SHINY HAPPY USERS

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Version 1.0

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PREFACE

Shiny Happy Users is a collection of short essays that explore issues surrounding the design, development, and testing of user interfaces. These essays were produced by the participants in the graduate course entitled *Scientific Methods of Human Computer Interaction* offered in the spring 2007 as part of the Human Computer Interaction Program at Iowa State University. The assigned text for the course was *Observing the User Experience: A Practitioner's Guide to User Research* written by Mike Kuniavsky and published by Morgan Kaufmann Publishers, an imprint of Elsevier, in 2003.

Observing the User Experience is an excellent and extensive book that reviews the why, when, who, and how of user experience research techniques. Over the semester, we read one chapter per week as background reading. The weekly coursework required each participant to research and review a secondary source related to the chapter assigned for that week and then post a brief summary of the secondary source to a public blog for the course. Class activities consisted of five-to-fifteen-minute presentations made by each participant followed by group discussion.

At the end of the course, we had collected well over one hundred essays on our blog. Each essay was supplemented by a digitally recorded audio/video presentation and an electronic copy of the presentation slides.

We benefited from each other's presentations and hope that our work might similarly benefit others. Thus we have decided to make our essays and presentations available in an archival format.

You may wish to use *Shiny Happy Users* as an additional resource as you read *Observing the User Experience*. To make this as easy as possible, we have organized our essays by chapters as presented in *Observing the User Experience*.

We also hope that *Shiny Happy Users* stands on its own as a collection of interesting essays relevant to improving the user experience and creating shiny happy users.

ABOUT THE DVD

Shiny Happy Users has a companion DVD containing an electronic version of this book, video and audio podcasts presentations by the authors as well as the slides for these presentations.

At the beginning of each essay, you may see one or more of the following icons:

There is related material on the DVD.

The audio recording of the related presentation is on the DVD.

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ACKNOWLEDGMENTS

We would like to thank Mike Kuniavsky for writing *Observing the User Experience*. His book compiles an amazing wealth of material on a wide variety of user experience research techniques. We dare say that this is the most comprehensive resource available on the topic. We appreciate and applaud the efforts that created this outstanding resource. Through the course, we have had the chance to critically evaluate much of the text and have at times pointed out perceived deficiencies in the text or proclaimed disagreement with the advice given in the text. We hope that Mr. Kuniavsky understands that this evaluation and resulting discussion represented an important part of our learning process with no intended harm.

We would also like to thank the staff of Engineering Distance Education at Iowa State University for providing technical support and audio video recordings of in-class presentations.

ACRONYMS

ACAC	Ames Community Arts Council
ACM	Association for Computing Machinery
AOL	America Online
CB	Citizens' Band
CD	compact disc
CD-ROM	compact disc–read-only memory
CHI	computer–human interaction
CSR	customer service representative
CTO	chief technology officer
CUE	comparative usability evaluation
DBA	database administrator
FAQ	frequently asked questions
FTSE	Financial Times Stock Exchange
FCC	Federal Communications Commission
GOP	Grand Old Party
HCI	human–computer interaction
IA	information architecture
IM	instant messaging
IBM	International Business Machines Corporation
IEEE	Institute of Electrical and Electronics Engineers
IM	instant message
ISU	Iowa State University

IT	information technology
NSA	National Security Agency
PC	personal computer
PDA	personal digital assistant
PR	public relations
RNC	Republican National Committee
SQL	structured query language
UI	user interface
URI	uniform resource identifier
URL	uniform resource locator
UXG	user experience group
WIMP	windows, icons, menus, and pointer
WIPO	World Intellectual Property Organisation

Part I

TYPHOON: A FABLE

ANOTHER PETS.COM

1

ANOTHER PETS.COM

DERRICK PARKHURST

Typhoon was a product produced by a pre-dot-com bust company that was aimed at revolutionizing the news-feed industry. It was developed to compete with PointCast technology. The company had spent over one year in a phase of highly secretive development. The development team didn't do any user testing until just prior to the product launch. The results of the tests were clear—users didn't get it. But there was nothing that could be done to avoid the pending product launch. The launch was ultimately a failure, and the product was abandoned to cut costs. I'm sure someone lost their job over this one.

This story tells us three things:

1. Technology in search of a purpose is no way to start a product.

   What do you get when you use the Internet to sell dog food? Pets.com. Just because you can use a technology to accomplish something doesn't mean that you should.

> It's necessary to have a product that's actually desired by people, the fulfills their needs, and that they can actually use. That means user research.
>
> —Mike Kuniavsky, *Observing the User Experience*[1]

2. Lack of feedback from users and community can be deadly.

   Don't worry about users stealing your trade secrets or intellectual property during user research.

> If your ideas are any good, you'll have to ram them down people's throats.
>
> —Guy Kawasaki, *Rules for Revolutionaries*[2]

3. User research is a proper part of an iterative product design process.

   The first idea is never the best one.

> Churn, baby, Churn.
>
> —Guy Kawasaki, *Art of the Start*[3]

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Part II

DO A USABILITY TEST NOW

USABILITY TESTING: IT CAN BE A BEAR

USABILITY AND FUN!

MIS-USABILITY

DO NOT DO A USABILITY TEST NOW

IN DEFENSE OF FRIENDS AND FAMILY USABILITY TESTING

PLAIN LANGUAGE

2

USABILITY TESTING: IT CAN BE A BEAR

JANEA TRIPLETT

I was watching Fox News[1] the other night and just happened to catch a segment on product testing with bears. Yes, real, live, 500-pound grizzly bears! The report mentioned that the human–bear interaction problem had been escalating.[2] Two reasons were given: (1) the decline in wild habitat, and (2) the increase in readily-available fast food via neighborhood trash cans. You're probably asking, what does this have to do with human–computer interaction? Well, this seemed like a quirky way to drive home a point about the importance of user research and usability testing in product design. So "bear" with me as I draw the connections.

THE PROBLEM

For those of us living in Iowa, the human–bear interaction problem is far removed from our midwestern, agrarian worldview. The creatures invading our trash receptacles are the occasional crow, stray tomcat, or hungry raccoon. However, the American black bear[3] can be found in thirty-nine of the lower forty-eight states and the massive grizzly bear[4] inhabits four states. The consequences of human–bear conflict in these regions can result in harm to humans and, more often, destruction of the bear.

Once bears associate people with food, the conflict escalates. To address the problem, some homeowners built wooden cages to contain their trash, but these makeshift efforts proved no match for the burly bear. Manufacturers attempted to build sturdy trash containers. But these businesses soon lost credibility with consumers because the products were expensive and usually ineffective. State and federal agencies pursued catch-and-release programs, but the bears often returned.

A SOLUTION

Keeping the bears from wandering out of their wild habitat to engage in dumpster-diving was seen as one solution to the conflict.

The challenge for manufacturers was to design bear-resistant trash containers, but how? The only test of the product came after it was manufactured, marketed, and sold to the public.

The Living with Wildlife Foundation[5] partnered with four state and federal agencies to create an opportunity for product testing with live grizzly bears. In 2003, the program was officially launched and product testing began at the Grizzly Discovery Center.[3] A protocol[6] was written to specify measures to protect the bear from harm, to dictate the time of the test, and to certify the conditions under which the product passed or failed. Testing fees ranged from $150 to $250 and the testing times ranged from sixty to ninety minutes of bear contact. The interaction was photographed and video-taped for later analysis (view the BearSaver test video[7]).

Eight bears of varying size and talent were participants in the program. Manufacturers could test their trash containers, discover any weaknesses, and make modifications before the final product was sold to the public. This program assured consumers that their newly purchased trash receptacles had passed grizzly testing—literally.

THE HCI CONNECTION

In the human–bear interaction case study there were two competing audiences with very different goals. The human consumer wanted a product that was affordable, easy to use, and an effective deterrent. The bears, of course, wanted a product that was easy to break into so that they could get their delicious reward. The manufactures, being humans, could test the usability of the latches and locks. However, the "right person" to test the overall strength of the system was a 500-pound grizzly bear. Pre-market product testing benefited manufacturers, consumers, and the bears. (Though the bears might say otherwise!)

In addition to highlighting the importance of conducting user testing to solve product and usability issues, the case study also illustrated the aspect of fun in test design. Kuniavsky[8] alluded to this point by stating, "Then give them a present for their time, thank them, and send them on their way." The container testing program demonstrated that the tasks created to address the usability goals could also be enjoyable for the participants. The

grizzly bears used their best strategies and their natural abilities in order to solve a problem and they were clearly having a good time in the process. If the test failed, they won by cracking into the container full of fish. Even if the test succeeded, the bears still won by spending time engaged in a stimulating experience.

The connecting factor between what may seem like two unrelated interactions (human–bear and human–computer) was the importance of user research and usability testing. The complex problems associated with human–bear conflicts were being solved by directly involving the grizzly bear in product testing programs. Similarly, human–computer interaction challenges may be solved by conducting research and usability tests.

CONCLUSION

If they can do it with 500-pound grizzly bears, then we certainly can do usability testing with people.

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3

USABILITY AND FUN!

TRENT GROVER

The importance of fun is on the rise in almost all uses of information technology, but it is still a quality that is rarely discussed or measured within the context of usability testing. In her article, "Usability and Fun: An Overview of Relevant Research in the HCI Community,"[1] Charlotte Wiberg attempts to prompt discussion of this fact by summarizing the current state of HCI research as it relates to fun.

The author highlights the HCI community's focus on usability testing primarily for the functional aspects of a product or process (e. g., efficiency and number of errors), while often ignoring the distinctly subjective study of pleasure and fun. Though interest within the HCI community is growing, the study of fun remains severely underdeveloped for several reasons. These include the fact that the study of fun suffers from a shortfall of funding sources, there exist few established methods for evaluation of fun, and the absence of a conceptual or methodological tradition to build upon. Despite these difficulties, the author notes several studies in which more subjective measures of user experience, like beauty and fun, showed substantial impact on the participants' perception of usability.

Ultimately, the study of fun represents a key subject in the future of HCI research. There are a number of open questions that must be addressed, including:

- What is fun?
- How can we evaluate fun?
- How does fun relate to usability?

KEY POINTS

- Usability testing suffers by focusing solely on functional aspects of products and processes.
- Beauty and fun can affect the perception of a product's usability.

- The study of fun is a key subject for future HCI research.

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4

MIS-USABILITY

ELENA MAXIMOVA

Human–computer interaction is often associated with usability research. However, a clear definition of what usability is and—perhaps more importantly—what it is not, is missing from research papers written by academics and online blogs written by practitioners. In the paper "Mis-usability: On the uses and misuses of usability testing,"[1] R. S. Dicks tries to establish a common ground of usability by pointing out many possible misuses of usability concepts and what to watch out for when conducting a usability study.

Specifically, the author identifies five aspects or areas where usability testing may be misused:

1. Misconceptions of the usability term itself—conducting usability tests on "artifacts" that cannot be subjects in usability tests and gathering data on the number of usability problems instead of conducting empirical research.

2. Statistical problems—conducting usability research with small sample sizes and substituting usability research with "automated usability tests" (e. g., the number of visited web pages per user or the time spent per page)

3. Mistaken tests—confusing quality assurance tests with usability tests.

4. Misunderstanding of inherent limitations of usability testing—due to many variables that are involved and must be controlled during the usability test, the results may actually mislead researchers.

5. Testing for ease of use instead of usefulness—assessing the efficiency of a product instead of its "overall usefulness."

The most important things to remember when conducting a usability test are:

1. When conducting research with only five participants, a researcher should not extrapolate his or her results to a wider

audience or proclaim them as universal truth (it would not be scientific to do so even with a statistically significant sample size).

2. When conducting research involving human subjects, one must be very careful to select a sample that represents the right population for the conducted study. Unfortunately, this is very hard to achieve because sometimes the target population may be mis-identified or impossible to invite (for financial or other reasons) to participate in a test. For example, it may be as difficult to conduct a usability test with executive managers as with homeless populations (both are hard to get enrolled in the study).

3. It is really important for a researcher to understand whether his or her goal is to uncover some usability problems with a product or to understand how users can interact with this product in order to assess its overall usefulness, flexibility, and ability to evolve further. The latter is a more important test because the satisfaction from a product's usability does not come from a single factor, but from many different factors including an easy-to-use interface, an aesthetically appealing design, good supporting documentation, and a design that supports users with different levels of computer skills.

The other common misuses given by the author, including confusion of usability and verification testing and usability testing of "products" that lack usability characteristics, are short-lived trends associated with the hype that usability testing is currently producing in the HCI world.

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DO NOT DO A USABILITY TEST NOW

DERRICK PARKHURST

Mike Kuniavsky introduces the concept of Friends and Family Usability Testing in *Observing the User Experience*[1] as an "easy, fast, and highly effective" way to understand users and discover usability problems. This approach is an example of discount usability testing.[2] It can provide useful results without a whole lot of time, effort, or expense. The basic concept is to get five or six evaluators to use your product and give you feedback. Easy, but some preparation is required first.

1. Define the audience and their goals.

   Map your product functions to the needs of the targeted users as defined by their goals. Take for example an e-commerce website and a soccer mom. The website might provide comparison shopping, which would map onto the soccer mom's goal of saving money (at the expense of saving time).

2. Create tasks that address those goals.

   Map the functions onto tasks. In our example, that might mean asking the user to find the best T-shirt sale using the website. This step makes comparison shopping more concrete.

3. Get the right people.

   Get a hold of five or six "website evaluators" who characterize your audience. Because this is Friends and Family Usability Testing, we might invite our mother, mother-in-law, or spouses of friends to evaluate the e-commerce website.

4. Watch them try to perform the tasks.

   Seclude the evaluators in a warm, quiet place with a computer and the website, asking them to do a few tasks, and making observations while they do it.

   That is it. Usability problems solved! Right? Well, hold on.

A sidebar in *Observing the User Experience*[1] notes "Warning: Friends and family testing is fast, easy, and convenient, but it's a quick and dirty technique." What does this warning really mean? Is it like the warning label on a bottle of Windex—"Do not spray in eyes."—duh! Or is it like the warning on a pack of cigarettes—"Caution: Cigarette Smoking May be Hazardous to Your Health"—terribly understated. The latter I think.

Usability testing is dirty. Let's consider a few places where muck can creep into Friends and Family Usability Testing.

Step 1. Who are your users? Easy to ask, hard to answer. For example, who are the users for Amazon.com? The answer might be "everyone." Please all, please none. If you try to get around this by targeting a well-delineated user group, you might miss some important users. For example, the Macintosh was originally designed as a business machine for accountants, not a desktop publishing system for graphic designers.[3] An inappropriate user testing group represents a threat to external validity.[4]

Step 2. What if your product functions don't map onto user needs? How do you define tasks? This is a good and bad thing. Good because you don't need to do a Friends and Family Usability Test. Bad because you need to send the product back to the developers, with big cluestick. The product functions should map directly onto established user needs.

Step 3. There is an inherent conflict between "friends and family" and reality. When was the last time that your mom told you that your software sucked? Friendly users can lead to problems of internal validity.[5]

Step 4. When was the last time you used any website without listening to tunes, without having your cell phone ring, and in an unfamiliar setting with people watching you (from behind one way mirrors)? This is a serious threat to ecological validity.[6]

With all of these potential problems, what have we learned? We have learned that we need to spend more time on the design of a usability test before we learn anything about the usability of our product. Do *not* do a usability test now! Sometimes cheap (or free) can cost you more in the long run than paying up front.

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6

IN DEFENSE OF FRIENDS AND FAMILY USABILITY TESTING

KEVIN GODBY AND DERRICK PARKHURST

DERRICK: Who are your users? Easy to ask, hard to answer. For example, who are the users for Amazon.com? The answer might be everyone. If you try and please everyone with a design, you will end up pleasing no one with the design. If you target a well-delineated user group, might you not miss some important users? For example, the Macintosh was originally designed as a business machine for accountants not a desktop publishing system for graphic designers. This represents a threat to external validity.

KEVIN: It's difficult to determine who the users of a product will be. Testing the wrong users could prevent you from generalizing the test results to the general audience of the product. I agree with this. I disagree, however, in thinking that this should slow down or prevent usability testing. The audience should have been identified prior to the developers writing the software—during the design process. By the time you have software written for users to test, you will have a specified target audience to test.

DERRICK: Targeted users aren't always your end users. There is this great story that Guy Kawasaki (Apple's best Chief Evangelist) tells in his book *Art of the Start* about how Macintosh was originally designed as a business machine for accountants. However, the Macintosh spawned a revolution in desktop publishing! The majority of users were graphic designers, not accountants.

KEVIN: Understood. However, you won't know who the actual end users are until after you release your product. And since you're testing usability before you release your product, you're still working under the assumption that your product will be used by your anticipated target audience. Of course all of this assumes that you're doing usability testing on software that you wrote and designed. If you're testing someone else's software or if you're testing your own software after it's been released, then you will indeed have to determine who the actual audience is and test accordingly.

DERRICK: One solution is to conduct usability testing both

before and after you release the product. If the actual user group doesn't match the targeted user group, these later usability tests may be very important.

DERRICK: What if your product functions don't map onto user needs? How do you define tasks? This is a good and bad thing. Good because you don't need to do a Friends and Family Usability Testing. Bad because you need to send the product back to the developers and get them to create a product that does address user needs.

KEVIN: If the product functions don't map onto the user needs, then we've either designed the software incorrectly or programmed it contrary to design specs.

