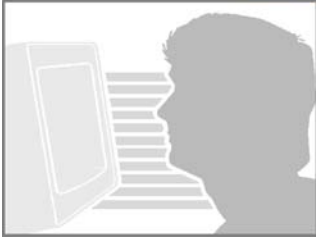


# Usability Interface



The Newsletter of the STC Usability SIG

October 2003

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## *Uncovering True Motivation: The Whys and Wherefore*

By Scott McDaniel

**M**y daughter has been reminding me of the importance of asking questions to understand why things are as they seem or appear to be. She never stops asking “why?” As a designer of software systems, I believe that the child’s spirit of “why” is something to retain and infuse into our work when gathering requirements, interviewing users, and interviewing stakeholders.

### Why?

People are not always good at stating their needs, but they are good at stating specific desires. To bridge the gap between needs and wants, it’s important to question each feature request and requirement. Playing the why game, asking “why?” after each and every answer, no matter what it is, moves the discussion from specific requests to fundamental goals.

### Why Would We Want to Talk about Fundamental Goals?

Understanding a person’s goal reveals the true, perhaps hidden, requirements. Maybe the feature request was correct, or maybe it was a sign that they were really trying to do something else that could better be accomplished another way. In either case, formally playing the why game allows designers to trace specific requirements to the tasks they support, and the tasks up to the high-level goals that they support.

Let’s look at an example. A business-to-business system allows companies to create and sign contracts with each other. The companies then buy and sell goods under that contract. Contracts are usually for a fixed amount of money, and they are automatically closed when the contract is fulfilled.

A summary page shows the details of a contract’s transactions. One company’s shipping department asked to be able to print the summary page as a printer-friendly, official-looking document. Why? So they could give the accounting department a record of the transactions. Why does the accounting department need an official-looking, paper copy? So they can have a person enter the data to double-check the data received directly from their own subsystem and their customer’s system. Why do they do double data entry? Because that is an established (and trusted) way to reduce errors and keep the books balanced. Why does accounting keep the books balanced? Well, because that’s what an accounting department does.

This example traces a very specific request to a general goal and a group’s identity. The need for a formal-looking document to give to the accounting department was never really established. Why wouldn’t the accounting department be happy with a printout of the “ugly” screen as it appears in the web application’s browser?

Following this line of questioning establishes that the original feature request for an official-looking document isn’t actually needed. Or maybe the answer, perfectly legitimate, would be that the culture of the company places a premium on formality and record keeping and that the system won’t be taken seriously unless it can produce official-looking paperwork.

The principle is this: Every feature of a design should be traceable to its users’ goal and identity. One way to do this is by asking the “why?” questions until we can do this. When interviewing users and stakeholders I often find myself starting this chain of “why” questions, but for some reason I hesitate to continue, perhaps because people react as if they’re being interrogated and that their answers aren’t good enough. I urge myself to continue. I rephrase the questions, and I don’t stop until the user’s goal is stated and understood.

*Continued on page 2.*

## Feature Article

Continued from page 1.

# Why Do We Want to Trace a Feature to User Goals?

Each level of question between feature and goal provides two opportunities:

1. *To identify requirements that were not explicitly stated.* Knowing that the task of printing a formal contract summary is to give accounting a copy for data checking suggests other requirements. Do sales account managers need copies of these summaries for their reports? Ask them.
2. *To identify alternate design solutions or provide a rationale for a current solution.* Knowing that the accounting department needs contract summaries for data checking purposes suggests the possibility of having the system automatically generate a PDF version of a contract's summary once it closes. It could then e-mail it to accounting, thus eliminating the printing requirement but satisfying the need. On the other hand, the system could automatically reconcile the contract summaries with the accounting system records, but understanding the value of having a person double-enter argues against that direction.

This technique is useful in several ways:

- ❑ With customers during user analysis to identify their goals.
- ❑ With requirements analysts as a check when assembling requirements to discover what may have been omitted.
- ❑ With designers to ensure that the method to implement the features satisfies requirements, tasks, and goals.
- ❑ With reviewers or users while evaluating an interface (heuristic review or usability testing) to make sure each feature satisfies a requirement that is based on a task, which supports a goal.
- ❑ With interviewers to investigate why a stated goal is an integral part of a person's work identity.

