need not be longer than 300 words describing how this person or organization is making strides to make products easier to use, easier to learn, and accessible. Submit your article to [david.dick@swift.com](mailto:david.dick@swift.com).

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## Have You Moved or Moving?



Don't miss any issue of *Usability Interface*. Send address changes to Society for Technical Communication, 901 N. Stuart Street, Suite 904 Arlington, Virginia, USA, 22203-1822 or online at [www.stc.org/directory.html](http://www.stc.org/directory.html).

## Tooling Around

By Gloria McConnell, Senior Member, STC Phoenix Chapter

If you aren't necessarily up on the latest hardware helpers, take note. One of the coolest things I've seen lately is a tiny USB (universal serial bus) storage device called a USB "pen drive" or "memory key." It's a keychain-sized USB flash memory storage device.

### How it works

The USB pen drive plugs into a USB port on your computer. Your computer detects it as a removable drive. Voilà! Easy data transportation from one computer to another when a network connection is not available. Figure 1 shows one connection method.

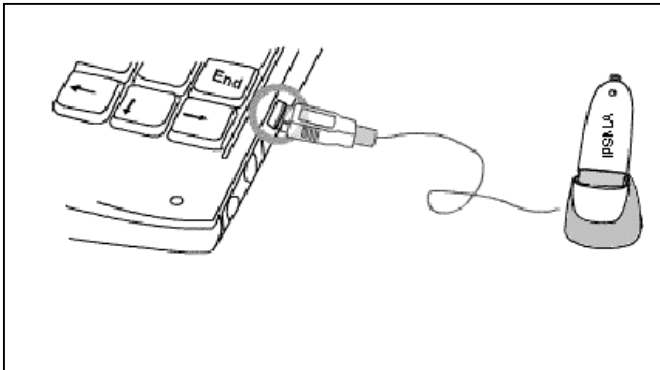


Figure 1

Other pen drives plug directly into the port (no little docking station or cable needed). The pen drive acts just like a floppy diskette in terms of accepting and transferring files. One big difference, though: depending on the model, USB pen drives hold from 8 megabytes to 1 gigabyte of data. That high end is equivalent to about 700 floppies, folks.

### Bye-bye, floppy

It's pretty easy to see the future of 3.5-inch floppies (which generally hold 1.44 megabytes). They will soon be going the way of 5.25-inch floppies. Dell already announced in February 2003 a phase-out plan for floppy drives on some lines of their computers.



It's just a matter of time until our trusty floppy drive is a relic of the past. Maybe we can recycle our floppies into coasters? Modern art? Armor for battle in meetings?

Many pen manufacturers are doing glitzy things in hopes that they will stand out in the crowd. They are offering the devices with everything from MP3 playback features to built-in cameras.

One vendor is offering their pen drive with fingerprint biometric privacy capability. The MP3 playback capability may be one of the most compelling. PenPower Technology offers the WeWa MP3 Play, a USB storage device that can store a PowerPoint presentation and accompanying music. WeWa has a tiny liquid crystal display for browsing tracks, an audio input jack and rechargeable battery.

For more information, see:

- PC World, "What Can You Squeeze into a USB Pen Drive?," November 2002; [www.pcworld.com/news/article/0,aid,107259,00.asp](http://www.pcworld.com/news/article/0,aid,107259,00.asp)
- PenDrive "intro" site [www.pendrive.com/intro.php](http://www.pendrive.com/intro.php)
- Storage Supersite, "Say Goodbye to 3.5-inch Floppy Disks," February 2003, [storage.ziffdavis.com/article2/0,3973,908737,00.asp](http://storage.ziffdavis.com/article2/0,3973,908737,00.asp)

*This article is reprinted from the June 2003 issue of Rough Draft, newsletter of the Phoenix Chapter, with minor corrections.*

**FYI.** Because of the high storage capacity on these devices, some organizations are restricting or prohibiting use of the device by employees for fear that their intellectual property will be exposed to misuse on an unsecured device or stolen by disgruntled/unethical employees.

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