DERRICK: Sometimes we have a technology in search of a purpose, products designed by programmers or products designed by corporate edict. In these cases, it is obvious that product functions don't necessarily map onto user needs. You don't need to waste time and money conducting a usability test. Just send it back to the developers.

KEVIN: I'll go along with this. Of course, in a perfect world, the product wouldn't have gotten that far along without passing through the developers/designers. If only we lived in a perfect world.

DERRICK: There is an inherent conflict between "friends and family" and reality. When was the last time that your mom told you that your software sucked? This represents a lack of internal validity.

KEVIN: This is sometimes (but not always) true. If your friends and family are within your target audience, then they are viable test participants. They may not verbally criticize your software as much as disinterested parties, but you shouldn't be relying solely (or even primarily) on verbalization. Most users aren't accustomed to thinking out loud as they use software, so any information you gain from this will be qualitative anyway. The only quantitative information you'll obtain from the test will be based on the users' actions.

DERRICK: Conceded—this is not always true, but usually true. You have to ask yourself however, if your friends and family are unfamiliar with your product and can give you an unbiased

opinion, are they really friends and family? Might as well just recruit some strangers and avoid these problems.

KEVIN: Agreed. Strangers are good too.

In related news, users also have problems telling you that your software sucks if it looks like you've spent a lot of time on it. Joel Spolsky points out that "If you show a nonprogrammer a screen which has a user interface which is 100 percent beautiful, they will think the program is almost done."[1] Kathy Sierra took some of Joel's corollaries and wrote an essay saying, "How 'done' something looks should match how 'done' something is."[2]

DERRICK: When was the last time you used any website without listening to tunes, without having your cell phone ring, in an unfamiliar setting and with people watching you (from behind one way mirrors). This is a serious threat to ecological validity.

KEVIN: True enough. But ecological validity isn't necessary to the overall validity of the experiment. If it were, then we'd have to throw out most of the quantitative research that we're basing our design decisions on. For example, you do a lot of work with gaze tracking and gaze detection. Most people don't sit at home with a gaze tracker strapped to their head. Are the results that you obtain from these experiments invalid?

DERRICK: It is fairly reasonable to believe that strapping a heavy eye tracker onto your head will limit your head movements. This in turn may cause more or abnormally large eye movements. This is a clear threat to the validity of the experiment. However, a threat to validity does not mean that the conclusions drawn from the experiments are invalid. It just means that they might be invalid. Fortunately, my experimental results have been replicated using a remote eye tracker located away from the participant. Ecological validity is something that has always seriously worried me. That is why my eye tracking research has moved progressively from the laboratory, into simulators, into the real-world situations.

KEVIN: This is good to hear. With regard to usability studies, one should also keep in mind the Hawthorne effect—being observed can change the way a person behaves.[3]

DERRICK: Yes. The Hawthorne effect represents a threat to internal validity.

DERRICK: With all of these potential problems, what have we learned? We have learned that we need to spend more time

on design of our usability test before we learn anything about usability. Do Not Do a Usability Test Now! Sometimes cheap (or free) can cost you more in the long run than paying up front. Usability testing is dirty.

KEVIN: I agree that usability testing is dirty and often more complicated than what was presented in Chapter 2 of *Observing the User Experience*,[4] but I think the best take-away point is that you shouldn't let the specter of formal methodologies prevent you from doing usability testing.

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7

PLAIN LANGUAGE

VALERIE WILLIAMS

Written communication is still the first interface most people encounter when dealing with an agency, or a product. Making it usable (logical organization, easy-to-read design features, and easy to use) lessens frustration and increases use. Plain language is communication your audience can understand the first time they read or hear it.

The Plain Language[1] movement began around the middle of the twentieth century and gained momentum when Richard Nixon required that the Federal Register be written in layman's terms.[2] In 1977, the FCC issued regulations for Citizens' Band (CB) radios in the form of short questions and answers that are still being used today.

In 1998, President Clinton was "determined to make the Government more responsive, accessible, and understandable in its communications with the public."[3] He noted that in using plain language, we send a clear message about what the Government is doing, what it requires, and what services it offers. Plain language was to be implemented for new documents within six months and for all documents within four years and agencies were to "use customer feedback and common sense to guide [their] plain language efforts."[3]

Plain language requirements vary from one document to another, depending on the intended audience. Plain language documents have logical organization, easy-to-read design features, and use:

- common, everyday words, except for necessary technical terms;
- "you" and other pronouns;
- the active voice; and
- short sentences.

BEFORE

> Sec. 39.1 Applicability. This part prescribes airworthiness directives that apply to aircraft, aircraft engines, propellers, or appliances (hereinafter referred to in this part as "products") when—(a) An unsafe condition exists in a product; and (b) That condition is likely to exist or develop in other products of the same type design. [Doc. No. 5061, 29 FR 14403, Oct. 20, 1964, as amended by Amdt. 39-106, 30 FR 8826, July 14, 1965][4]

AFTER

> 39.1 Purpose of this regulation. The regulations in this part provide a legal framework for FAA's system of Airworthiness Directives.[4]

StyleWriter,[5] a plain English editing software program can be used much the way spelling and grammar checkers are used: to keep redundancies, obfuscations, and jargon out of communication to the reader.

Writing in plain language could cut paperwork by one-third, save money, and make everyone's life simpler and easier. Ordinary people should be able to understand what is said to them without having to study text closely or consult an expert. People should be able to:

- find what they need,
- understand what they find, and
- use what they find to meet their needs.

So, don't make up words, use more words than necessary, or run on your sentences. Use common words, logical organization with the user in mind, and easy-to-read design features. If people can't understand it, they can't use it. Check out the Plain Language[1] website for great tips and examples.

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Part III

BALANCING NEEDS THROUGH ITERATIVE DEVELOPMENT

ON DEVELOPMENT

THE SEVEN HABITS OF EFFECTIVE ITERATIVE DEVELOPMENT

USER EXPERIENCE TEAMS AND INFORMATION ARCHITECTS

IN AN IMPERFECT WORLD

WHY ITERATIVE DESIGN IS (SOMETIMES) POINTLESS

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ON DEVELOPMENT

DERRICK PARKHURST

WHO IS INVOLVED?

There are a number of groups at the table when it comes to designing a single website including the users, the client, and the advertisers. Each group has a different set of goals that are potentially conflicting. Therefore it is difficult (if not impossible) to satisfy all of the dinner guests. Some trade-offs must be made and it is the designer's decision to make those trade-offs. The users are looking for a website that meets their functional expectations ("I can make my purchase") with speed and accuracy ("Boy was that easy") and with satisfaction ("that was such a good experience, I think I'll always shop here"). The clients are looking to make money ("Ka-ching!") and gain clients through self-promotion ("Remember us the next time you need a widget!"). The advertisers want the user's attention ("Hey, look at me!") but ultimately want to influence the user's purchasing decisions ("I have to have one of those").

HOW DO WE HANDLE IT ALL?

Balance. Balance the needs of the dinner guests through iterative development. The standard linear development model proceeds from specification to implementation to deployment and forces each group in the process into a box, siloed off from one another. Iterative development is all about shared vision, teamwork, and cross-fertilization. Everyone is involved throughout the process and everyone owns the final product. Neither the design nor the implementation remains fixed. The implementation is flexible enough to handle changes in strategy due to evolving user needs or goals, or client goals. The design is adaptable and can respond to implementation limitations or opportunities from new web technologies.

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THE SEVEN HABITS OF EFFECTIVE ITERATIVE DEVELOPMENT

TRENT GROVER

In "The Seven Habits of Effective Iterative Development,"[1] Eric Cardozo effectively adapts Stephen Covey's *The Seven Habits of Highly Effective People* to the process of iterative development. Though iterative development theoretically solves many of the problems inherent in other product development methods, it must still be implemented correctly to be successful. Much of the weight of that effort falls on the shoulders of the project manager. Their action or inaction can doom any project. Here are some habits that can help ensure success:

1. Be Proactive—Produce a testable product at the end of each iteration and act when confronted with problems.

2. Begin With the End in Mind—Structure all project phases and iterations to meet specific product goals.

3. Put First Things First—Organize and perform activities according to their established priorities.

4. Think Win/Win—Satisfy a maximum number of business needs with a minimum of effort by prioritizing based on business need and technical risk.

5. Seek First to Understand, Then to be Understood—Understand all of the business objectives (What should it do? Why?), before thinking of solutions.

6. Synergize—A well functioning team is greater than the sum of its parts. Ensure that each team member has both a clear functional and team role with clear responsibilities.

7. Sharpen the Saw—Learn and improve throughout the project. Allow room for the product to evolve as the project progresses by not over-specifying in the early stages.

KEY POINTS

Project managers play a key role in making iterative development work, so:

- Understand the problem, before solving it.
- Be proactive and goal oriented.
- Limit project scope as necessary.
- Make sure the team member roles fit.
- Allow room for the project to evolve.

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10

USER EXPERIENCE TEAMS AND INFORMATION ARCHITECTS

MICHAEL OREN

I have to admit I kind of gave a bit of a groan when I found out that the first section of Chapter 4 of *Observing the User Experience*[1] dealt with information architecture (IA). I have this notion that IA is the domain of database administrators (DBAs) and a good DBA will know how to set up a database so that everything flows together in a logical way that fits the program. Of course, it makes sense that you can't do proper IA without first defining the program and determining how it should be used. It should also be pointed out that not all IA relates to databases; it relates to any program that uses data in any way. All of this made me think of two anecdotal stories which I'll share before going into my main topic of discussing an interview with Lou Rosenfeld and Steven Krug.

SOME ANECDOTES

So first I'm going to discuss this idea of IA and database design. In one of the first internships I had, I worked on a project based in Microsoft Access where I was tasked with designing a prototype for a new interface. I'm not going to go into the specifics about the project for various reasons, but the first thing that stood out to me while trying to build a working prototype (e. g., something that used the data already in the system, and not just a paper prototype) was the fact that the database was incredibly redundant.

The program was meant to divide the work into various tasks, with each task taking data from previous tasks in order to create the larger object. However, rather than having pointers or using inheritance for the object properties, each area of the task had its own database that was essentially a redundant copy of the other areas. This meant that if the user made a change to an information node in one section, this would then have to be copied to all the other sections that use the data. It was further problematic in

the fact that in talking with users, they saw the tasks as taking place in a hierarchical manner, while the data didn't flow in such a way. Having been forbidden from rearranging the database in a way that might have worked, I had to content myself with writing various SQL statements to copy data to the appropriate places and such to give the users the functionality they desired. However, even in doing this there were still some tasks that I was unable to accomplish in the limited timespan of the internship simply because of the problems working with the database. This was my first exposure to the problems that can occur when the database/IA design doesn't match the needs and desires of the interface or user.

My other anecdotal story is from my undergraduate computer graphics class. Our second project in the class was to write a solitaire program. Graphically, of course, this is extremely simple—a few rectangles, some text, and that's about it. The greater challenge in the project was in implementing the rules correctly, which of course involved setting up proper IA for the cards.

It quickly became apparent that there were two major groups of programmers in the class—those who just started programming right away without planning the program first, and those that planned the program first and then took a crack at the code. This was easily apparent because those in the first group spent days in the computer lab sweating over their code and trying to get it to work. Those, like myself, in the second group spent a few hours drawing out the data structure and running through it in our heads to make sure it had everything it needed to follow the rules, revising the data structure as necessary. Then the weekend before it was due, we went into the lab and spent a couple of hours writing the code, possibly tweaking it slightly if we realized a better way of using our data structure for the task. Those of us who had taken the time to plan it not only finished the project in less time (many of those in the first group turned the project in late), but we also managed to do it fewer lines of code and often had time to add small graphical embellishments to make it more interesting.

So this just shows, that not only is proper IA important for the users, but it is also crucial for programming. The few hours (or weeks or months for larger projects) it takes to plan out and create a design for a project before you write any code tends to be well worth it when you save twice that amount of time by not having

to rewrite it all because you didn't take into account exactly how the data would be used.

AN INTERVIEW WITH STEVEN KRUG AND LOU ROSENFELD

So now that I'm done with my rather lengthy anecdotes, I'd like to draw your attention to this interview with Steven Krug and Lou Rosenfeld about the term "user experience" and how it relates to IA and usability.[2]

The main gist of this interview is that the term "user experience" is extremely broad and encompasses a wide range of talents including IA, usability, design, brand managing, customer service, and others. This makes it very difficult for a single individual to become a user experience consultant or expert and suggests the creation of user experience teams. Such a team would require communication across all levels of a company and would therefore have to trudge through corporate politics to pull off. Perhaps this is why so few companies have made user experience a primary focus and instead opt to use consultants such as Krug and Rosenfeld. Hiring individual information architects, usability experts, etc. definitely improves the user experience, but without the integration through a user experience team, the benefits are limited.

CONCLUSION

User experience is critical for the success of products. Consumers and end users have come to expect an integrated, easy-to-use experience of web sites and applications. No single individual can perform all tasks necessary for user experience and a team needs to be created that takes corporate politics into consideration and properly balances the goals of the individual team members.

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11

IN AN IMPERFECT WORLD

JANEA TRIPLETT

The process of iterative development was offered as a solution which, if systematically followed, would allow teams to work through, to discover, and to balance the needs of the end-users, the company, and the advertisers.[1] Wait a minute! I'm even one of those glass-half-full types, but this goal seems overly optimistic. In this imperfect world we all know, as *Observing the User Experience* suggested, that the "biggest difficulty in implementing iterative development is creating a company culture."[1] I've seen many iterative development projects being thrown off their productive spiral by teams who struggle with power, politics, control, or conflict.

ORGANIZATIONAL CHALLENGES

What can be done if an organization's culture is firmly entrenched with dogmatic procedures and a staff that is resistant to change? An IBM article[2] addressed the challenges of overcoming cultural barriers in adopting iterative development practices. To summarize, most organizations intellectually recognized the benefits of using an iterative development paradigm, but in reality organizations experienced difficulty with implementing, practicing, and achieving sustainability. This statement was confirmed by a survey reported in the *IEEE Software Magazine*[3] which found that only thirty percent of software development projects used an iterative approach.

ORGANIZATIONAL CONFLICT

One source of cultural barrier is organizational conflict. Conflict can arise from structural issues, miscommunication, harmful behaviors, interpersonal differences, personal characteristics, negative history, difficult issues, and individual emotions.[4] What is important to realize is that not all conflict is the same. Not all conflict is bad. In fact, some conflict is really good for team

creativity.

There are two types of organizational conflict: cognitive and affective.[5] The good—cognitive conflict—is part of a properly functioning team. In this situation, team members bring different ideas and perceptions to the decision-making process. There may be issue-related disagreements. But these encourage innovative thinking and promote creative solutions. The bad—affective conflict—is found in dysfunctional teams. The clash between ideas is not issue-based, but is focused on personal matters. This bad type of conflict triggers distrust, hostility, or apathy which in turn lower the effectiveness of the team's decision-making process. The consequences of organizational conflict could be positive or negative depending on the type experienced.

CONCLUSION

As the IBM article summarized, iterative development can occur in organizations which value trust, collaboration, proactiveness, curiosity, empathy, and empowerment. As the organization sets out to change its culture, it is important to realize that conflict of the cognitive type can be a good thing.

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12

WHY ITERATIVE DESIGN IS (SOMETIMES) POINTLESS

MICHAEL OREN

Gerry McGovern wrote an interesting, although short piece about how "Iterative design can be lazy design" back in 2002.[1] Since chapter 3 of *Observing the User Experience* discussed the importance of using iterative design,[2] I thought this would be a good counterpoint to explore.

In his rant, McGovern expresses his frustration with this idea that everything must go through iterative design in order to make it the ideal user experience. He makes a very good point through his flawed analogy of what would happen if the automobile industry decided every car must go through the iterative design process: some parts of design have already been established and putting them through an iterative design process would be a waste of resources and very likely to drive your customers away. I say that the it's a flawed analogy because most of the issues he brought up as problems with iterative design for a car center around technical issues—not usability issues. A usability issue for a car might be having to take your eyes off the road to adjust the volume of the radio—that's a *big* problem for usability, and easily fixed by placing volume controls (with a distinct tactile feel) on the steering wheel. The problems he listed would be more equivalent to entering a word in a search box and getting results that have nothing to do with the search term (or they're only tangentially related).

Despite any weakness in his general explanation of the problem, his point is still valid. The web has been around long enough that there are established standards and best practices that should be followed in almost all cases. Using these standards help ensure that the user has a consistent experience between applications or web sites, making it easier for new users to get acclimated to it. There is no reason to re-invent the wheel every time a new e-commerce site is created. You wouldn't just arbitrarily decide to get rid of file menus and icons because the lack of consistency between the other applications on the operating system would disorient the user and make it difficult for them to use your appli-

cation.