Tracing features to goals allows me to be certain that I have met the customer's needs and created a truly useful system. In combination with user analysis and iterative usability evaluation, this strategy allows me to be certain that I have produced the best user-centered design possible.

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## Usability Interface

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## Computer Technology and Cameras

By David Dick, Editor

**A**lan Cooper is correct when he describes in *Inmates Are Running the Asylum* how a product changes when computer technology is applied. One example is the camera. Digital cameras are similar to non-digital cameras except for the way they capture an image—actually, it's a camera with computer technology.

The following are my observations of how a non-digital camera compares to a digital camera:

- The cost for a good non-digital camera starts at \$40 and \$10 for a disposal camera.  
The cost for a good digital camera starts at \$200 (and up) for a digital camera.
- The instruction guide for a non-digital camera can be described on two pages.  
The instruction guide for digital camera is only limited to the number of gadgets, features and functions, which can be explained on hundreds of pages. To save on publication costs, the guide is published as a PDF on CD-ROM—but you need a PC to read it.
- It's easy to have non-digital camera film developed: take the film to a photo development center.  
With a digital camera, images are downloaded to a PC, opened with image editing software, and printed on a printer.
- Film for a non-digital camera costs around \$5. Picture quality is dependent on the film and shutter speed.  
A digital camera has an image sensor, which has millions of pixels. Picture quality is proportional to pixels. The number of pixels is proportional to the cost of the camera. How many mega-million pixels are enough to take a 'good' picture?
- With a non-digital camera, you never know the quality of the pictures taken until the film is developed.  
A common feature of digital cameras is the LCD screen, which displays pictures taken—unwanted pictures are easily deleted.
- With a non-digital camera, the pictures aren't lost if the batteries expire or removed.

If the digital camera doesn't have flash memory, the pictures are lost if the batteries expire or removed.

All things considered, the useful features of digital cameras are not enticing enough to trade for the simplicity of the non-digital design that meets the fundamental goals of the majority of users. As for me, I have learned my lesson with digital cameras. I will keep my user-friendly, old fashion, but reliable non-digital camera.

## Pulse of the SIG Electronic Voting: Usability, Communication, Trust

By Karen Bachmann, Usability SIG Manager

**A**s a resident of Florida and usability professional, I'm painfully aware of the importance of good usability in the design of voting ballots. Happily, so are an increasing number of voting officials in all levels of the U.S. government. Beyond just the undeniable importance of a usable form and voting mechanism, is the need to consider the comfort and satisfaction of voters dealing with sometimes radically changed voting systems, especially when the move is from paper-based voting systems to electronic systems.

Proponents of electronic voting systems laud their many benefits, such as ease in customizing the ballot to meet the language and special needs of all voters, potential reduction of errors by eliminating paper-handling by polling staff, speed of tallying results, and so forth. Articles about the success of electronic voting in several European countries often suggest that electronic voting systems are the only way to avoid a repeat of the confusion of the 2000 U.S. presidential elections as well as increasing voter turnout where voting extends to the Internet. The ninth circuit court of appeals halted (at least until the next appeal) the California recall and gubernatorial elections because of a lack of updated voting machinery in six counties.

However, change always brings with it increased learning time and increased potential for error. In the case of voting, changes affect poll workers as well as voters. The issue of security is also of concern. In the past month, I have read five or six articles expressing the concerns of technology experts about the security, the audit capabilities, the anonymity, and the accuracy of the most popular systems. A book, *Black Box Voting: Ballot-Tampering in the 21st Century* by Bev Harris, about the security and integrity of the latest voting systems is about to be published.

Faced with information for and against electronic voting systems, voters may face updated voting machines with ambivalence. On the one hand, the systems are often much easier to use and even have a coolness factor. On the other, voters want to be certain that their votes will be counted accurately and securely.

Janice Redish collected feedback from participants in the UPA 2003 Idea Market ([http://upassoc.org/conferences\\_and\\_events/upa\\_conference/2003/usabilitylifecycle\\_bachmann.doc](http://upassoc.org/conferences_and_events/upa_conference/2003/usabilitylifecycle_bachmann.doc)) on the credibility of web sites. Whether electronic voting systems include an Internet interface or not, credibility is a key component to voter satisfaction and comfort.