Microsoft did this with the "ribbons" in Office 2007, but unlike most applications, Office is considered both a standard and a critical application for most businesses, so Microsoft has the strength to attempt to change the standard from menus and icons to ribbons. However, Microsoft screwed up in the fact that they did not have this paradigm seep into the Windows Vista system as well, since this prevents the ribbons from taking over as a standard and makes Office 2007's interface stick out like a sore thumb. Even if the ribbon does prove easy to use, there is likely to still be some level of user rejection since it requires them to relearn how to access features and functionality—not to mention the fact that they have to shift their thought process from finding something in a menu (by reading the options) to glancing over a series of icons divided into categories (graphically). The ribbons (being graphical in nature) may also have a negative impact on visually impaired users. Needless to say, for a major change like ribbons, one would hope that Microsoft implemented an iterative design process. Early user response about it seems to suggest that while it's a hassle for those familiar with the old system, they did build something in there for the "legacy users," which does seem to suggest some form of iterative design was used to discover the need for "legacy" functionality.[3]

TAKING IT HOME

Iterative design is an excellent tool to keep in your toolbox for designing user-centered applications and web sites, but it's important to understand that certain design principles and application/web standards already exist to simplify the process. You shouldn't just blindly rely on iterative design to create a web site, application, or product. User testing, of course, is always recommended no matter what, but there's no reason to waste resources constantly testing something that's just doing the same thing in the same way as existing offerings.

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Part IV

THE USER EXPERIENCE

ON THE USER EXPERIENCE

WORDS AND THE BRAIN

MAXIMIZING HUMAN PERFORMANCE

BRAND MAGIC: THE IMPORTANCE OF COMMUNICATING BRAND IDENTITY

DESIGNING FROM BOTH SIDES OF THE SCREEN

STANDARDIZATION IS FOR INSECTS

HOW TO SPOIL YOUR RELATIONSHIP WITH THE USER, OR PLEASE INSERT THE CORRECT CD-ROM, SELECT OK AND RESTART THE APPLICATION

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ON THE USER EXPERIENCE

DERRICK PARKHURST

WHAT IS USER EXPERIENCE?

> . . . nearly everything in someone's interaction with a product.
>
> —Mike Kuniavsky, *Observing the User Experience*[1]

Good, but can we be a bit more specific?

> . . . how the product behaves and is used in the real world.
>
> —Jesse James Garrett, *The Elements of User Experience*[2]

Better, but where is the user?

> . . . what your users think of themselves as a result of interacting with your creation.
>
> —Kathy Sierra, *Creating Passionate Users*[3]

Excellent, but how can we make this happen?

THE USER-CENTERED DESIGN PROCESS

Jesse James Garrett has provided a conceptual framework for user-centered design in his book, *The Elements of User Experience*.[2] The framework is an abstraction that consists of five planes. Each plane describes elements of design that contribute to the overall user experience. While Garrett derived and applies this user-centered design framework to websites, it can be used to design any type of product.

Strategy

The strategy of a design focuses on identifying user goals in order to specify the objective of the site. There are different types of user goals that must be considered, including experience goals (e. g., I don't want feel stupid using the site), life goals (e. g., I want to kick ass using the site), and end goals (e. g., find a great price for a camera). In the determination of user goals, it is necessary to consider the variety of potential users. Different users will have different goals and it is impossible to help all users achieve all their goals. Instead the design must selectively target particular users and particular goals. All other design decisions are influenced by the strategy, and thus determining this strategy is the first step in the design process.

Scope

The scope of a design identifies the content and functionality required to accomplish the objectives of the site. There are often many ways to accomplish a set of objectives, each with a different set of advantages and disadvantages. For example, Yahoo and Google have fundamentally different ways of acheiving the same objective, that is, to direct the user to desired content. Yahoo organizes web content into a heirarchical directory of organizational terms (e. g., Entertainment → Actors → Dog Actors → Lassie) and allows users to navigate through this structure one level at a time. This structure is particularly useful when the user is in search of content that is not necessarily well specified. Associated or related content is made explicit in the structure. On the other hand, Google directs the user to web pages based on user specified search terms. Directed search implicitly uses the structure of web content, but hides this structure from the user. The primary advantage of this functionality is to speed the user to the desired content when they know exactly what content they are interested in and how to specify appropriate search terms. Site content and functionality directly affect the usefulness and indirectly affect the usability of a site.

Structure

The structure of the web site is larger than any single page. It is determined by the organizational structure of the site content and the navigation methods used to interact with that content. The structure of a site is not immediately apparent to the user. Instead, the structure must be discovered by actively navigating through the site. The structure of the site is also important in determining the usability of a site. There are many ways of organizing content on a site, only some of which will be consistent with a user's mental organization of that content. Logical or ordered organizations, for example, the Dewey Decimal Classification System, may not map onto a user's mental model. In fact, mental models are decidedly non-logical, and tend to over-represent recent and extremely frequent information. Matching site structure to the user's mental model of the content can increase site usability and content comprehension.

Skeleton

The skeleton of the page represent the rigging for both the content on the page as well as the functionality of the page. The accessibility of the content and the usability of the content navigation are determined by the type and arrangement of interface elements on the page. The skeleton of a page is an important determiner of user experience because it is almost as visible to the user as the surface. The skeletons of highly used designs are implicitly learned by users. For example, consider that tabbed navigation is almost universally applied at the top of a webpage. When a site violates this convention, the user can become easily confused. Consequentually, the skeleton plays an important role in determining usability.

Surface

The surface is the first thing that a user notices about a product. Aesthetics and visual identity contribute to the surface of the interface. The surface defines how the content is arranged on the page and how the elements of the visual design look and feel. Surface elements often take priority in determining first impressions and

thus play an important role in product sales. For example, the aesthetic of Apple products is unique and immediately identifiable. As a result, the visual and brand identity is strong. While the surface is the first element to reach the user, it is the last step of the design process. The surface can be most easily changed without influencing other design decisions.

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14

WORDS AND THE BRAIN

JANEA TRIPLETT

When conceptualizing the structure of a website, its most basic elements—words—should be examined and dissected. Pick any word on a website that is trying to communicate an idea or an action. That word may have ambiguous and multiple definitions. Take the word "slip." I saw that word on Amazon.com along with thumbnail images of comfy, warm slippers. The caption read, "Slip into something comfortable."

Slip. It's a short word and it's easy to pronounce. It's also cleverly complex. According to dictionary.com,[1] the word slip returned fifty-seven known definitions and usages. I was surprised, too! This seemingly simple word can serve as a verb without an object (e. g., "The years slipped by."), as a verb with an object (e. g., "He slipped the lock."), or as a noun (e. g., "A slip in prices."). What about context? Context should help clear up any confusion. Well, as neuroscience is showing the answer is yes and no.

NOUNS, VERBS, & AMBIGUOUS WORDS

Researchers from departments of cognitive science and neuroscience tested brain responses[2] to nouns, verbs, and class-ambiguous words in context. Four types of word classes were examined—nouns, verbs, ambiguous words, and pseudo-words. The authors defined the ambiguous class as English words that could serve the role of either noun or verb depending on the context of the sentence (e. g., drink, paint, hammer).

Volunteers were fitted with electro-caps which measured positive or negative voltages to test stimuli. The volunteers were asked to read sentences for comprehension while their brain responses were recorded. Some sentences used unambiguous nouns in their proper context while other sentences used nouns where a verb should have been used. Class-ambiguous words were also tested. In this case, the sentence context clearly placed an ambiguous word in the proper class of noun or verb. (e. g., verb class, "He prepared to paint.").

The experiment found that nouns and verbs produced different brain activity patterns. When looking at class-ambiguous words, the authors noted that the "difference [was] particularly striking." Even when an ambiguous word was used in its proper noun or verb context, the brain patterns were very different than those of unambiguous word classes. The authors concluded that ambiguous words "constitute another class of lexical items with a distinct neural representation."

CONCLUSION

Linguists, cognitive psychologists, and neuroscientists are beginning to uncover and answer questions about the human brain. Information architecture can be strengthened by looking to this research to better understand the complex interaction between words and the brain.

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MAXIMIZING HUMAN PERFORMANCE

TRENT GROVER

One of the most important aspects affecting the user experience of a product is its overall performance. Does it work fast enough and cheaply enough to satisfy? We can easily break overall performance down into machine performance and user performance. Machine performance is the realm of engineers. They are constantly focused on speeding up processing, increasing efficiency, and reducing the cost per transaction.

Though developers tend to focus on machine performance, user performance is actually much more important. You can always throw more hardware at machine performance problems, but user performance problems are trickier to address and end up wasting much more money in terms of repetitive labor costs and lost time. In his article, "Maximizing Human Performance,"[1] Bruce Tognazzini breaks down several techniques for improving user performance through thoughtful design.

Generally, user performance can be improved by reducing the need for user decision making, enabling the machine to gather its own data, optimizing necessary machine manipulations, and speeding up the user's perception of time.

OPTIMIZING MACHINE MANIPULATION

- Consciously eliminate as much machine manipulation as possible, both on the gross level (Could this be done on one screen instead of two?) and the fine level (Is this keystroke/mouse click necessary?).

- Ensure that the machine manipulation matches the task model of your user base. If a soccer mom is buying a camera, she probably only wants to point and shoot. On the other hand, a professional needs to have complete control over exposure, aperture, and other settings.

DECREASE DATA ENTRY

- Minimize/eliminate as much user-entered data as possible. Often, previous records are available that contain a lot of repetitive information. If those records are up to date and accurate, use them to fill in information for the user.
- Careful consideration should also be given to whether the information is inferable from known data or findable by some other means. Instead of scanning and analyzing documents, is it faster to type in the data? Is the document available in digital form elsewhere?

LIMIT DECISION MAKING

- Never use the user as a "rules engine," merely repeatedly reporting decisions that were previously made.
- Evaluate each remaining decision to ensure that it's still necessary and don't ask questions that pertain only to the machine.
- If possible, provide the user with any information necessary to make decisions quickly and accurately.
- Remove extraneous material that makes it difficult for the user to find the correct path to their goal (extra web links, buttons, etc.). Often, rarely used advanced options should be hidden away where the few who want them can find them.
- Use language and visual design that ensures that all questions are clear, as well as their expected answers.

SPEED UP PERCEIVED TIME

- Spawn background tasks if further user interaction is not necessary to continue.
- Keep the user busy by giving them something to do (read up on their next task) or watch (spinning icons, status bars, etc.).
- When in doubt, perform user tests to evaluate the user's perception of time because it is often dead wrong.

KEY POINTS

- User performance is of utmost importance in user-necessary products.
- Thoughtful design can result in simple, hardware-independent improvements of user efficiency (less frustration and more user satisfaction) by:
  - Reducing the need for decision making
  - Enabling the machine to gather its own data
  - Optimizing necessary machine manipulation
  - Reducing the user's perception of time

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BRAND MAGIC: THE IMPORTANCE OF COMMUNICATING BRAND IDENTITY

ELENA MAXIMOVA

Even though Mike Kuniavsky in *Observing the User Experience: A Practitioner's Guide to User Research*[1] asserts that "brands are incredibly powerful parts of the user experience and can color users' expectations to the point that all other factors virtually vanish," he leaves the discussion of brands' influence on user experience out of the book. In my opinion it is worth discussing at least because: (1) a company's brand identity influences the design of all its products (including the website, software, packaging, etc.), and (2) in most cases, brand identity is a more influential factor in purchasing than the quality of product itself. Therefore, it makes sense to add product's brand identity as yet another variable when analyzing the user experience.

UNDERSTANDING THE CONSUMER–BRAND RELATIONSHIP

Why do consumers value brands?

- Brands make the consumer's choice easier
- Brands help consumers in expressing themselves
- Brands bring the promise of a quality product
- Brands deliver emotional benefits (e. g., satisfaction of being part of a global community, being able to share identity with like-minded people, and comfort)

All these benefits provided by strong brands to the customers are returned back to the companies as consumers' brand loyalty and, hence, increased revenues.

There is a question of what is more important in brand management: actual functional distinctions, such as innovative products, or perceived uniqueness. Unfortunately, the perceived characteristics of a product become more important than the functional characteristics. As Alexander Biel argues in his article "Discovering Brand Magic: The Hardness of the Softer Side of Branding,"[2]

functional innovation does not guarantee a competitive advantage for a sufficiently long period of time (because it is easy to imitate) while "image and personality of the brand, and the quality of the relationship between the brand and the consumer" create perceived value for the consumer that touches him on a more emotional level so that it is harder for competitors to imitate. For example, Microsoft's new operating system, Vista, closely imitates most of the functionality of Apple's OS X. However, for many consumers around the world, Microsoft's promises of innovative design for higher productivity, greater ease of use, and increased entertainment experience are communicated better than Apple's.

POINTS TO REMEMBER

Brand is a company's intangible asset that can have a dollar value associated with it.[3] An interesting study[4] conducted in the UK market by the Design Council in 2004 suggests that companies that are design-oriented or effectively use design, including branding design, outperformed the FTSE 100 index over the period of ten years by 200%. Usability practitioners, therefore, should not leave brand identity outside the scope of their research.

Product functionality is important but communication of a product's identity to consumers is even more important—it creates added value and helps strengthen consumer–brand relationship.

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DESIGNING FROM BOTH SIDES OF THE SCREEN

KEVIN GODBY

Here are a number of user interface design guidelines from Ellen Isaacs and Alan Walendowski's book *Designing from Both Sides of the Screen: How designers and engineers can collaborate to build cooperative technology.*[1]

The guidelines in the book fall under four basic tenets:

- On being a butler
- Don't impose: respect physical effort
- Don't impose: respect mental effort
- Be helpful

ON BEING A BUTLER

Software should act like a butler. It should always be available. When asked to do something, it should be prepared to do it with few questions and no complaints. If there is a problem, it should find a way to fix it or work around it without bothering the user. (Also, it should have an English accent.)

Software shouldn't disturb the user by interrupting and suggesting ways it can be helpful. Instead, it should pay attention to what the user has done in the past so that it can better anticipate what the user will want in the future. However, software shouldn't go overboard in anticipating the user's needs because it is more costly to do something the user doesn't want than to not take the initiative. *Software should be courteous and respectful—even when the user asks the software to do something it can not do.*

DON'T IMPOSE: RESPECT PHYSICAL EFFORT

Treat clicks as sacred. Clicks include mouse clicks, keyboard presses, taps on a touchscreen, button presses on a physical device, and voice commands. Require as few clicks as possible.

Remember where users put things. Remember everything users do to adjust the application. The next time they come back, everything should be just as they left it.

Remember what they told you. This one's easy: don't ask people for the same information more than once. If they update their information, remember the updated information.

DON'T IMPOSE: RESPECT PHYSICAL EFFORT

Make common tasks visible and hide infrequent tasks. Determine the most common user tasks and make sure they are visible and easily accessible. Hide less common tasks so they don't clutter the screen and make it more difficult to find the common tasks.

Give feedback and show signs of progress. Acknowledge the user's request and, if you can't comply immediately, let them know what you're up to and how long it will take. If a command can't be carried out quickly, let users interrupt.

Keep preferences to a minimum—provide smart defaults. Most users never modify the default preferences, so the application's default behavior is effectively the only behavior.

BE HELPFUL

Offer sufficient information early, in context. Prevent errors. Indicate which information is required, what format is expected, etc. Try to prevent errors whenever possible.

Solve problems—don't complain or pass the buck. Don't bother the user with problems you can solve yourself. If you can tell the user how to fix the problem, try fixing it yourself.

Be predictable. Develop a set of conventions to use throughout your application. Users should be able to predict what a feature does based on their knowledge of what the other features do.

Request and offer only relevant information. Don't mislead. Don't offer options that are not available. Ask for information only if and when you will use it (and then remember it). Never collect and then ignore sensitive information.

Explain in plain language. Avoid jargon. Don't blame the user. Indicate the consequences of options.

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18

STANDARDIZATION IS FOR INSECTS

VALERIE WILLIAMS

Paul Murphy in "Standards v. Standardization"[1] looks informally at fundamental human behaviors and says the bottom line is simple—standards adoption works for the customer.

Whether the consequences of those standards are expressed in data services or delivery services doesn't matter. What matters to the user, for example, is that they receive their packages on time, or that they don't get bumped off a website. This functionality is the result of standards. Standards are necessary for hardware manufacturers, suppliers, and designers. For example, if a certain kind of line represents the ground on electronic chips, then everyone using the circuit needs to understand this fact. For ease of use, a designated body sets this standard for everyone. Competition, buyer choice, and technical progress result when industry develops such standards.

On the other hand, Clay Shirky in "Interoperability, Not Standards"[2] makes the case for interoperability—systems that can access resources or functions of other systems. Interoperability is looser than a standard but allows for some of the same user benefits.

Standards require group definition, but interoperability only requires conversation to occur between developers. Interoperability is more flexible and anyone can participate. Groups can develop projects on their own and selectively collaborate to assure interoperability for all systems, or only for relevant systems. This interoperability protects the uniqueness of a developer's product while still delivering a more usable product for the consumer.

If standards are set too early in development, the critical period of conceptualization enabled by the conversation between developers is lost. Setting standards should follow, not lead, development and testing in the real-world. Interoperability will result in and enhance the eventual development of standards. To have standards, you need a designating body. To have interoperability, you need conversations between developers.

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HOW TO SPOIL YOUR RELATIONSHIP WITH THE USER, OR PLEASE INSERT THE CORRECT CD-ROM, SELECT OK AND RESTART THE APPLICATION

ELENA MAXIMOVA

Suppose everything went smoothly: you created great and even innovative software and usability tests showed that potential users will be satisfied with it (i. e., it is easy to use, effective, and efficient). Does it mean that you created a usable product? Not necessarily. It can all go wrong with the release of your software. What I mean is that a usable software product is not necessarily a usable software end-product.

Have you ever bought software that does not run without its CD in the CD drive? I have. I bought some educational software packages and games for my son. Using that software is really frustrating. First, you have to install multiple disks, then you have to use one of those disks for the program to run, and that is the most frustrating part. Here are some of the problems I had:

- Disks get easily scratched (especially if used by a child) so the whole software that I bought may suddenly become unusable and I would have to buy a new one for another $50.

- Some of the CDs will not load on certain CD-ROMs. I have four PCs of different ages at home and one of those (the newest one) does not want to load Civilization III Complete but works fine with Civilization III Play the World even though both games have the same system requirements. If I had only one PC I would end up with $40 of worthless software which is not returnable but only exchangeable for the same title software.

- All of my software that runs from CD-ROM has a tendency to stop working suddenly. Programs close without any warnings. I do not care much about the lost games but my child gets really upset.

- When I use software that runs from CD-ROM it occupies the only CD-ROM drive I have on the PC, so I am inevitably deprived

of the opportunity to use CD drive for other tasks (e. g., reading or copying from CD or writing to CD).

KEY POINT

Unfortunately, even in user-centered design the user is not always a winner because user-centered practice stops wherever the copyright law is in the place. Usability is overrun by the copyright protection laws, which sometimes makes good products hard to use. I am not against the idea of copyright per se, but there is should be some reasonable limit to the organizations' fear of losing that extra profit. If someone wants to get an unauthorized copy of a game he or she could download it through various peer-to-peer networks without any copyright protection, so if I buy a legal copy for $50, I want to have at least the same amount of comfort when using this software as those who download it illegally.

Part V

THE RESEARCH PLAN

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PLANNING IS ONLY ONE PIECE OF THE PUZZLE

JANEA TRIPLETT

The old adage, "failure to plan is a plan for failure," is a beloved phrase in business speak. It sounds good. But, if planning were all it took to realize the prize, then why do so many well designed projects continue to fail? I've worked on web projects for industry and government clients long enough to know that catch phrases oversimplify many situations. In this complicated world, a well drafted plan is only one piece in the productivity puzzle.

I ran across a *Harvard Business Review*[1] publication which gave a big picture view of planning. The article, "Turning Great Strategy into Great Performance,"[2] lamented that even the most fantastic plans don't always materialize into happy endings.

PLANNING PITFALLS

When great plans fizzle, it can be difficult to know where to point the blame. It could be poor planning, poor execution, both or neither. This dilemma was referred to as the strategy-to-performance gap.[3] In a survey of 197 financially successful companies, researchers asked senior executives to articulate how they were able to transform strategies into great performance.

Common pitfalls were identified across industries as diverse as banking, IT, and pharmaceutical. When a well drafted strategy did not deliver its promised performance, the contributing factors were:[2]

1. Poorly formulated plans,
2. Misapplied resources,
3. Breakdowns in communications, and
4. Limited accountability for results.

The authors warned that not only did the strategy-to-performance gap result in financial loss; it also fostered a culture of

underperformance. Unrealistic plans set in motion a contagious and viscous cycle of unfulfilled commitments by those who expected failure.

PLANNING + EXECUTION = PERFORMANCE

The gap can be closed. The authors pointed to the practices of high-performing companies who simultaneously focused on planning and execution. Planning was not cooked-up in one organizational silo and then handed off, half-baked, to another division to act upon. The activities of planning and execution occurred on a continuum. Seven rules were offered that, if followed, would assist managers in determining if the performance gap was due to the organization's strategy, its plan, the execution, or human capital shortfalls.[2]

1. Keep it simple
2. Debate assumptions
3. Speak a common language
4. Discuss resource deployment early
5. Clearly identify priorities
6. Continuously monitor performance
7. Reward and develop execution capabilities

The rewards for following these rules were twofold—not only would an organization close its strategy-to-performance gap, it would also develop a culture of overperformance.

CONCLUSION

Planning is good. But, planning without execution will lead to failure. Great execution is as critical as great planning. Both activities are key elements in an organization's overall strategy and performance.

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21 ON USER EXPERIENCE RESEARCH BUDGETS

MICHAEL OREN

"The Research Plan," covered in chapter 5 of Mike Kuniasky's *Observing the User Experience*,[1] closes on the topic of budgets and presentation of the research plan. However, it seems to glaze over the politics sometimes involved in obtaining the budget and equipment necessary in a corporate environment, where the benefits of user experience research are not always fully understood. The HCI web comic, *OK/Cancel*, illustrated this problem nicely in the strip "Extreme Budget Usability."[2]

While the strip is meant to be satirical, illustrating what some user experience specialists have to work with at companies with limited user experience budgets, the real situation is sometimes worse: companies have no budget for user experience research and no HCI professionals to fight for the user goals, as opposed to the technical or marketing goals. In these companies, the topic of budget tends to be critical to the adoption of user experience research and user centered design. Companies tend to focus on the bottom line and focusing on the bottom line means that they need monetary justification for hiring a user experience consultant or full time employee to conduct user experience studies.

Since this has been a critical problem in our field, there have been several books, papers, presentations, and even some brief FAQs on the topic—a collection of which can be found on the Usability Professional Association's web site, where they discuss selling usability.[3] There are some longer articles there for those interested, but essentially the arguments can be summed up by a FAQ at Usability FAQ:[4]

> Does an investment in usability really pay for itself? Yes. Think of it as a trickle-down effect.
>
> Take a minor problem that might take a team a day to recognize and fix early on in the design. If the problem remains in the final product you get:
>
> 1. designs that you have to re-design later, taking weeks or months

2. bad designs that simply stay in place because they are too hard to change
3. new features have to build on an unusable foundation and hence have decreased usability
4. increased customer support calls
5. potentially lost sales due to unhappy customers or competition which is more usable
6. increased maintenance costs
7. increased training time which your customer unhappily pays

Costs of usability engineering include:

1. salaries
2. hardware
3. test participants
4. travel

Cases of cost-justification:

1. There are daily instances of web sites improving usability for increased sales, repeat customers, increased advertising, better reputations, etc. IBM recently reported that sales went up 400 percent with an easier to navigate site.
2. Telephone companies regularly report savings in the millions for shaving seconds of usage times.
3. Australian insurance company had annual savings of A$536,023 from redesigning its application forms to make customer errors less likely.
4. Major computer company saved $41,700 the first day the system was in use by making sign-on attempts faster for a security application.
5. Improvement of a Boeing 757 flight deck interface to allow for only two pilots instead of three.

To make the short version even shorter: companies save money by not wasting money on bad design.

THE BOTTOM LINE

Rather than viewing user experience research as a cost that negatively effects the bottom line, corporations should view it as a way to boost revenue. When a user has a good, let alone a great, user experience s/he is much more likely to come back to a web site or application again. Not only that, but users also tell other users about their user experience leading to increased sales—one needs only to look at the Apple iPod or Nintendo DS to see the power of word of mouth advertising based on good user experience. However, most corporations probably won't discover this on their own and HCI professionals need to evangelize for the user experience and bring the facts about the fiscal benefits of user experience research.

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22 SILENCING THE USER RESEARCH NAYSAYERS

TRENT GROVER

Designing a user experience research plan is a great idea, but in *Observing the User Experience*,[1] Kuniavsky presents it under some rare conditions. He assumes you're working in an organization that has already deemed these types of research to be beneficial enough to plan development around them or in tandem with them. Even if management has signed off, it's never safe to assume that everyone else down the line has done the same.

Even though few companies actually believe user research is a bad idea, they often skip it for a wide array of reasons. Nearly every potential stakeholder within an organization has a different reason to avoid user research. Here's a quick list of some of the myriad of excuses you can expect to hear:

- We already know our users
- We can't find users to test
- Past research wasn't useful
- We don't have the resources

WE ALREADY KNOW OUR USERS

- Management—"I've been in the business for 20 years. I know what the user needs."

  Management knows what they need to do their jobs, but they are not product designers, and often aren't going to be the end users. No executive at Apple knows what a Japanese teenager wants from an iPod.

- Creators—"We have a creative team with great technology. They can design a great product."

  Creativity and technology provide solutions, but they still need to answer a real problem or it will never be used.

Unless your creators are representatives of the target audience and are devoid of quirky behaviors or preferences, the product won't meet the goals of the users.

- Experts—"We've got experts to tell us what we need."

  Experts are useful for providing baseline knowledge about your target market or audience, but experts aren't experts in all areas.

  You shouldn't rely on general or public knowledge about users or markets when making decisions. You must learn more about your users than your competitors.

WE CAN'T FIND USERS TO TEST

- Novelty—"Our product is completely new. There's nobody to analyze."

  If your product is not related to any existing products, there's a good chance that users won't understand or use it.

  If you don't understand how users currently solve your problem, there's no way to know if your solution is better.

- Secrecy—"Our project is top secret. We can't approach future users."

  Even top secret products need to be optimized. Try to find trustworthy users.

- Ubiquitous User—"Everybody will use our product."

  A small sample of everybody is better than nobody. A thorough understanding of 10 users is more useful than statistics on 10,000 users. Stats tell us how often something happens, not how or why it happens.

  It's possible to target users who are representative of a large number of other users (span multiple target audiences, etc.).

  Few products are actually used by everybody, so focusing on smaller target markets is more likely to be successful.

  You don't have to know every user on the first release. Knowledge can mature as the product matures.

- Busy Users—"Our users are too busy to help us."

  They can either spend some time helping you now or spend time struggling with a product that doesn't meet their needs.

PAST RESEARCH WASN'T USEFUL

- Academic—"We're not a university, so why are we doing research?"

  User research differs from scientific research in its goals and methods. It is focused on meeting product design goals, nothing more. Timing and costs are modified to meet development demands.

- Designers—"The designers never looked at our past research."

  Designers are more likely to internalize user research if they participate or perform the actual research.

  This has the added benefit of ensuring that product design goals reign over the research performed.

- Marketing—"We've done market research. Isn't that enough?"

  Market research is not the same thing as user research. It shows how often something happened in the target audience, but doesn't help you understand how or why it happens.

- Ignorant Users—"Users don't know what they want."

  User research is not about asking the users what they want. It's about understanding how they work and the problems they encounter.

WE DON'T HAVE THE RESOURCES

- Schedule—"We don't have the time."

  User research can be scaled down to the size of the project. A short analysis is better than none at all. First mover advantage only applies to products that the users actually use.

  User research actually saves development time by reducing guesswork, re-work, and blind exploration.

- Budget—"We don't have the money."

  The cost of learning something "you didn't want to know" early in a project is much less than learning it after the product is launched.

KEY POINTS

Even though organizations quickly and easily spew excuses for ignoring rigorous user research, all of these can be answered just as rigorously:

- You don't know your users as well as you think you do.
- You can find plenty of users to test.
- You can make user research useful to your development efforts.
- You do have the resources to turn user research into successful products.

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23

WHO IS THAT "YOU" PERSON?

ELENA MAXIMOVA

Throughout the book *Observing the User Experience: A Practitioner Guide to User Research*,[1] the author addresses all his recommendations to someone called "you," and all we explicitly know about that person is that he or she is "a practitioner." A similar "you" person exists in many other guides for project development and usability research as well. What else do we as readers know about that person? We know that she or he must perform many specific and complex tasks in order to succeed in a project (in our case it is a usability research project). For example, Chapter 5[1] was devoted to the research plan: "you" should identify issues, transform them into goals, prioritize those goals, create schedules and a budget, overcome communication problems. All these tasks, if followed, make "you" really busy and devoted to the process of resolving multiple communication problems and misunderstandings between various groups and departments. Why would "you" want to have such a headache? Probably "you" have a real passion or commitment to an idea or a product so he or she is willing to sacrifice the comfort of just following responsibilities in his or her job description.

So who is that mystery "you" person anyway? "You" are a leader—a person who has a source of personal power to inspire others to share his or her commitment to the idea or project.

Why is it important to find a leader for a project? Here is a lesson from history. Thomas Carlyle wrote that "the history of the world is but the biography of great men."[2] Even though there are a lot of critiques of his theory, it is hard to separate, for example, good and evil events that happened in the twentieth century from the political leaders who guided them. Winston Churchill and Franklin Roosevelt, Adolf Hitler and Vladimir Lenin, were successful in most of their deeds (good or evil) because they were able to recognize the socioeconomic and political situation in their country and in the world, create and prioritize the goals, find and create followers, get resources, and assign tasks. In other words, do everything a leader needs for successful planning and execution of a project. Fortunately, the good eventually defeated

the evil, which in most cases restored political balance.

What is the take-home point? Recognize "you" in you:

- Does the idea or the project fascinate you?
- Do you have enough expert and/or referent power to make others share your point of view and work as hard as you do?
- Do you recognize political forces inside your organization and have an idea of how to manage them?

If you answer "yes" to all of the above questions, you may become a driving force that would bring your project to a successful completion.

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PRODUCTION BASICS

VALERIE WILLIAMS

Every time you are in front of people, you are engaging in a piece of theater. When you present information, you are also presenting yourself. Not only do people treat you the way you present yourself, but they generally believe what they see. So you better be sure you're "saying" what you intend to "say." Theater folk generally control every aspect of a performance, from the setting (including lighting) to the acting, to shaping the dynamics of the show. Moderating or observing a focus group is very much like putting together a theatrical production, and if it's good theater it's probably good testing.

The bottom line is always:

> How do we get from idea to audience?

First, everyone does their own preparation and research. In initial meetings, we listen to the pitch, discuss the producer's and director's visions and ideas. We brainstorm, present our own versions of the vision, and eventually settle to a collectively agreed upon vision. We plan what the audience will see and hear, experience, and how they will feel during and after the show.

So who does what?

The producer is in charge of putting up the production including fund-raising, hiring, bookkeeping, accounting, PR—-the business end of of the production.

The director is in charge of the overall dynamic of the production; balancing all elements of the production; responsible for the overall vision.

The casting director finds the talent (anybody who is on the stage). The production manager makes things work: negotiating with locations, catering, traffic control, and more, but most of all, keeping track of what everyone is doing so that the project is coordinated.

The sub directors include the choreographer, the composer, the costume, set and lighting designers, the writers. They are in charge of making the dances, composing the music, designing what the

audience sees. Their vision is important, but is subservient to the director's.

The talent is in charge of learning dances or lines, preparing a character (including the physical character and vocal tone), and coordinating/balancing that character with the other characters.

Treat any performance the way a production team does—-research your end of the production, control the setting, know your lines well enough to improvise in case something changes unexpectedly. Understand that you are treated the way you present yourself and never, ever, talk down to the audience.

Practice doesn't make perfect—-perfect practice makes perfect. Decide what you want the audience to see, whether it is a product, neutral language, or a dynamic individual, and then practice before the show starts.

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BRAINSTORMING

VALERIE WILLIAMS

Brainstorming seems like the simplest thing to do—think of some ideas. But thinking, true thinking requires discipline—and practice. Brainstorming can be done individually or in groups and is an excellent way to generate new ideas, think creatively, focus ideas, and renew the brain and mind. The following are some techniques for brainstorming, culled from the knowledge and experience of several individuals.

Kelly Boon, founder and director of pARTners,[1] physically, emotionally, and intellectually takes people outside their usual environment. She gives them red noses to wear; masks, costumes, theatrical situations, poetry, writing assignments and more all serve to literally and figuratively disarm people enough to shock them to different thought.

Stimulation works. I attend museums, exhibits, concerts, lectures and find that others' ideas stimulate my brain to jump-start the connections that bring new ideas. When I'm in a choreographic rut, I move without stopping for no less than 10 minutes and always find that I have an idea. If I don't like the idea, I repeat the process.

Several people mentioned the importance of thinking outward from a problem, rather than inward toward a company goal.

SETTING UP THE BRAINSTORMING SESSION

Preparation

Decide who will participate in the session; appoint a scribe, and a facilitator. Make sure the room is conducive to group discussion, with appropriate materials such as lots of writing, an easel, supplies for showing concept ideas. And most importantly, ask what is the desired outcome for this brainstorming session?

Get the juices flowing

Spend 5–10 minutes getting everyone into the frame of mind that allows brainstorming—play word games, take a brief field trip, stretch the body to get blood flowing, or something neutral that is different from the topic for the upcoming brainstorming session.

Go for it

Set a time frame for the discussion, then allow extra minutes after calling time. Most people mentioned taking about 25 minutes before calling time. Sometimes setting a numerical goal helps ("let's get to 100 items").

Although it may seem inappropriate to call the following "rules," people who use and study brainstorming all seem to agree on the basics:

- All ideas are valid
- Work from other's ideas, don't worry about generating ideas
- No criticizing, judging, editing, or analyzing
- Quantity matters; don't worry about quality

Thank everyone, and then analyze the ideas.

BRAINSTORMING SOFTWARE

Several companies have developed software for individuals and groups to aid in brainstorming, find a structure for brainstorming, and learn how to set up brainstorming sessions. Here are some links to companies that also include online information and tutorials:

- Mind Tools: `http://www.mindtools.com/`
- Brainstorming.co.uk: `http://www.brainstorming.co.uk/`
- Jenni Idea Management: `http://www.jpb.com/creative/index.php`

OTHER RESOURCES

The University of North Carolina at Chapel Hill has a good handout on individual brainstorming: http://edweb.sdsu.edu/triton/guides/Brainstorming.html

Another brief "how to" can be found at San Diego State University: http://edweb.sdsu.edu/triton/guides/Brainstorming.html

Martha Graham said that one must rehearse enough to be spontaneous. Good brainstorming takes practice, but is immensely helpful in defining problems and finding solutions.