*Continued on page 9.*

## Using Personas: Bringing Users Alive

By Whitney Quesenbery

**H**ow do we communicate what we know about the people who use our products in an engaging, efficient way? How do we get beyond statistics to a portrait of users that helps us use this information to make decisions?

A “persona” is a portrait of a typical person who embodies key user characteristics. By creating personas that represent the most important user groups, you create a group of personas that embody an understanding of the key user groups and how they differ from each other. The techniques for creating personas start with user analysis and use aspects of storytelling or playwriting to fill in the details of a compelling portrait. This portrait can include demographic information, attitudes, needs, motivations, as well as personal details.

Although personas are traditionally created from user research—including interviews, contextual inquiry, and other qualitative methods—information to form the basis of personas can also be collected from within a team or company. Like a knowledge management project, gathering this information focuses on finding out what “you” already know about real users. People from sales to training and from field service to those who formerly worked in the field can provide insights, anecdotes, and stories you can use to add detail to the personas. In cases where you have no access to users at all, these people can be an alternative source of information. You may find gaps or contradictions (which can be used to justify direct user research).

Personas can be used in many ways throughout the design and evaluation of a new product:

- ❑ Scenarios of use illustrate how, when, and why each persona uses or interacts with the product.
- ❑ The learning styles suggested for each persona can suggest how information should be presented to them...and what information they are looking for.
- ❑ Differences between the personas can illuminate design discussions, showing which features will be most useful for each of the personas.
- ❑ Design reviews can be conducted from the point of view of a persona, adding another dimension to a traditional peer review or interface walk-through.
- ❑ The personas can be the basis for demographic requirements in selecting participants for usability testing.

- ❑ The scenarios created for the personas can also be used for usability testing, or for quality assurance.

Personas are an increasingly popular way to embody and share user research—a low-cost, high-impact way to make users come alive for the entire team. Give them a try on your next project.

*Whitney Quesenbery is a user interface designer and usability professional who has been entranced by personas and their power to guide the design process. She can be found at Whitney Interactive Design, or on the web at [www.wqusability.com](http://www.wqusability.com).*

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## Contribute to Usability Interface

*Usability Interface* is accepting original articles and case studies, anecdotes, cartoons, and book reviews on the following topics for the January 2004 issue: how to identify a bad GUI design, usability testing and EPSS, usability for online help, and case studies on applying usability techniques (and creative solutions to problems).

The deadline for submitting articles is 30 November. Send your articles to [david.dick@swift.com](mailto:david.dick@swift.com).

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## Message Severity Levels: How Much Is Enough?

By Martin Schwirzke and Mayuresh Ektare

This article describes how we investigated software message severity levels using surveys in a series of usability tests and how the results helped us create a standard set of severity levels. These findings can also be applied to other messages.

### Introduction

Cadence Design Systems is a supplier of electronic design automation software, used to design semiconductors and other electronics based products. Each of Cadence Design System's software products use a different system for error messages, a practice that generates inconsistent messages and results in a high volume of customer support calls. To improve customer satisfaction and reduce support costs, the Cadence Error Message Improvement Project (EMIP) team developed message writing standards and a unique ID-based message handling system. The message system and writing standards require a standard set of severity levels to help enforce consistency. Our work supported the development of this standard.

We decided to perform a usability test to evaluate severity level granularity and to identify a set of severity levels that software development teams will use consistently. We hypothesized that increasing the number of severity levels, or granularity, does not improve a user's ability to interpret the problem described in the message.

### Method

Twenty-three test subjects, all Cadence employees, volunteered to participate in three different online surveys. The purpose of the surveys was to determine how many severity levels were needed to help subjects identify the type of problem in the message scenarios. The surveys allowed us to explore this issue from different perspectives: subjects either rated pre-assigned severity levels or assigned their own levels. The expected findings were that subjects would only need a small number of severity levels (Error and Warning) to identify problems in the messages. Each survey used the same six message scenarios. The messages adhered to our message writing standards.

In the first survey, four subjects rated the appropriateness of pre-assigned Fatal, Error, and Warning severity levels assigned to the message texts.