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Part VI

UNIVERSAL TOOLS: RECRUITING AND INTERVIEWING

RANDOM SAMPLING: ADDING EXTERNAL VALIDITY TO RESEARCH

UNCOVERING USERS IN YOUR OWN ORGANIZATION

LETTING USERS TAKE THE LEAD

INTERVIEWS ARE LEAD (PB) NOT GOLD (AU)

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RANDOM SAMPLING: ADDING EXTERNAL VALIDITY TO RESEARCH

ELENA MAXIMOVA

In most cases when user research studies are done in academia the results need to be published in some sort of a scientific journal. However, the methods of selecting participants for usability research described in *Observing the User Experience: A Practitioner's Guide to User Research*[1] cannot be used if a researcher wants to further generalize the results of his or her study to the user population. The book gives examples of purposive sampling methods (non-probability sampling) which are probably effective in organizational settings but not suitable for most cases of academic research.

The Web Center for Social Research Methods provides an excellent introduction to different methods of selecting random samples from the target population. The main reason for selecting a random sample is to be able to generalize the research results to the target population. The probability sampling methods are:[2]

- Simple Random Sampling—selecting a sample size where each subject in the population has the same probability of being selected. For example, if your population is all the students in a particular university and you want a sample size of a hundred you would assign each student a number and then randomly select a hundred numbers.

- Systematic Sampling—randomly select only the first subject from your population and then systematically select every nth subject. In my student example you would divide the population size (total number of all students at the university) by the sample size (a hundred). This would give you a number (n), then randomly select a subject from a population and select every nth subject after that one.

- Stratified Sampling—divide the population into different groups based on some particular characteristics (e. g., ethnicity, age, etc.) and then select a simple random sample from each group.

For example, you may divide student population by year in college and randomly select subjects from each of the subgroup.

- Cluster Sampling—divide the population into groups (clusters), randomly select needed proportion of clusters and sample all the subjects from the selected clusters. For example, divide a city into neighborhood blocks, randomly select 10 percent of those and then sample all subjects from the selected blocks.

CONCLUSION

The choice of a method for selecting a sample of participants may dramatically change the validity of the final results. In general, non-probability sampling is not acceptable for conducting research (especially observational studies) because those methods are likely to represent the population poorly and therefore may lead to erroneous results.

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UNCOVERING USERS IN YOUR OWN ORGANIZATION

TRENT GROVER

When performing user experience research, knowing your user base is crucial. Without knowledge of your user base, how can you possibly recruit or interview the people whose opinions are best able to improve your product. Luckily, as discussed by Lynn Rampoldi-Hnilo in her article, "Uncovering Users in Your Own Organization,"[1] there's a lot of information that can help you get to know your users that's already being gathered and stored within your own organization.

Successful user research requires that you decide:

1. What research questions need to be answered?
2. What sources or methods should be used to answer them?

Internal company documentation can usually help answer these questions. Who are the product users? What types of industries do they represent? Are usability issues already being documented somewhere? Where is user experience becoming a problem?

Assessing internal documentation can allow you to react to some problems before they escalate, as well as provide valuable information that guides and focuses your future user research. As soon as you start a new project, take the time to find out what relevant information is being collected within the organization.

Identify key contacts and information sources:

- Who talks to the customers?
- Who influences product designs?
- How is customer feedback handled?

Most companies store their product, sales, and customer data within some information management system (spreadsheets, databases, etc.). Though every company organizes things a little differently, some typical information sources are:

- Customer Database—contacts, business details, market details, products, sales
- Support Call Center—log of issues reported by customers (may even have a "usability" category)
- Consultants/Implementation Services—day-to-day experience with product implementation, deployment, and customization
- Product Managers—ongoing dealings with customers that influence product development
- Company Surveys—evaluate customer satisfaction with products

Examining and analyzing information from these sources will give you a better understanding of your customers and users (not always one and the same) before conducting field and usability studies. It will also help you understand where usability fits within the product development cycle of your organization and will forge relationships that may help you in the future.

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LETTING USERS TAKE THE LEAD

VALERIE WILLIAMS

FIELD STUDIES IN ACTION

Innovation happens when the designers get direct exposure to the users' entire context and its subtle variations and accidental similarities. Likewise, "intuitive" interfaces are easier to build when designers have a deep understanding of the users' context, terminology, and processes. So it seems that field studies should give the design and development team the best feedback for better design and development. But field studies are expensive, time consuming and can be intrusive, and may even give the designer/developer the wrong information about the product. However, it is possible, especially in a relatively narrow field, that there are people willing to use a product and give immediate feedback if it is made easy and convenient for them. So, by using the user, even a small company or individual developer without large resources can do field studies.

Customer Data Drives Innovation

The most innovative designs are those that are created by designers when driven by customer data:

- The light bulb was developed by people who saw the problems of working by candlelight.
- WordPerfect was developed for secretaries.
- Customer-Focused Design means that an eBay is possible.

Techniques for practicing customer-driven design include: observing the product in use, in its natural environment; listening to the users; fixing any problems that arise. How do we get that customer data?

IMMERSE IN THE USER'S ENVIRONMENT

Market research can tell us age groups, income levels, geographic regions, even purchase behavior, but it can't tell us the key things we need to know to make a product better: intentions and context. We need to know the user's intentions (what does the user want to accomplish?) in order to satisfy that customer, and we need to know the context in which the customer uses the product. The user's knowledge, skills, and experience can drive content development, interface design and usability, but only if they can be reported.

The Internet allows a community to be spread throughout the world, but still able to communicate with immediacy. Can a small company create a kind of virtual field study that gives useful user data?

When Mark Coniglio created Isadora[1] for the dance company Troika Ranch's[2] performances, he soon found that others also wanted to use the software for their own performance uses. As a single developer, he was not able to travel to see the product in action, but found that by setting up a simple listserv, he could have immediate access to those user's problems, questions, comments, and program bugs. He made it easy for the user to comment, with a simple report form that was both easily accessible, and came up automatically when a problem was detected. With a couple simple questions about the user's context, he was able to gather data to make the program not just more robust and more usable, but able to add features that users requested. By "listening" to the users in their own environment, he received valuable, real-time information about what was actually happening, then was able to act on that information.

So, use the users:

- Get actual data, not opinions
- Get immediate feedback
- Responsively use the data to better the product

GET THE RIGHT INFORMATION

These three elements can help narrow the planning to use the user for our virtual field study:

- Terminology and processes: What do users do and how do they talk about it?
- Context: What are the external forces that will impact the design?
- Similarities and differences: How can we visit several sites to get information?

In a field study, we can observe the user's context, see what they do, listen to what they say, and notice the differences and similarities in all those aspects. Like Schrödinger's cat, we can't determine what difference our presence makes to the user's experience, but we know that we've only gotten the experience probabilities for that particular moment in time. In a virtual field study, the user is leading the study with his or her comments and reported problems across time. Users can't describe activities that they don't focus on, and focus changes with user experience.

Products are only innovative if they're solving a real problem for customer. Field studies allow developers to see the product in action, but listening to the customers who use the product in their own environment is a more powerful tool for bettering the product. Users can make it work.

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INTERVIEWS ARE LEAD (PB) NOT GOLD (AU)

VALERIE WILLIAMS

Interviews are an incredibly useful method for studying the user experience. However, there are a few major things to remember about interviews.

INTERVIEWS MEASURE USER EXPERIENCE

Interviews measure user *experience* where we are particularly interested in how the user perceives what happened. What the user perceives can be quite different than what actually happened. Both are part of the user experience, but the primary goal of interviews is to extract the user's perceptual experience.

WHAT YOU GET OUT OF AN INTERVIEW IS WHAT YOU PUT IN

It is easy for the interviewer to get so invested in the success of the product that they allow this investment to bias the way in which they ask questions in an interview. Interviewer bias is present anytime a question is asked in a way that precludes a particular response. For example, consider the following question. Can you tell me how much you liked our newest website feature, tabbed navigation? Instead, the question should be asked in a non-directed fashion and focus on the user's immediate experience. Can you tell me about your use of the tabbed navigation on the website?

USERS ARE POLITICIANS TOO

Users won't always tell you what they believe. Sometimes they will do this to avoid conflict. Sometimes, they will do this so that they can look smart. Users will often answer questions that you didn't ask and completely ignore your question. Maybe your question just isn't interesting to them. Users like to talk, but about interesting things. Users might not know the answer to your question, and so they make one up. Interviewer: What did

you think about the tabbed navigation? Interviewee: (Tabbed navigation, what's that?) Oh that was really easy to use, no problem. This can also be true when you ask about an opinion that has not had enough time to be fully formed.

Like I said, interviews are an incredibly useful method for studying the user experience. However, in order to turn transcripts (Pb) into recommendations (Au) you need to think about these three things.

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ACTIVE LISTENING

JANEA TRIPLETT

The book *Observing the User Experience*[1] described the importance of the interview. It was noted that above all else, the interview was critical to usability research. As I read the chapter on interviewing, there were many tips on how to ask questions. But, if you ask great questions, then what? A great interviewer must also be a great listener. But how? We're not really ever taught this in school.

LISTENING SKILLS

My "what next" questions weren't answered with the conclusion of the Interview chapter, so I went searching. I thought I had struck gold when I stumbled across, "Bridging the Gap: Listening Skills for Usability Professionals."[2] Great! I read on with anticipation. The article defined active listening as empathic, non-judgmental validation and emotionally supportive. The function of active listening during usability research was to help clarify the feedback and to develop trust and rapport with the subjects. The author stated that active listening techniques have been overlooked in usability literature. The article continued to say that active listening was not easy to do and that it was a skill which required considerable effort and practice. The end. Wait... that's it? This was a good article (especially about the different schools of thought in how much to intervene during the interview), but no solid tips on how to become a better listener. I continued my search.

WHY IT'S SO EASY TO DRIFT

The next stop was a career skills website.[3] The suggestions offered here were that you must first understand your own communication style before becoming an expert listener. That was an interesting rationale and a nice endorsement for the value of emotional intelligence. Also interesting were the difference between the rate of normal speech and our ability to hear. People speak

anywhere from 100 to 175 words per minute, but our brains can understand 500 to 800 words per minute. That's a big difference. Plenty of time to drift off and think about other stuff while a person is talking to us.

TIPS & TECHNIQUES

Making progress, but what about tips and techniques? I hesitated, but I knew some of the best tips would probably be found on a marriage and family counseling website. Yep, here were some solid tips[4] I could use to become a better listener.

Tip 1. In your own words, paraphrase your understanding of the message.

Tip 2. Look for the feeling or intent beyond the words.

Tip 3. When confused, ask the person to say the message in another way.

Tip 4. Use eye contact and body language to let the person see that you are listening.

Still wanting a few more ideas, I ran across a document which offered several more techniques:[5]

1. Paraphrase: Put into your own words what you just heard; "So what I hear you saying is. . . "

2. Acknowledge both content and feelings: "I can see how frustrated you might be by that error message. . . "

3. Use Bridges: Such as "and, uh-huh, so" to encourage more information.

4. Mirroring: Communicate using similar tone, posture, and vocabulary as the others you are communicating with.

5. Take notes: Jot down or make a mental note of key points as you are listening.

6. Wait to hear what the other person is saying: Stop talking and don't interrupt.

7. Empathize: Let the speaker know that you can appreciate his or her position; "I appreciate your concern..."
8. Resist mental rehearsing: Don't frame a response in your head while the speaker is making a point, attend fully to the speaker.
9. Accept silence: Allow time for reflection.
10. Ask open-ended questions: This promotes more sharing of information.

CONCLUSION

Listening is an important skill that takes time to develop. Becoming an active listener can facilitate the interview process.

However, listening seems to be one of those neglected skills. It's easy to evaluate a well written document or enjoy a dynamic speaker. But, how do we really measure if someone is a good listener? I guess that's a question for another time.

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ASSUMPTIONS: CAN'T LIVE WITH THEM, CAN'T LIVE WITHOUT THEM

MICHAEL OREN

Ribbons, do you love them, hate them, or feel indifferently toward them? They are the first paradigm shift in the Office Suite in well over a decade and, quite possibly, the first major change to the Office UI that didn't just update the look. Not only that, but they're a new interface object in a world where WIMPs rule (I'm not going to get into the debate about whether or not they're truly "new"—feel free to argue about that in the comments—I'm going to go under the assumption that they are new). A change of this magnitude to one of the most widely used software packages (not to mention Microsoft's biggest money maker) clearly had to undergo some extensive usability testing and some iterative design processes. However, when creating a new interface element (or any interface for that matter) one has to deal with assumptions—those of the designer, developer, user experience expert, and of course the user. If any of the first three have assumptions that are too firmly rooted, then the voice/assumptions of the most important player—the user—will be drowned out.

The topic for this week deals with recruitment and interviewing, and as Janea talked about on Tuesday, one of the most important things in the interviewing portion is *listening* to the users and in order to do this you not only have to overcome your obvious bias (I mean it *is* your "baby" after all) as Janea and Derrick pointed out, but you also have to be willing to overcome your assumptions about what "makes sense." Jensen Harris, one of the user experience researchers on the Office 2007 team, discusses his own experience with overcoming assumptions in his blog entry "Be Willing to Be Wrong." Actually, there are two stories of assumptions—one is his and one is that of a blogger who criticized the ribbon.[1]

In the story of Jensen's assumption, he decided in one of the early prototypes that the best way to organize the ribbons was to place icons for the commands people were likely to use the most often to the far left and organize them from left to right (reversing it in countries where people read from right to left).

A fair assumption, giving that is typically the way people from Western cultures tend to traverse menus and toolbars. However, he quickly discovered in the first user study that his assumption could not have been further from the truth—people looked at the far left of the ribbon *last*—making it the worst place for the most used commands. Had he not been willing to overcome his assumptions (I'm sure the eye tracking that was done later helped with that) then the ribbon would likely have been, a complete and total failure. Furthermore, it was discovered that for some items (like the slideshow button in PowerPoint) do, in fact, still work best in the far left because people tend to look for it there.

In the second, although much shorter, story Jensen mentions a blogger who dismisses the ribbon as terribly unusable because the icons of the ribbons are of varying sizes and placements (incidentally, he fails to mention who the blogger was and provide a link to the entry, so it's possible that this was taken out of context slightly)—not lined up at nice equal intervals like a toolbar. While Jensen doesn't go into the details, he mentions that usability studies conducted proved that arranging the icons like a toolbar actually made it harder for users to find and remember the location of the commands, whereas forming related chunks and varying the sizes and placements of the icons between the chunks was found to be easier for users.

As to why you can't live without these assumptions, as Jensen points out in his article—you have to start *somewhere* in order to build the interface to test and normally the best place to start is with an "educated guess" or an assumption for what will work. The important thing to remember though is just because you think it makes sense doesn't mean your user base will share your thoughts on this.

CONCLUSION

User experience "experts" who assume that they know how interfaces should be designed/work are likely going to be able to design an interface that works perfectly for them, but unlikely to design an interface that will work well for anybody else. Until the usability study has been conducted and users have been consulted, there's never any way to know what works for the majority of your users. Assumptions should be left at the door, and minds

should remain open.

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Part VII

USER PROFILES

USING PERSONAS TO DESIGN A WEBSITE

MICROSOFT'S PERSONA MACHINE

DESIGNING FOR MULTIPLE USER GROUPS

CAN A COMMUNITY HAVE A PERSONA?

ONE IS THE LONELIEST NUMBER

CAUTION: STEREOTYPES UNDER CONSTRUCTION

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USING PERSONAS TO DESIGN A WEBSITE

KEVIN GODBY

A long time ago, in a galaxy far away, I was a technology coordinator for a small, rural K–12 school. I was tasked to organize six high school seniors to create a new school website. Since the school's website was to also serve as a community resource, our audience was very broad and ill-defined. We decided to use personas to help us design the website. The following is the process we used to design the website

STEP 1: LIST THE TYPES OF USERS

We first created a list of all of the types of users that we thought would visit our site. Our list included user types such as:

- elementary students,
- high school students,
- teachers,
- parents,
- grandparents, and
- school officials.

STEP 2: CREATE A PERSONA TO REPRESENT EACH CLASS OF USERS

Next, the students and I wrote one persona for each class of users. Snippets of two of our personas follow:

> Sally is a 17-year-old senior who likes to hang out with her friends and chat online. She loves taking pictures for the yearbook and never misses a ball game.
>
> Jim is Sally's dad. He doesn't trust Sally to drive his new truck to all those ball games she insists on going to, so he drops her off and picks her up at the school for each game.

> Being a single parent, Jim is also in charge of cooking the meals at home.

After writing the personas, we discussed them and fleshed them out a bit. We explored the various goals and values that each of the characters possessed.

STEP 3: WHAT FEATURES DOES EACH CHARACTER WANT?

We were able to tease out the specific website features from the personas that would benefit each of them.

> Sally goes to the website to find out when that book report is due. She also wants to see the pictures from last night's game. Oh, and if they're serving mystery meat tomorrow for lunch, she's bringing her own.

> Jim has to schedule his time off work around Sally's ball games and visits the website to check the schedule for the upcoming week. Sally harps at him if he fixes the same thing for dinner as she had for lunch, so he checks the day's lunch menu as well.

STEP 4: TALLY UP THE FEATURES

Next, we tallied up the number of personas that wanted each feature. This helped us determine which features were most important and which features would be least utilized.

Feature	Number of Personas
lunch menu	5
upcoming events	5
photo gallery	4
homework assignments	2
games	1
board minutes and policies	3
job listings	2
recent events (newsletter)	3

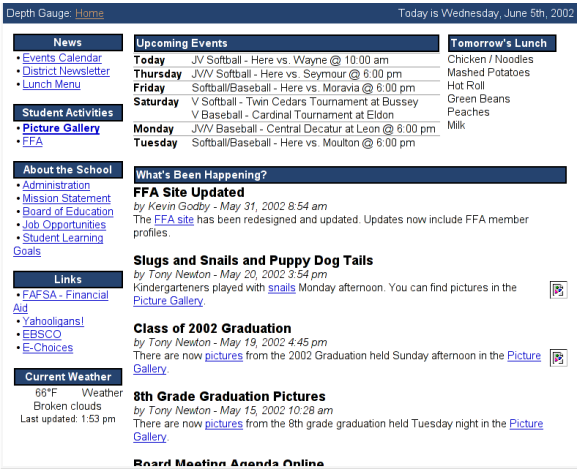
STEP 5: DESIGN THE WEBSITE

We used a few guidelines in designing the website, for example:

- Place the most common features on the front page of the site where they are easily found.
- Consider accessibility:
  - The typeface should be large enough (or resizable) so that the grandparents can read the site
  - Since broadband wasn't available in this area, the site needs to be a small download. Don't use large images or Flash or require other multimedia extensions/plugins.

Since most of our personas were interested in the lunch menu, upcoming events, and recent events, we placed those items on the main page of the site. Most of the other features can be found be following the links in the navigation sidebar.

THE RESULT



Overall, most people liked the site. There were some features that we didn't predict, however. One example was that people

wanted to check the website to see if school was delayed or canceled do to inclement weather. So on the days that school was delayed or canceled, we added a new red alert box above the upcoming events and lunch menu blocks that alerted the visitor.

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MICROSOFT'S PERSONA MACHINE

MICHAEL OREN

Mike Kuniavsky's *Observing the User Experience*[1] delves into the idea of user profiles as first introduced by usability guru Alan Cooper.[2] Both Cooper and Kuniavsky describe personas as a method to aid design and development as well as providing a common ground for communication between the various stakeholders within the company. Kuniavsky also alludes to the idea that the personas serve as a way to bring a sense of humanity to otherwise faceless statistics.

Microsoft Research has their own perspective[3] on personas. The referenced paper mentions some potential improvements to the personas outlined by Cooper and Kuniavsky, such as backing up the personas with real data in order to avoid making fictional creations based on stereotypes or biases. It is also suggested that using local residents that look like the personas instead of stock photos as a way to make the personas more human and less sterile. This is a tip that may not be practical for all companies but definitely has potential benefits. The paper also serves as an interesting examination of the trouble that a large company might have in integrating personas into the design and development process.

However, there are other portions of this paper that go against the idea of what personas are supposed to represent and as such defeats the purpose of using personas. For example, the creation of "speadsheet and document templates" is promoted as enabling more consistent and clear uses of the personas. Unfortunately, it also leads to a dehumanizing of the personas and pushes them toward statistical representations. Their method seems to make personas much more sterile and systematic. The dehumanizing only seems to worsen with the description of how these personas are used:

> ...feature-Persona weighted priority matrix that can help prioritize features for a product development cycle. In the example, the scoring in the feature rows is as follows: −1 (the Persona is confused, annoyed, or in some

way harmed by the feature), 0 (the Persona doesn't care about the feature one way or the other), +1 (the feature provides some value to the Persona), +2 (the Persona loves this feature or the feature does something wonderful for the Persona even if they don't realize it). The sums are weighted according to the proportion of the market each represents.

While there's no denying that one of the primary purposes of using personas is to ensure that the products are designed with the users of the primary market in mind, the Microsoft approach seems to take persona towards design around a market demographic rather than design around a "single user." It takes the face of the persona and turns it to a set of faceless numbers. In fact, throughout Microsoft's discussion of personas, their central focus seems to be on data. As if personas and scenarios should be based only in data. For Microsoft, personas appear to be just slightly more than a glorified data collection and analysis tool. Their approach runs against Cooper's empathetic vision of personas. Microsoft personas are the cold, sterile faces that appear to be created by engineers and marketing researchers. Microsoft's approach allows the inmates to continue to run the asylum.

TAKING BACK CONTROL

While personas are meant to aid in ensuring that software is designed with users of the key markets in mind, they are also meant to provide a way for stakeholders within the company to connect with the users rather than just viewing them as a number or an item on a checklist. It's important to remember that when integrating personas into your company culture that you maintain their perceived humanity and avoid simply using them as a means of data collection. By maintaining the humanity of the persona you maintain the humanity of the user, help take control back from the inmates, and ultimately help fight for the cause of the user.

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34 DESIGNING FOR MULTIPLE USER GROUPS

ELENA MAXIMOVA

Suppose you have done a good job in creating user profiles and separating them into clusters resulting in several different user groups that would potentially use your website (e. g., users with different demographic characteristics, interests, or roles). It is probably time to start thinking about the right way to organize the website to fit the needs of your users.

Holli Riebeek in her article "Designing for Multiple Audiences"[1] describes four different approaches to organizing information for websites aimed at multiple user groups.

The first approach is to create separate sites (with separate URLs) for each user group. The websites of Sony Co. is a good example of this approach. There is `sony.com`, `sony.net`, `sonystyle.com`, `sonypictures.com`, and `sonymusic.com`. Each site is highly relevant to the needs of its particular audience. For example, `sonymusic.com` provides content and downloads devoted to music lovers while `sonystyle.com` is a storefront site for Sony's hardware products. Even though the separation of relevant contents into different sites provides additional ease of use it may also creates difficulties of finding information if users accidentally entered a wrong website. For example, a user can buy a Sony computer only on `sonystyle.com`, but there is also `sony.com` website which may be easily mistaken for Sony's retail storefront.

The second approach is to create a website for your main audience but include some information for other audiences. For example, the NSA website provides information about its activities for the adult audience but also includes a separate page for kids. Apparently it is easier to concentrate on the largest audience and maintain a single website. However, this approach may marginalize interests of other user groups resulting in loss of interest from those groups in your website.

The third approach is to provide relevant information to the user after he or she logs into the website. For example, `MathJobs.org`, a job search website for mathematicians, allows users to login as employer, job seeker or reference letter writer. In each case user gets the information and options relevant to his or her

role. This approach to site organization creates a great way to manage sensitive information while maintaining a unified web space; however, it may not be suitable for websites that are aimed at a large variety of audiences or do not have to maintain secure information.

The fourth approach is to create sub-sites for each user group that are accessible from the homepage. Each sub-site would have consistent design and a separate target audience (no login required). For example, many university websites have a main homepage with general information and also maintain series of sites for different audiences (e. g., students, faculty, job seekers, or parents). The main problem with this approach of website organization is that the user may lose orientation of where he or she is in relation to the homepage or the entire site.

CONCLUSION

There are probably other website design methods for creating a website for multiple audiences; however, all of them (including the ones above) have some advantages and disadvantages. The decision as to what method is the best depends on the main goal of creating a particular website (e. g., purely informative vs. commercial). For example, Amazon.com obviously strives to accommodate all user groups (even children find it easy to use[2]) by simple design and customization based on the browsing experience of a particular user rather than on his or her belonging to a certain user group. However, regardless of the method being used, creating a website that accommodates needs of as many types of users as possible outweighs the problems and cost of creating it in the long run.

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CAN A COMMUNITY HAVE A PERSONA?

VALERIE WILLIAMS

In 1998–2000, prompted by concerns about quality of life issues, first the Ames Chamber of Commerce, then the Ames Community Arts Council (ACAC) initiated studies, profiling and discussions with citizens of Ames and Story County, asking how can we make the City of Ames better, more attractive, and meet the needs and desires of the entire community. Internal research wasn't going to work—we needed to go community wide, to do a community cultural assessment and then make a community cultural plan. As part of the arts community, we understand what *we* (the arts interested community) want, but we didn't know what everyone else wanted. ACAC formed ArtsReach and with a matching grant from the National Endowment for the Arts, hired Arthur Greenberg and Associates to help with a survey of residents, business and community groups, artists, and cultural organizations, then with planning, analysis of collected data, and finally to develop a community plan of action.

The cultural plan could let us know who are our users, what they want, and how we can meet their needs.

- Create programs for the selected persona
- Market to the right persona
- Let people contribute within their own persona

We learned that marketers have descriptions of 50 different "lifestyle segments" and that Ames falls into the following ready made personas:

1. Upper Crust
8. Movers and Shakers
10. Home Sweet Home
15. Great Beginnings
16. Country Home Families

34. Books and New Recruits

39. On Their Own

47. University USA

Co'Motion Dance Theater uses personas to market to the right group of people—we learned that our audience members understand abstractions, are adventuresome and multi-age, intellectually curious, and literate. We work from the facts, use field studies, and listen to our customers.

Personas, not persona. A community is a collection of personas, and unlike a business, we have to acknowledge and serve all persons and personas.

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ONE IS THE LONELIEST NUMBER

DERRICK PARKHURST

USER PROFILES ARE NOT USER PERSONAS

A user profile is a descriptive resource. A profile is a laundry list of user characteristics including, demographics, technological skills, psychographic variables, goals, needs, desires, roles, and tasks. Profiles describe real users. On the other hand, a persona is a design tool. It is a synthesis of user characteristics deemed to be important. These characteristics include goals, needs, desires, knowledge, and skills. A persona describes a hypothetical user. Its creation is an art.

ONE IS THE LONELIEST NUMBER (OF PERSONAS)

While you might want to carry around an entire stack of user profiles, you should be designing each product for just one persona—the primary persona. Sometimes, personas are suitably similar to each other such that designing for one with also satisfy the other, but you are still just designing for a single persona. Designing for all of the users that you discover will sometimes do, but in the end, such a design doesn't serve any one of them particularly well. Please all, please none.

PERSONAS LIVE AND DIE ON THEIR GOALS

Goals are the reason why users perform tasks. A given product will support particular tasks, but product design should aim to meet the goals of the user, not facilitate the tasks of the user. That is because the user's tasks can change while the user's goals remain the same. Consider my goal of buying an interesting book. At Borders, I peruse the bookshelf and examine the content of the books. At Amazon, I search using keywords and read recommendations of other users. Both stores help me meet my goal of finding an interesting book, but involve an entirely different set of

tasks. If you design to improve the existing set of tasks (Borders) you'll never even see the possibility of an entirely new and better set of tasks (Amazon).

PERSONA NON GRATA

Developers and management will rail against using personas. Their use in practice just isn't natural. It is much easier to see personas as silly fluffy nonsense. If you can make personas pervasive in the minds of the entire team, there will be a number of important benefits. Personas will help the team communicate, build consensus, provide a tool to measure the effectiveness of a product design, and even contribute to marketing and sales plans. Most importantly, the use of a persona will help developers make choices in the development process that support the users, without always consulting the designer.

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CAUTION: STEREOTYPES UNDER CONSTRUCTION

JANEA TRIPLETT

Now that I have your attention, I'll tell you up front that what follows is not a rant. It's not even a statement for or against political correctness. It's a caution—words of warning about the creation of personas and the practice of user profiling. Even if one calls it the development of an archetype or ideal type, it is still a stereotype.

IN DEFENSE OF PERSONAS

As presented in Chapter 7 of *Observing the User Experience*,[1] user profiling was an important tool in helping designers imagine, design for and communicate about real people. I found numerous articles praising and describing persona creation:

- "The Origin of Personas," by Cooper: "programmers could . . . identify with these hypothetical archetypes."[2]
- "Perfecting your Persona," by Goodwin: "synthesized from a series of ethnographic interviews with real people"[3]
- "The Art of Stereotyping," by Katre: "realistic stereotyping or a simplified outline of the user"[4]

ORIGIN OF STEREOTYPES

We're all familiar with the contemporary meaning of the word—ideas held about members of a group solely based on membership in that group. But, let's step back in time. Interestingly, the word stereotype was first used as a technological term meaning "a method for printing from a plate."[5] Over 100 years later in 1922, the word *stereotype* took on its more common sociological meaning of a "picture in our heads."

PICTURES IN OUR HEADS

So, how do we get these pictures in our heads? Family, friends, society, education, travel, movies, . . . The list goes on and on. Some pictures get into our heads from first hand experiences. Other images we borrow second hand. Let's try an experiment. Think of a map and envision the state where you live. Now, look at this map[6] and find your home.

Did it take you a little longer to find your home state? Did you feel a little disoriented? This is why we need to be cautious about creating personas and user profiles. The information around us, our past conditioning, influences our current thinking and our vision of the world. Maybe certain details don't make a difference, but what if they do? What if our world view conditions us in such a way that we miss important insights?

THE PROFILER GETS PROFILED

I ran across an article, "Four approaches to user modelling,"[7] that I have been saving for the User Profiling chapter. I found it almost ironic that while we were discussing creating user profiles, this article was creating profiles of HCI professions.

The researcher created four ideal types of the HCI professional. These ideal types were labeled: (1) bridge builder, (2) analyst, (3) programmer, and (4) designer. Because of the educational background, professional networks, and work experience, these ideal types were then more likely to think about and categorize users in a certain way.

COUNTERACTING STEREOTYPES

After the article stereotyped the HCI professional into four ideal types, the question was then asked if HCI professionals stereotype users. The answer was "probably." The reasons given were our "schematic thinking." Our background conditions us to look at the world in certain ways. The article suggested several methods for counteracting stereotypes: (1) to create cross-functional teams, (2) to incorporate more training and education, and (3) to provide opportunities to interact with real users.

TURNING YOUR WORLD UPSIDE-DOWN

My suggestions for counteracting stereotypes are less academic. They're simple; and yes, they're kind of silly. Once a month or better yet, once a week, do something out of the ordinary. So here goes. Janea's tips for turning your world upside-down:

1. Listen to music that you would not normally listen to.
2. Watch a film in another language without the subtitles turned on.
3. Eat foods that you've never tried before and if you normally eat with a fork, try the meal without utensils.
4. Talk to strangers (but keep safe).
5. Dress in an unusual item or wear a funky color and observe how you're treated.
6. Ride a bus, train, limo, bike or walk to work—just travel and arrive by something different.
7. Try to learn something new—a language, a craft, a recipe, a person, a pet.

You get the idea. By putting ourselves into unusual situations we hopefully add new images into our heads. These valuable first-hand experiences may help to reduce our tendency of taking the cognitive shortcut of stereotyping. They may even help to reorient our vision of the world.

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Part VIII

CONTEXTUAL INQUIRY, TASK ANALYSIS, CARD SORTING

USABILITY MEETS ANTHROPOLOGY

INVISIBLE OBSERVATION

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USABILITY MEETS ANTHROPOLOGY

JANEA TRIPLETT

According to Kuniavsky, contextual inquiry is a data gathering field technique that would allow usability researchers to understand the "real environment" in which people work and live.[1] Hey! This sounds like what I've done over in Anthropology. I'll confess my bias upfront, if I weren't getting a Ph.D. in HCI,[2] I'd be doing ethnographic research in a developing country somewhere. I love the holistic notion of going into the natural environment to do observation. That got me thinking, what if Jakob Nielsen[3] and Margaret Mead[4] were to meet? Would they become friends or would it be more of a celebrity death match?

PIONEERS IN THEIR FIELD

Both are known for being pioneers in their field—some might say even mavericks. Neither is without controversy. Nielsen has been called the guru of web usability[5] and Mead the most famous anthropologist[6] in the world. Both, in their own way, seem to be advocates for humanity. Nielsen has written that usability should "defend users' rights and fight for simplicity."[7] Mead's epitaph reads "cherish the life of the world."[8] I would imagine, however, that their methods of gathering knowledge about the human experience would be quite different. Nielsen has been credited with "discount usability"[9] which promotes a quick—get in and get out—research methodology. While, Mead would spend a year or more on location to discover the interconnections of human life and said the way to do fieldwork was to "never come up for air until it is all over."[8]

TAKING UP ETHNOGRAPHY

Even if Nielsen and Mead seemed to disagree over the intensity of the method, both agreed that field research was critical to understanding. Nielsen wrote that field studies were one of the "most valuable"[10] research methods. Mead encapsulated the importance

of field research by saying "what people say, what people do, and what they say they do are entirely different things."[11] So how do we take up this technique? Contextual inquiry and ethnography employ similar methods—go to where the action is, observe the person in action, and talk to the person about the action. Through this technique, the researcher is able to discover connections and relationships.

THE PROBLEM OF CONTEXT

I'm a huge fan of the ethnographic approach. I've been able to do small field research projects in Thailand, Ethiopia and South Korea. Despite the advantages of this technique, it is also wise to be cautious because no epistemology[12] is perfect. I found an article which addressed what it called the "crisis of context."[13] The authors took a historical look at the methods used by researchers of media and science and technology studies.

To summarize, beginning around the 1930s, researchers began to recognize the importance of context. The level of analysis continued to narrow over the years from large-scale survey research to person-to-person inquiry. The enthusiastic adoption of ethnography by researchers of media and science and technology was done in an attempt to gain more knowledge.[13] However, the problem of context was that the closer the researcher got to the individual, the muddier the waters became. The authors concluded that the exercise of discovering context only revealed more contexts and that "no number of contexts or relations can constitute the wholeness . . . of an entity."[13]

AGREE AND DISAGREE

This statement has merit even though I found it somewhat startling. Yes, the real world is complex—most contexts overlap. But, I still believe it's important to go to where the action is. Ethnographic techniques such as contextual inquiry have value in the search for answers to usability problems.