The second survey was a fill-in survey in which three subjects assigned severity levels to the same message texts. In the third survey (based on a modified version of the fill-in survey), 16 subjects were allowed to define their own severity levels.

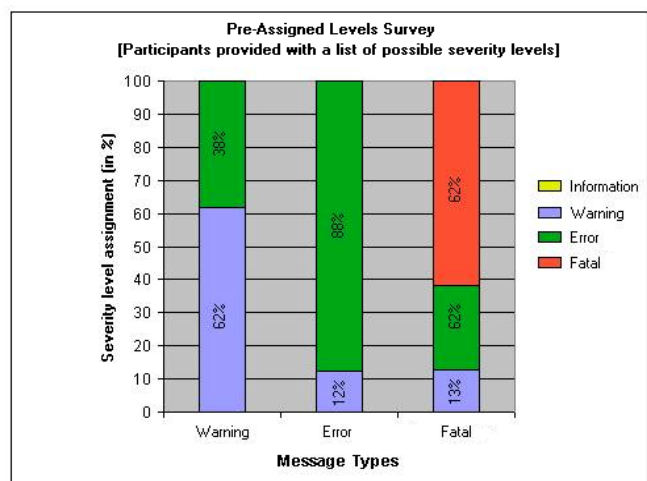
### Results

#### Pre-Assigned Levels Survey

In the first survey, test subjects agreed with the appropriateness of the three severity levels that were pre-assigned to the messages 71% of the time, but this was unevenly distributed across the message types. Respondents agreed to severity levels assigned to Error messages 88% of the time but only 62% of the time for Warning and Fatal messages (Figure 1).

Respondents rated the severity level and the text in the message scenario as being equally important to resolving the problem 67% of the time. In the remaining eight cases, nearly twice as many respondents evaluated the message text (21%) as more informative than the severity level (12%). The message text was more informative because it contained detailed information about the problem. The severity level is more of a message ID, because it allows users to identify the type of problem.

Figure 1. Pre-Assigned Levels Survey



Continued on page 6.

## Message Severity Levels

Continued from page 5.

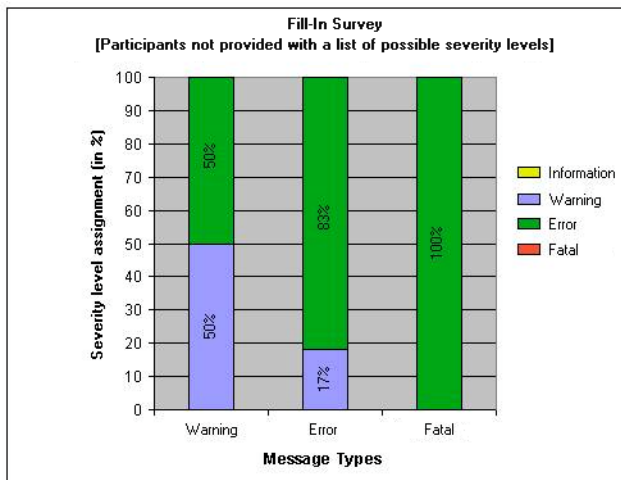
### Fill-In Survey

When asked to assign levels to the messages themselves, the subjects assigned the correct severity level to the messages only 50% of the time, the result represented great differences according to the level. All of the Fatal messages were incorrectly assigned the Error severity level.

The results suggest message severity levels are extremely subjective. The subject's prior experiences with other messages influence his or her perception of message severity levels. (The survey instructions can be ruled out as a reason for this finding because subjects were asked to assign their own severity levels—severity levels were not provided in the fill-in survey).

Although the severity level was correctly assigned to Error messages 83% of the time, only half of the Warning messages were correctly assigned (Figure 2).