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INVISIBLE OBSERVATION

VALERIE WILLIAMS

> **ob·ser·va·tion** *n.* /ŏbˈzər-vāʹshən/ **1a.** The act or faculty of observing. **b.** The fact of being observed.
>
> —American Heritage Dictionary[1]

Documentary film makers James Longley and Laura Poitras were asked how they were able to get their cameras so close to their subjects. Their replies to interviewer David Gordon on "The Story,"[2] were right on line with any observers who don't want to interject themselves into the user's experience.

TIME

One needs to spend enough time with the subject so the camera could become an intimate part of the situation. Eventually the subject forgot about the camera, and the videographer. Working independently means a one person crew, lessening the observational footprint, eventually making the observer invisible.

PATIENCE

One can't predict situations, they arrive on their own time. Events or circumstances can change in an instant. The patient observer can take advantage of those changes to record a spontaneous act. The subjects are worrying about the immediate events and not about the camera.

RELATIONSHIPS

Develop in-depth relationships with subjects. Most individuals regard themselves as normal, and observers must accept that that individual is normal in their environment and not interject their own biases. Even though a language barrier can lend distance, Poitras didn't interview her subjects while filming. She became

invisible behind her camera, and eventually subjects came to accept her presence and then ignore her.

TRUST

If you want them to trust you, you have to let them know that you trust them. No body armor, just yourself—communicating your own needs and desires and staying open. People generally behave in kind.

Both film makers remarked on the moral ambivalence of being part of a scene while recording it, but also having the privilege of being able to leave. They felt that telling the story was more important than not telling it.

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CONTEXTUAL AND TASK ANALYSIS FOR PROJECT MANAGERS

TRENT GROVER

As Kuniavsky states in his book, contextual analysis, task analysis, and card sorting are techniques that are useful for analyzing a few users at close range to determine who they are, how they operate, and how they think. Kuniavsky approaches the topic from a website or software development perspective, but some of these tools are just as useful in other types of development efforts.

For example, project managers[1] use many of the techniques of contextual and task analysis on a daily basis to build efficient and effective teams of all kinds. When you think about it, a well oiled team is in and of itself a tool that requires development. That team is a machine that smoothly and predictably churns out good products. For a development team, the project manager essentially serves as the machine's user interface. Company executives or clients often interact with the team almost solely through the manager.

At the same time, it's the manager's job to build, improve, and maintain his or her team through a continuous iterative design and development process. The manager must ensure that the team has the right members, with the right skills and experience, and that each team member gets the resources they need, when they need it, to collectively produce what the client needs. This baseline responsibility is the same no matter how large or small your team is, and no matter what your product is (software, hardware, or information).

Covert and informal contextual inquiry is the manager's primary tool to this end. As we know, contextual inquiry boils down to a careful, in depth examination of a few people to discover how they work. To quote Kuniavsky, it "helps you understand the real environment people live in and work in, and it reveals their needs within that environment." This is exactly the information a manager needs to know about his team members.

The information gleaned that is most directly used by managers relates to the tools and methods the various team members use. What tasks is each team member capable of? What environ-

ment do they need to be at their best? What resources do they need to be most effective? Maybe Jim only writes good code while locked in a sweltering closet, or Jennifer needs a pot of coffee and a window. These questions and their solutions can get even more complicated when viewing the team as a collective. Perhaps Jim only writes good code once Jennifer has written a functional spec for him. Even more commonly, maybe Jim and Jennifer hate each other's guts and the manager has to be the intermediary. Even bad managers try to gather this type of information flow, data flow, and resource flow information.

Good managers tend to dig a little deeper, trying to understand each team member's overriding goals, values, and motivations. A happy team is usually a better performing team. Does Jim value money, praise, power, or just a challenge? Is this job Jim's entire life, or just a paycheck? Once determined, a skilled manager will modify his or her interactions, communication, team structure, project development structure, compensation structure, etc. to provide each team member with the motivation necessary for the entire team to succeed.

This team building process doesn't happen overnight, and a team's first project is rarely without a few bumps. It's a continual process that requires the manager to keep his or her mind and eyes open to everything that's happening around them while development is under way. As Kuniavsky notes, it helps to "learn the domain." Though managers don't need to be capable of performing all the tasks of the team, they must know enough about the terminology and processes to properly plan the development process and communicate effectively with the team.

Over time, a history of contextual analysis will also inform the manager's recruiting, interviewing, and hiring practices. What traits appear most important for each team role or task? Do particular personality traits, demographics, educational or professional experiences, or values seem to impact performance within the team?

Though contextual analysis is an important tool for building and maintaining a strong and effective team, that team still has to get some sort of development done. Planning the development process is the other major responsibility of the project manager. For this duty, task analysis is a key technique.

Some of the information determined by contextual analysis plays a dual role when analyzing the tasks necessary for prod-

uct development. These would include identifying which team members perform what subtasks best and what resources they need to perform those tasks. The manager must also identify any process dependencies. Does Jim need to finish certain tasks before handing things off to Jennifer to finish off? These dependencies allow the manager to schedule the often complex, interacting tasks amongst many team members. This may include identifying which team members are necessary, as well as when they are necessary, to complete the project most efficiently.

As part of the task decomposition phase of task analysis, Kuniavsky mentions several categories of information that are useful to capture information about, including Purpose, Cues, Objects, Methods, and Options. Taking a look at each of these categories from a project management perspective can help expand our understanding of what project managers are responsible for.

PURPOSE

- Why is each action performed?
- Is it necessary to achieve the end result?
- Is there a better/more efficient way?

CUES

- What tells the person that it's time to perform the action?
- Does the manager need to do it explicitly?
- Can an automated system help?
- Can the team members determine that amongst themselves?
- Even if they think they can, can they really?

OBJECTS

- What does the action operate on?
- What does the manager need to provide?
- Is there a better resource out there (different software, hardware, or people)?

METHODS

- What is the action?
- Who is most capable of performing it?
- Do we need to hire someone else?
- Do we need to train an existing member?

OPTIONS

- What alternative actions are available (different software, hardware, or people)?
- Managers often research/implement new tool sets to help enhance work flow.

As with the contextual analysis involved in building the team, these task analysis processes must also iterate continuously throughout the development process. Managers must constantly reevaluate and reassign resources and tasks, and perform error analysis and project triage. Once again, the information learned on one project informs and improves the planning and execution of the next project.

KEY POINTS

- Team building and management are complicated processes (if done right)
- Good teams and reliable development processes are a valuable product
- Contextual inquiry and task analysis are the most valuable tools of the project manager

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DROP-DOWN MENUS ARE LIKE TENNIS

DERRICK PARKHURST

Are there any two things in the world less related than the sport tennis and drop down menus? Yes, plenty.

Tennis and drop down menus share a common interaction structure. Thus, we learn to accomplish these tasks in the same way—through feedback.

In tennis, the primary objective is to hit the ball with a racquet such that the ball travels over the net and lands within the opponent's court. In order to complete this (surprisingly difficult) task, a significant amount of hand-eye coordination is involved. The correct orientation, speed and trajectory of the tennis racquet depends on the spin, speed and trajectory of the ball. Even a slight error in the swing of the racquet can make the ball go sailing out of bounds (at least for me). With time and practice, it becomes easier to correctly play the ball. Why? Each time a player (take me for example) returns the ball, I learn the association between the behavior (the swing), the actual result (the ball return trajectory), and my expected result. When I play the ball successfully, a positive association is made—my expectations matched the outcome. The next time a similar play arises, I am likely to play the ball in a similar way. When I play the ball unsuccessfully however, a negative association is made. Thus, I will play the ball differently the next time, in hope of a better outcome.

Because we are all expert drop down menu users by now, it might be difficult to realize that navigating drop down menus is as difficult as playing tennis. It is just that we have so much practice with drop down menus that their use is now quite easy. At some point, however, the user (take me for example) had to learn how to use these menus. To accomplish this, I engaged the same learning mechanisms that I applied to learn tennis. Let me make the comparison more direct. The computer mouse is the tennis racquet, the mouse pointer is the ball, and the menu is the court. The goal of this game is to guide the small mouse pointer into the appropriate (not to mention small) menu item box while following the necessary sub-menu arrows and hidden-item expansion tabs, while all the time staying inside of the menu

boundaries. When put it like that, it doesn't sound all that easy, does it? It's not. Watch a child learn to use drop down menus, especially intellimenus. It takes time and practice to become an expert. Interestingly, like tennis, even experts make mistakes. The result is a misplayed ball in tennis and the unintended selection of a menu item in drop down menus.

Tennis and drop-down menus engage the same feedback-based learning mechanisms to help us improve our performance over time.

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CARD SORT ON A LARGE SCALE

MICHAEL OREN

I will be taking a different approach with this essay—rather than sharing my opinion on a usability story I've read recently, I will be providing a summary for a paper Google employees submitted to CHI '06. Partially because the paper isn't publicly available without a membership to the ACM digital library and partially because I found the paper extremely interesting—you normally don't see many papers on the scalability of user experience research methods. If you do happen to have access to the ACM digital library, then be sure to read the full paper.[1] Also check out Google's other HCI related papers.

Everything Google does, it does on a large scale—it's kind of hard not to work on a large scale when your goal is to index the world's information. With rapid growth and lots of information, you are bound to run into the problem of a googol of links that need to be organized. Such was the case with Google's AdWords help page, and user experience researchers at the company had to figure out how to organize over five hundred items. Clearly this was a case for the card sort method, but how do you go about doing a card sort for over five hundred items—that's considerably more than you can expect any user to sort through due to the massive time commitment required. Subsets of the items could be used, but then you don't get a sense of the larger information architecture and without having some form of higher structure in place beforehand you can't be sure the subsets are effective. In order to solve this problem, Google decided to do a three-phase solution to this problem—two rounds of card sorts followed by a usability study to evaluate the new information architecture.

In the first round of card sorts, three Google user experience researchers were aided by an expert in AdWords (one of the AdWords customer service representatives) and they spent several days of two-hour sessions collaborating in sorting through the over 500 items—after conducting some background research by finding out about the most frequent calls to the AdWords help center. This first round resulted in the creation of several categories, sub-categories, and sub-sub-categories. Following this second round,

they divided the cards into three subsets each with about 170 cards—still too many to expect users to sort through. Each subset included several cards from each of the proposed categories, sub-categories, and sub-sub-categories (referred to from here on out simply as categories for simplification purposes). They then asked nine AdWords customer service representatives (CSRs) to sort the cards—giving each group of three CSRs one of the subsets of cards. In addition, they provided the CSRs with their proposed category names letting them know that they were free to change, ignore, delete, and add to the categories. This second sort took a single three hour session.

After round two, the user experience team sifted through the data and built a prototype AdWords help page using the information architecture (IA) defined by their card sorts. They then used this new help page in a usability study where they had users attempt to find the answers to common questions received by the CSRs using both the old and new IA for the help center. The new IA resulted in users finding items faster (a median time of 37 seconds to find items versus a median of 50 seconds). In addition, the new IA resulted in half the error rate as well as half the give up rate of the old IA. Clearly a significant improvement over the old IA.

COOL! BUT THAT'S A LOT OF STUFF; CAN YOU SIMPLIFY THAT?

When faced with a problem of scaling, learn to break the rules—use experts/employees to get the bulk of the work done. With the work done, *test it*! Use the test results to tweak the system, ship it out, and continue to monitor, evaluate and improve it.

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CARD SORTING IN INFORMATION DESIGN

ERIC DREWSKI

Card sorting is design technique where topics are written down on index cards and are sorted into piles by the users. This technique is used very often among technical communicators to get better insight into the information design of websites. The article "Information design using card sorting" by James Robertson at Step Two Designs,[1] gives four inputs in the information design process: business requirements, strategic directions, technical goals and limitations and usability guidelines.

THE PROCEDURE

The paper provides a "step-by-step approach to preparing and running card sorting sessions." The first step is to make a list of topics to be organized. After choosing a list of topics, a survey of the user's current usage of information will be is needed. This will help us later understand the groupings of piles. The survey should consist of three parts: a front page, much like a cover letter explaining the project and card sorting session, the survey, and then a final page asking the users comments about the survey. A Likert scale should be used for the main questions, while the general feedback should ask basic demographic information and other methods for obtaining information that was not presented.

CARD SORTING / THE SURVEY

Creating the cards should not be difficult. Make sure the writing is clear and readable. For card sorting to work there must be at least four participants in order that there is sufficient data for meaningful results. There are also some general items that should be present before the session begins: notepad and pen to take notes, a consent form, rubber bands to keep the cards together, blank cards for the participants, pens and markers for them, and enough surveys. When the session begins make sure to show the participants how each stage works: filling out the survey, sorting

the cards, and a discussion about the labels attached to each pile.

CONCLUSION

The sorted cards should be fashioned into diagrams in order to compare the differences and similarities between the card decks provided by different users. The survey should be entered into a statistical program for analysis. The final result should be put into a short report that includes the participants demographics, brief summary of the activities conducted, a description of the survey used, an analysis of the results and the conclusions from the study.

KEY POINTS

- Use card sorting to aid in web-site information design.
- Follow the correct procedures for implementing a card sorting technique to obtain meaningful and accurate results.
- Put all the information together into a primary research report.

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Part IX

FOCUS GROUPS

NONVERBAL DECODER RINGS FOR FOCUS GROUP MODERATORS

FOCUS GROUP SESSIONS WITH THEATRE TECHNIQUES

SHOOT THE FOCUS GROUP

ARE FOCUS GROUPS KILLING DEMOCRACY?

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NONVERBAL DECODER RINGS FOR FOCUS GROUP MODERATORS

JANEA TRIPLETT

The strangest thing happened a few years ago when I took a college course in nonverbal communication. As soon as my colleagues, friends and family heard I was taking this course, most assumed I now had a body-language secret decoder ring. Even funnier was the assumption that I had been gifted with x-ray, deception vision. People would curiously ask, "What does it mean when I do this?" and then they would alter their face or body into some sort of unnatural contortion. Others would suspiciously disclose, "Oh, I better be really careful around you now because you'll know when I'm lying." I hope you can imagine the fun I had messing with people's minds that summer!

USABILITY SUPERHERO?

As I read the chapter about user research and focus groups,[1] I was overwhelmed by the daunting duties expected of the moderator. A moderator must be respectful, nonjudgmental, and prepared. A moderator must keep the room relaxed and the conversation flowing. A moderator must also embody those fuzzy talents like good timing and active listening. And to top-off this list of great expectations, the moderator must possess an ability to read the group's nonverbal communication while controlling their own. Aren't these more the qualities we would expect from Superman or Wonder Woman? Faster than a heated discussion, more powerful than a rambling participant, and able to leap through impossible issues with a single, open-ended question... Wow! Could I ever realistically hope to become one of those superhero moderators?

I WASN'T BORN WITH SUPER POWERS

The qualities demanded of a focus group moderator seemed incredible. Although I grew up in Smallville,[2] I wasn't born with super powers. Wait a minute... my thoughts returned to the non-

verbal communication course... wasn't I given a secret decoder ring a couple years ago!

"Decoding nonverbal communication is simple," I remember my professor's confident statement. She continued, "granted there's a lot to be aware of—eyes, voice, touch, movement, context—but we've been perfecting these skills since we were children. After all, we understand sarcasm, humor, or threats not simply by the words, but by the tone of the message."

OK. So it seems that the tricky part for a focus group moderator is sorting out the important stuff without becoming overwhelmed by all the little details.

GOOD NEWS

The good news is that despite what popular culture might lead us to believe, men and women are more alike than they are different. A book titled, Men are from Mars and so are Women, really doesn't have the same editorial flare. Fortunately, there exists over thirty years of nonverbal research[3,4] to sort out "folk wisdom" from scientific findings.

So when it comes to being the moderator of a focus group, here's what the secret nonverbal decoder ring reveals: (1) women in the room may show more facial displays of emotion than men, (2) female speakers may use a wider range of vocal pitches than men, and (3) women may be less talkative than men especially when in mixed sex groups. Also, be aware of the seating arrangements. Men, for biological and social reasons, prefer more physical space than women. Because of this, men may become more agitated than women when being crowded.

CULTURAL CAUTION

Now it gets more complicated. If the room is filled with a culturally diverse group, the secret decoder ring won't work. Your interpretation of the nonverbal cues could be literally lost in translation. The writers of the Mac vs. PC[5] ads had to go back to the research room when the U.S. commercial backfired on a global scale. When the ad ran in Japan, Japanese viewers[6] did not see Mac as an endearing, laid-back guy, but as an unsophisticated braggart.

SO REMEMBER

When decoding nonverbal communication, gender matters a little, but culture matters more!