Figure 2. Fill-In Survey

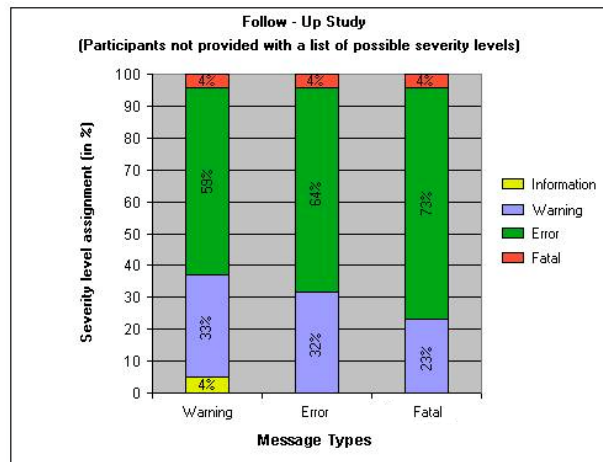


### Follow-Up Survey

In the Follow-Up Survey, subjects assigned the correct severity level to the messages 40% of the time. Subjects used five different terms to describe severity levels: Fatal (4 times), Failure (2), Error (55), Warning (25), and Info (1). An interesting result was that they assigned Error severity levels to Fatal messages 73% of the time. (One survey was incomplete and therefore six ratings were not used, and several subjects did not provide a rating for three more cases, thus nine ratings were missing from this study.)

Severity level was correctly assigned to Error messages 64% of the time, while Warning messages (33%) and Fatal messages (4%) received far fewer correct assignments (Figure 3).

Figure 3. Follow-Up Survey



### Conclusions

Subjects perceived all of the Fatal messages to be Error messages in the fill-in survey. The results of the follow-up survey reinforce the finding that subjects tend to rate Fatal messages the same as Error messages.

When asked to provide severity levels for the messages, subjects consistently used two levels: Warning and Error (fill-in survey). This supports the argument that increasing the granularity of severity levels is unnecessary.

Across all three surveys, the combination of message text and severity level was rated most important to solving the problem. In the remaining cases, message text was rated as more informative than the severity level by a margin of almost 2:1.

The severity levels listed in our message writing standards were used in 93% of the survey responses (that is, Error and Warning—the Information and Question levels were not tested). The observation that subjects did not increase the granularity of the severity levels when rating the messages suggests a smaller number of severity levels is sufficient. The benefits of using fewer severity levels include: (1) more consistency in its application by software development teams and (2) less confusion for users.

### Recommendations

As a result of our survey, we recommend using the following severity levels:

**Note:** The Information and Question severity levels were not tested, but they are included in the recommended set because messages with Information and Question severity levels are easily identified by users, and they are used consistently at Cadence Design Systems.

Continued on page 9.

# *Reshaping Technical Communication: New Directions and Challenges for the 21st Century*

Reviewed by Jeff Staples, Houston Chapter

Ever wonder about the relationship between academia and the corporate world? Or, maybe if you are on the corporate side (as I am), have you wondered why academia operates as it does? (And vice versa.) If so, *Reshaping Technical Communication: New Directions and Challenges for the 21st Century* by Barbara Mirel and Rachel Spilka offers great insights that might help you gain an understanding of how each world operates, why they operate as they do, and how the two worlds affect and can alter the future of technical communication.

This book offers an enlightening experience as it explores the similarities and disparities that exist between the two environments. However, it was not what I expected based on the title. I thought the book would explore technical communication developments/prognoses in the corporate environment and offer suggestions for ways that technical communicators might align themselves to be in sync with future developments in the field. Even though I found the title to be misleading, exploring the book was a worthwhile experience.

I was pleasantly relieved that though the text was written by academics, only two chapters are written in academic prose. Most chapters are written in a very straightforward, practitioner-focused style and tone.

In the Foreword, Ginny Redish sets the tone of the book with an enticing discussion of communities. We exist in various communities such as home, work, and professional organizations, and the new century will require that we broaden our community interactions. “Isolation breeds sterility. Overlapping and intersecting communities bring new ideas” (p. x).

The Preface conveys the editors’ intent in creating the book and their resource methods for acquiring the various contributions. Basically, the editors hoped to inspire change by having the book focus on a larger scale, grasping “non-traditional ideas for moving the field forward in new directions.” In an attempt to achieve this goal, they invited “technical communication specialists from both academia and industry who [they] considered especially creative and innovative in their thinking to contribute new chapters” (p. xv).

Continue on to the Introduction for a brief discussion of the Parts and Chapters in the book. The editors provide a historical recap of technical communication: where we have

come from and what lies ahead. They contend that although important progress in the field has been made, it “has not kept pace with either the transformations wrought by the technologies with which we work or the growing demands for effective, valuable, and satisfying interactions with technologies and information systems” (p. 2). The observations are thought provoking and will pique your excitement for what lies ahead—both in the book and in the technical communication field.

Part I (“Revising Industry and Academia: Cultures and Relationships”) explores the gap that exists between the two environments. Authors address, for example, questions such as “why are these two worlds travelling in parallel with so few connections, especially when they share the goal of developing a significant voice in the workplace” (p. 3) and differences in the two environments that “have led to false, stereotypical impressions of each other” (p. 8).

Part II (“Re-Envisioning the Profession”) branches out into the practitioner’s environment, conveying the knowledge and skills that technical communicators bring to their work environments. The text in this part explains the need for technical communicators to expand out of their traditional roles of writers and editors to more “elevated and expanded positions in which they are vital to the strategic workings of their organizations and to the directions and designs of their technological products” (p. 4).

Chapter 1 (“Cultural Impediments to Understanding”) identifies differences between academics and practitioners. As a non-academic, I literally inhaled this chapter! It provides outstanding clarity and explanation for actions and processes that I have encountered when dealing with academics as well as why such actions and processes occur as they do. For example, many academics perceive information as something to share while many practitioners view information as a monetary value, an asset to be protected.

Chapter 1 addresses the differences between academics and practitioners, Chapter 2 (“Jumping Off the Ivory Tower”) addresses the positive ties between the two groups. Deborah S. Bosley discusses commonalities between the two groups such as use of teams and committees, administration and management, and status. To develop a working partnership between practitioners and academics, Bosley

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## **Reshaping Technical Communication**

*Continued from page 7.*

recommends that academics focus on the similarities and common strengths that each group can bring. Academics should focus on working relationships with practitioners as an outlet for getting their research efforts accessed, understood, valued, and used in the workplace structure.

After addressing the differences and similarities between academics and practitioners in the two previous chapters, Chapter 3 (“Researching a Common Ground”) advocates research to identify the areas where the two fields overlap. Ann M. Blakeslee contends that identifying this common ground can help the two fields work more closely together. She proposes methods of research that “will help us understand better the differences and similarities between the two worlds and to develop more productive strategies for communicating across them” (p. 53).

Chapter 4 (“Keeping Writing in Its Place”) explores workplace communication and how academics can effect change in the workplace if they respect the social nature of the work environment. Anthony Paré offers information for academics on ways to improve their influence on workplace literacy such as using a participatory approach to let workers indicate what they need and being aware of the impact that an academics intervention can have on a workplace and its workers.

Chapter 5 (“Active-Practice”) offers a way to improve the relationship of academia and industry through “an approach [active-practice] that involves educators and practitioners working together through project-based activities to achieve more fruitful and fulfilling working partnerships” (p. 82). Stephen A. Bernhardt examines cultural factors that continue to bring a separation in the two groups such as “the alignment of technical communication programs within traditional English departments” (p. 82) (academics) and “the place or value of technical communication research” (p. 85) (industry/practitioners).

Chapter 6 (“Becoming a Profession”) focuses on the need for professionalization of the technical communication field. Spilka advocates that instead of trying to define the field based on a commonality of its representation, we should embrace the diversity that exists and grasp that diversity as a strength for fostering a defined vision and goal. Spilka contends that major reform is needed “for elevating the status of technical communicators and of the field as a whole through professionalization” (pp. 108-109).

In Chapter 7 (“Taking Our Stakeholders Seriously”), Karen Schriver questions whether existing research, specifically in the information design field, has been effectively conveyed to practitioners. Why else would

practitioners view the research as unresponsive to their needs? She advocates that better conveyance of research findings might lead to more organizational awareness and thus may propel organizations to put more focus and priority on writing and design. Schriver identifies strategies for reaching practitioners and suggests “changing our dissemination practices could benefit the entire field” (p. 113).

Chapter 8 (“Migrations”) confronts the realm of globalization and the global effects on technical communications on both growing and struggling economies. Brenton Faber and Johndan Johnson-Eilola “urge us to envision ourselves as ‘hybrid professionals’ who combine product knowledge and strategic design and business knowledge” (p. 95). They advocate that for technical communication to thrive there must be improved relations between academia and industry and between knowledge product and use. Faber and Johnson-Eilola offer solutions for improving interactions between the two environments, including frequent interchange by technical communicators between the two fields.

Chapter 9 (“Expanding Roles for Technical Communicators”) presents several case histories of individuals who began in technical communication in the traditional roles of writers and editors and then expanded their professional scope into other areas such as usability manager and web content writer. These case histories offer ideas to other practitioners who want to expand their own roles. Lori Anschuetz and Stephanie Rosenbaum offer suggestions on how such transitions can be given support so that the boundaries and roles of technical communicators can be expanded to “ensure the growth and influence that our field deserves” (p. 163).

In Chapter 10 (“Advancing a Vision of Usability”), Mirel continues the theme of technical communicators advancing out of traditional roles into roles of influence in software design and production. By assuming leadership roles in design and production, technical communicators will be positioned to build usability into the software at inception. She advocates that technical communicators should “advance new approaches to task analysis and development processes” (p. 96). Mirel contends that it will be through these new approaches that the usability field will move forward rather than “simply [having it] continue to run in place” (p. 186).

Chapter 11 (“Tales of Brave Ulysses”) basically recaps the discussions that have come before. Russell Borland advocates that technical communication evolve into interaction design. In effect, technical communicators must be knowledgeable in areas such as how the products and programs are built and must offer useful ideas for solutions. Borland contends that having technical communication focus

*Continued on page 10.*

# *Leonardo's Laptop: Human Needs and the New Computing Technologies*

Reviewed by Allen Rotz, Usability SIG Manager, Washington, DC Chapter

Anyone who knows Ben Shneiderman and the activities of the Human Computer Interface Lab (HCIL) would expect he would produce a book like *Leonardo's Laptop*. Twenty years ago as founding director of HCIL, Shneiderman was in the avant-garde of bringing together experts in computer science, engineering, psychology, and education to develop computers and their interfaces to better serve human needs.

## Why did Shneiderman write *Leonardo*?

Having long been at the forefront of interface design among design professionals and all the work about what is good and what is bad, Shneiderman sensed a need for something else to take things to the next level. That professionals doing their best to promote and evangelize was not enough. It was involvement of the masses that would really break the chains that are restrained development and implementation of what is possible with computing and interfaces.

He writes, "Old computing is about what computers can do. New computing is about what people can do." And one thing people can do is to demand better computer interfaces or "Universal Usability." In *Leonardo*, Shneiderman empowers users to demand more by giving real, concrete examples of how computers can better support human activities.

## Shneiderman's approach

Shneiderman develops a framework for designers to construct technology to support users and their needs. This framework is a four-row, four-column matrix he calls the Activities and Relationships Table (ART). ART is Shneiderman's approach to relating human activities and relationships. The columns are four activities: collect (information), relate (communicate), create (innovate), and donate (disseminate). The four rows are relationships, each one describing an increasingly large group: self, family and friends, colleagues and neighbors, citizens and markets. By using this framework, human needs are identified first and then technology is developed to meet these needs.

In separate chapters on e-business, e-learning, e-commerce, and e-government, this framework is used to identify needs specific to these areas and to begin to consider how technology can better support the individual and society.

The focus is on how technology can support human relationships, how technology can enable individuals and groups to be more productive and more creative, and how technology can help diverse groups collaborate within communities or across continents.

Each chapter concludes with a thoughtful section labeled, "The Skeptics Corner." Where Shneiderman completes the discussion by voicing the concerns of those who would question his ideas or who see problems with his approach. Shneiderman readily admits that real world solutions are not without potential problems or risk. Here he strengthens his theses by contrasting them with the alternatives.

Of particular interest to the usability community is his chapter subsections on defining universal usability, accommodating diverse users, bridging the gap between what users know and what they need to know, and methods for achieving user-centered design among other usability-related issues. This book provides a service to the usability community by raising public awareness of and knowledge about usability.

Some have criticized *Leonardo's Laptop* as suffering from too many dreams of too large a scope without describing a road to get there. To provide such a description would be too limiting and too tied to a specific technology. To specifically describe the road would require a linkage to specific tactics and technologies. *Leonardo's Laptop* is meant to be a guide in getting from the present to our dreams. The vision of our dreams is likely to change, influenced by the technology of the moment that is available to get us there. Shneiderman provides a framework that will work with changing technology to dynamically define the goal, describe the direction we need to travel, and provide a framework to use in building the road to our dreams. Providing a framework to define where we want to go allows us to use newly emerging technologies to reevaluate the path to get to where we want to be.

For other book reviews that provide more analysis of its content and interviews with the author, go to the publisher's web site <http://mitpress.mit.edu/main/feature/leonardoslaptop/interviews.html>

*Schneiderman, Ben. Leonardo's Laptop: Human Needs and the New Computing Technologies, MIT Press, September 2003. ISBN 0-2626-9296-6, 288 pages.*

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## **Pulse of the SIG**

*Continued from page 3.*

Our colleagues in the UPA are discussing this issue as part of the Voting and Usability Project ([http://upassoc.org/upa\\_projects/voting\\_and\\_usability/index.html](http://upassoc.org/upa_projects/voting_and_usability/index.html)). I learned about this project while writing the first draft of this article and noted that the same issues that require good usability to make electronic voting successful also require usable, complete, and appropriate communication.

The electronic voting system I used in the last local election had a short tutorial at the beginning and help available throughout the voting process. While the paper ballot design in my county was always usable (not the now infamous butterfly ballot), the online ballot provided more whitespace and further improved the layout. The county Supervisor of Elections website offered an online demonstration (now offline) and mirrored the voting interaction in the site itself ([www.votehillsborough.org/](http://www.votehillsborough.org/)). All of these technical communication elements, coupled with the usability of the system, left me satisfied with the experience and confident that my vote was correct and correctly handled.

As more voting districts move to online voting, successful systems will include usable communication at all phases and interactions with the voting process. Technical communicators contribute to a process that voters can understand, enjoy, and trust.

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## **Reshaping Technical Communication**

*Continued from page 8.*

on interaction design will lead them “to put their efforts into taking users into more beneficial areas of solving problems of the application domain” (p. 193).

Borland implores that the technical communication focus conveyed by academics and employed by practitioners be more in the role of a product author developing documentation rather than the current role of documentation developer interpreting the developers’ intent/product functionality. According to Borland, without changes “technical communicators are likely to devolve into obsolete appendages to high technology, consumer devices, and software” (p. 194).

Many thanks to Mirel and Spilka for an enlightening and fascinating look into the future of technical communication. They provide an experience in which both academics and practitioners can find thought-provoking data to help them shape the direction and grasp the challenges that face technical communication in the 21st century.

Mirel, Barbara and Spilks, eds. Reshaping Technical Communication: New Directions and Challenges for the 21st Century, Lawrence Erlbaum Associates, Inc. June 2002. ISBN 0-8058-3517-2, 216 pages.

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## **Message Severity Levels**

*Continued from page 6.*

- ❑ **Error:** Use only for serious errors that terminate the software program, whether it’s the result of input, user, program, or system error (use the message text to describe the type of error).
- ❑ **Warning:** Issued for situations that may be problematic but do not cause the program to terminate prematurely. The data produced may or may not be reliable, but should be examined carefully.
- ❑ **Information:** Informational messages present any information to the user that does not fall into any of the other categories of messages listed here. Typically, this message type is used to give the user status about a process that is running.
- ❑ **Question:** A question that the user must respond to in order to proceed.

Do not use Fatal, or any derivative, such as Fatal Error, as a severity level. Always use a clear message text along with the severity level to inform the user of software problems. Be consistent when assigning severity levels to messages (that is, make sure that the message text matches the definition of the assigned severity level).

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*By Scott McDaniel*

Scott offers wisdom from a child—in the course of analyzing requirements, it turns out to be important to keep asking “Why?”

Using Personas: Bringing Users Alive

*By Whitney Quesenbery*

Whitney answers important questions about how we communicate what we know about the people who use our products in an engaging, efficient way, and how to go beyond statistics to a portrait of users that helps us use this information to make decisions.

Message Severity Levels—How Much Is Enough?

*By Martin Schwirzke and Mayuresh Ektare*

Martin and Mayuresh conducted usability tests of their error messages, and present their findings in this article.

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Leonardo's Laptop: Human Needs and the New Computing Technologies