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FOCUS GROUP SESSIONS WITH THEATRE TECHNIQUES

ELENA MAXIMOVA

The focus group method is widely criticized for mismatches between the outcome of focus group studies (i. e., what people say about product) and actual customer attitude toward that product.[1] The best example of this mismatch is the statistics that "80 percent of new products or services fail within six months when they've been vetted through focus groups."[2] Why does this gap exist? Here are some of the reasons:

- Motivation—some people in a focus group show up for money, not for desire to express their real preferences
- Desire to Please—if the participants' motivation for participation is skewed toward money, they are more likely to "earn that cash" and therefore would try to please researchers saying things they think the researchers want to hear
- Unfamiliar environment and lack of trust between participants and researchers—in most cases researchers have no time to build trust and create familiar environments for participants; therefore, participants are less likely to express their true opinions, especially if it goes against the mainstream
- Context-less environment—often participants are asked an opinion on a product that they never used or experienced in real life and as a result they produce hypothetical opinions about it

As Philip Hodgson in "Is Consumer Research Losing Its Focus?" points out, "The fundamental problem is that, in spite of what conventional wisdom tells us, it is not the voice of the consumer that matters. What matters is the mind of the consumer."[1]

One of the ways to get to the mind of the consumer is to create a shared understanding of the context for the product's use by introducing Theatre techniques into focus group methodology. The "Playacting and focus troupes: theater techniques for creating

quick, intense, immersive, and engaging focus group sessions" article by Sato and Salvador[3] suggests using real actors and scripted scenarios (as well as other theatre techniques) in order to relate the product to real life. Unfortunately, the article is a little fuzzy about the particulars of the implementation of these techniques as well as their effectiveness in successful product development. However, I think that theatre techniques should be effective in (1) developing the context for product use and (2) making participants relate the product to their lives. A play-out scenario (with elements of conflict) performed by actors, where the products are props, would relate the products to real life and make participants relate or contrast the performed situation to the situations in their lives on a subconscious level (if participants have a chance to further develop the situation and create a potential experience with the products).

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SHOOT THE FOCUS GROUP

MICHAEL OREN

BusinessWeek had an interesting piece a couple of years ago about the end of focus groups at Yahoo as well as a growing dissent regarding traditional focus groups at various companies.[1] Focus groups are one of the oldest tools in the arsenal of user experience research, having it's origins in the early 1900s. Is it time to retire focus groups as Yahoo suggests or do they still have their place?

While it is true that focus group participants are not always entirely honest (not on purpose, simply due to being uncomfortable speaking the truth in a focus group). You can say that this just means you shouldn't conduct focus groups that involve sensitive topics; sometimes it isn't obvious which topics are sensitive. For example, AOL conducted a focus group and discovered that the male participants were dishonest about their opinion regarding spam, as they weren't willing to admit in a group that they didn't have complete control over their e-mail/laptop. The presence of too much spam to inefficient spam filters is not an issue that I would have considered to be a sensitive topic. In addition, moderators may be able to observe when participants are holding back but this depends a lot on the experience of the moderator and how in tune they are with the group.

So dishonesty is one potential problem with focus groups. False positives are another serious potential problem with focus groups—where the focus group will speak favorably about a product but when the product releases, the consumers ignore the product (have trouble "figuring it out"—such as the Pepsi Edge hybrid between regular and diet cola) or simply do not want it. False positives from focus groups often occur either through the first problem, of participant dishonesty, or because the focus group does not properly represent the market or does not have a wide enough range of participants. Part of these problems can be alleviated by recruiting more participants and having a better understanding of the potential consumers.

If however, you decide focus groups aren't for you (or at least not for what you're researching) then there are several alternative solutions out there. Online focus groups provide the same type of

feedback as traditional focus groups; however, subjects are more likely to be honest due to the greater level of anonymity online environments provide. Online focus groups also allow for faster and larger focus groups to be formed, which has the advantage of having fewer false positives. However, due to the anonymity of online focus groups you cannot be sure that participants have identified themselves honestly. Furthermore, online focus groups have the disadvantage in that you can only obtain verbal (or in this case written) communication from participants, so you have no way of reading the undertones of their opinions. There also tends to be less interaction between group members in online focus groups, which kind of takes away from one of the benefits of having a focus group as opposed to individual interviews.

TO FOCUS GROUP OR NOT TO FOCUS GROUP

Focus groups are still the ideal solution when you want interaction between participants or the advantages of obtaining nonverbal communication from participants. Online focus groups have their advantages, such as more likely to receive honest responses from participants and the ability to recruit participants faster and cheaper than traditional focus groups. Focus groups are not dead, nor should they be, but an additional tool has been added that may replace it depending upon the needs of your study.

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ARE FOCUS GROUPS KILLING DEMOCRACY?

TRENT GROVER

Anyone who's been awake lately realizes that polls and focus groups have taken a huge role in modern American politics. They've been used for a long time for a couple of very different goals. They can be used in a positive way to help define and refine political policy, molding it to rest more in line with the common people. Unfortunately, they can also be used for more sinister purposes, spinning crappy policy to confuse the common voter (propaganda).

Here's a quick history of political polls and focus groups:

- JFK used them to figure out how to articulate his civil rights agenda.
- LBJ polled more (mostly about Vietnam)
- Nixon polled even more (helped shape domestic policy)
- Jimmy Carter had the first "rock star" pollster
- Reagan polled obsessively (first to use it to sell a right wing agenda to voters, but retreated when polls showed he couldn't win)
- George H. W. Bush mostly ignored polls to his detriment (bad approval ratings)

Bill Clinton took the use of polls and focus groups to a whole new level. He polled more than anybody, both more often and with more detail. He even named his key pollsters as senior advisors. For the most part, Clinton used these techniques to craft more popular domestic policies (welfare reform, balancing the budget, etc.). Oftentimes this would push them to a more centrist position that neither the die-hard Democrats nor Republicans liked, but the poll and focus group data was persuasive enough to gain support from both sides.

Clinton's use of polls was far from pristine. One told him that voters wouldn't accept a candid acknowledgment of the Lewinsky

affair (didn't work out well for him). He used them for policy spin too. He didn't "spend" on education, he "invested" in it. He even ran focus groups to determine family pets and vacation spots.

When George W Bush came along, he put spin into overdrive. Bush loves to say the he doesn't "decide policy based upon a focus group." That's technically true, but not because they don't use focus groups. The Bush administration tries really hard to hide it, but they (Karl Rove) spent close to $1 million on polling and focus groups in 2001.

The key factor here is that they don't allow these techniques to influence what they do, just how they sell it. Once the administration has formulated policies that their conservative base likes, they search at length for how best to spin it so that mainstream voters might swallow it. Since many of Bush's policies are unpopular with the majority of fully informed voters, Bush's pollster (Van Lohuizen) and focus group guy (Steeper) get paid to find the right words to sell them to the public ("education recession," "school choice," "death tax," "wealth-generating private accounts," "tax cuts and debt relief").

These tactics have been so successful that the general GOP strategy is now to win over the press and public with poll tested "power phrases." At one point the RNC chairman instructed Republicans to repeat these phrases "until you vomit." Public opinion is not considered worthy of consideration in its own right.

KEY POINTS

- Focus groups can be used to craft solid, democratic solutions.
- Or they can devolve into lipstick factories for pigs.

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FOCUS GROUPS IN MASS MEDIA RESEARCH

ERIC DREWSKI

Mass media research has heavily focused on the visual versus the auditory systems. Many mass communication theories are based on visual epistemologies. Most mass media scholars assume that the visual system is more powerful and important than the auditory system. A research study[1] using focus group methodology suggests the opposite, that the auditory system is more powerful than the visual systems in that it more readily evokes emotions from individuals. The study was conducted at Sussex University in the United Kindgom and focused on the uses and gratifications of Walkmans.

AUDITORY PLACE AND SPACE

This study begins by investigating the artifact itself and what it signifies to other users using focus group research methods. The headphones, for instance, are what creates the private space for the user because it signifies to others that the individual does not want to be disturbed. The headphones intentionally put themselves elsewhere. Each walkman is personal to each person because certain songs means something different to each person and are meant for specific activities. Users describe the sounds of everyday life affecting their moods and how they perceive their surroundings. Users habitually turn on their Walkmans the moment they leave their homes, they describe this as "hitting the day positively." Many users describe the experience solipsistic providing them with an "invisible shell" to which both the physical and cognitive space are reformulated to fit within their spectacle. This privatizes the narrative account of an impersonal environment giving an everyday mundane experience control to the user. Allowing them to enhance their sense of control both internally and externally over the environment. This "emotional stabilizer" can be seen as an anti-socialization device or "disruptive technology" where users engage in less interpersonal communication and in more mediated communication. Being with a Walkman is to be absorbed

in a continuous flow of sound that acts as an accessory, mediator/constructor of the users activity. The geography becomes redefined and a personal conceptual space where the visual has minimal significance in their environment, allowing them to place themselves elsewhere in their environment.

KEY POINTS

There needs to be sound-based epistemologies instead of visual-based epistemologies to describe and explain contemporary media behavior. Qualitative research of behavior is an important approach to understand how users benefit from technologies.

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Part X

USABILITY TESTS

THERE ARE MORE WAYS THAN ONE TO SKIN A CAT

HOME-BREWED USABILITY TESTING

THERE'S MORE THAN ONE WAY TO SKIN A CAT

INSTANT MESSAGING WHILE TESTING

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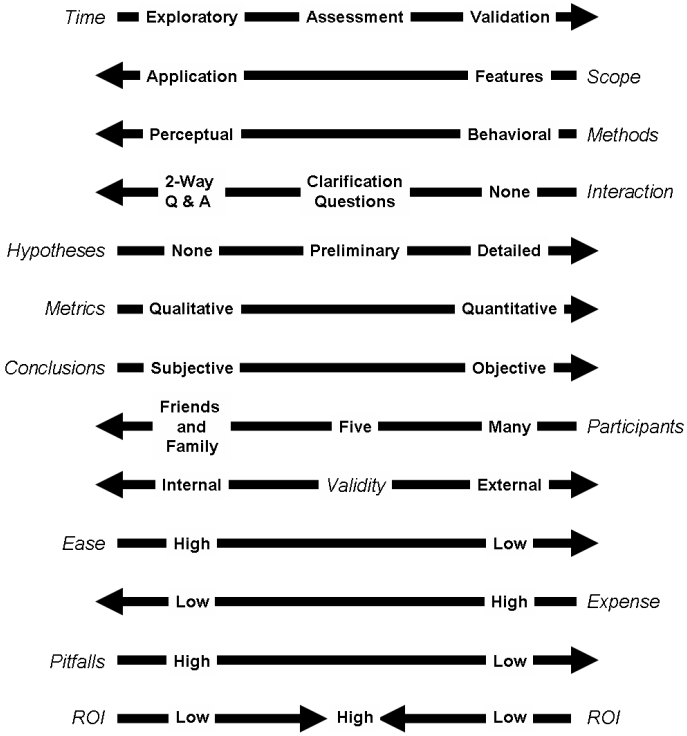
THERE ARE MORE WAYS THAN ONE TO SKIN A CAT

DERRICK PARKHURST

Usability testing is an umbrella term that covers a wide variety of experimental paradigms, each with its own advantages and disadvantages. Below is a diagram that lays out one way to think about the diversity. The chart is organized by the time point in the development process when the test is typically conducted. Exploratory tests are conducted early, usually on the first available prototype. Assessment tests are usually conducted a number of times across the iterative development process. Validation tests are conducted late in the development process.



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HOME-BREWED USABILITY TESTING

JANEA TRIPLETT

Because Don Norman[1] will be speaking at Iowa State's Emerging Technologies Conference,[2] I'm rereading *The Design of Everyday Things*.[3] As you all know, Norman has a lot to say about usability. All semester, I've been studying user research. And this week's chapter reading was specifically about usability testing. So, instead of doing more reading about user research, I decided it was about time to dig-in and to do my own usability test. But, test what? Norman used an example of a stove top to make his point about natural mapping. So, what Everyday Thing could I test the usability of? How about my new French coffee press? It has been about the most useful thing, since my wooden spoon collection, to take up residence in my kitchen. For nearly six months, I've used this French coffee press[4] with enjoyment and without accident. But, would a novice user have the same results? That'll be the subject of my "home brewed" usability test.

AN EVERYDAY THING WITH ÜBER USABILITY

What is it that I love so much about this Everyday Thing? Let me count the ways. I love my French coffee press because:

1. No instructions are required! I was able to take my existing knowledge (boil, stir, press, and pour) and use these skills to make a great cup of coffee.

2. No special tools or tricky add-ons are necessary. I do not need to buy fancy accessories or mess with those pesky coffee filters. All I need is coffee, boiling water, a stirring instrument, and a cup. This saves me money and time.

3. High tolerance for error. Never again will I arrive to work or school wondering, "Hell! Did I leave the coffee pot turned on?!?" The feedback from the kettle whistle on the stove alerts me to the time the water has boiled and to when the stove heat has been shut off.

4. The design is aesthetically pleasing. The French coffee press is sturdy, sleek, and shiny. It's also unusual and distinctive. Of the 392 different coffeemakers sold on Target.com, only 13 were of the French press variety. This makes me feel like I'm part of an exclusive coffee culture.
5. The design is flexible. The French press can just as easily make a wonderful cup of tea from loose leaves as it makes coffee from ground beans. What's more, the container can do double duty as a water or juice pitcher!
6. It's easy to clean and maintain. The French press doesn't hog my limited kitchen counter space. When finished using it, I compost the grounds, wash the container, and put away the French press in the cupboard. This helps me to be more organized.
7. There are no cords. I can make coffee in the kitchen and bring the French press to the table or the patio. The coffee stays hot snuggled in its double-insulated, stainless-steel container. Hey! If I want to be a real coffee snob, the French press would easily fit into my suitcase when I travel west to visit my sister this summer.

   (Coffee addiction or usability obsession—you be the judge.)

USABILITY TESTING

Like I said, I've been using the French coffee press for awhile and I now consider myself an expert user. But, will a novice brewer be able to experience the same über-usability from my beloved Everyday Thing as I have? The testing script was simple. I set out the tools and asked the participant to please make a cup of coffee. I recorded the actions for later observation and analysis. This is what I found.

My participant had never made a cup of coffee in his life. He's a green tea drinker. Despite his lack of experience with brewing coffee, he was able to use the French press with success. The only difference between his first-time encounter and my expert experience was the amount of time the process took him. That was it. When I interviewed him about his experience, he was pleased with the simplicity and the results. He remarked, "as long as I can boil water, I can make coffee with this pot."

LESSON LEARNED

Because this Everyday Thing overflows with qualities of usability—learnability, simplicity, flexibility, tolerance for error, aesthetics—a first-time user was able to produce tasty results right out of the box.

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THERE'S MORE THAN ONE WAY TO SKIN A CAT

TRENT GROVER

To highlight the variation in techniques and results of usability testing, DialogDesign[1] conceived a bunch of CUE (Comparative Usability Evaluation) studies,[2] beginning in 1998.

Several professional usability testing labs were given the same testing assignment and their reports were later compared. It was meant to allow usability professionals to learn from each other, and ended up with some very interesting results. Here are some tidbits from the first CUE study:

- Testing time spent ranged from 24–84 hours
- Number of tests ranged from 4–18
- Length of each test ranged from 4–120 minutes
- Number of reported problems ranged from 4–98
- Almost no positive findings were reported
- There was minimal overlap between the problems found (of 162 problems, only 13 were found by more than 1 team)
- Opposite results were found between teams ("...the users quite liked it..." vs. "...the users did not like the software...")

KEY POINT

There's a huge amount of variation between the processes used by usability professionals that results in hugely disparate results. Which should we believe?

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INSTANT MESSAGING WHILE TESTING

MICHAEL OREN

THE PAPER

I came across a paper entitled "No IM please, we're testing",[1] written by Richard Boardman of Google and summarized in Richard Boardman's blog.[2] It's a very interesting paper about the pros and cons of using instant messengers to communicate between the moderator and observer of usability studies. It's only six pages, so I highly recommend reading it (and I'm not summarizing here or in my presentation in hopes you will read it).

MY OPINION

In the paper, Boardman found that the majority of moderators felt instant messaging between moderators and observers would be distracting and harmful to the study, while observers were generally in favor of the use of instant messengers so that they could discover more about a particular problem a user encountered. My personal opinion on this topic is that an instant messenger link should exist; however, there should be strict rules regarding its use. Here are my suggested rules of use (Boardman has his own list of suggestions in his paper):

- Observers should not be able to add new tasks (at least if comparison between subjects is important—which tends to be the case for usability studies in academia)
- Observers should not expect a reply from the moderator
- The moderator should only send a message to to the observer if the user encounters a bug and the moderator needs a way around it/to repair the situation
- The moderator should wear a single ear ear bud to hear the IM notifications in a way that does not distract the user

- Moderators should position the computer used for IM in such a way that the user cannot view it
- It may be beneficial to have text-to-speech set up so that the moderator can hear the message instead of diverting his/her attention while reading the message
- Observers should send exactly *one* message about any particular request—if the moderator ignore the message then the observer must understand that there is a reason the message is being ignored
- Reading the messages should be the moderators last priority during testing sessions
- 10 messages sent by the observer during a one hour usability test is too many, if the observer has that many questions that require feedback during the study then there is either a flaw in the study and/or the observer and moderator are not on the same page and they need to communicate with one another when the study ends
- When in doubt if sending a message is appropriate, err on the side of not sending the message until the user has completed all tasks

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MORAE: USER STUDY ON A BUDGET

MICHAEL OREN

So you're all pumped up and ready to do a user study *now*, right? Well, I'll have to ask you to hold that thought for just a minute there. If you're conducting a usability or user experience study, then do you have the proper equipment to record the events so you can analyze it later (and review it for issues you may have missed during the initial session)? Do you have a camera and tripod to record the screen (or screen recording software), and another camera/tripod to record the user? What about a microphone and audio recording device to record the user's thoughts as they work through the software (chances are you don't write fast enough to record everything they say)?

If you answered no to one or all of these questions and are intimidated by the thought of having to spend thousands of dollars on all of this equipment and spend hours organizing it for proper analysis, then I have a software suggestion for you. The program is called Morae and is made by the wonderful people at TechSmith makers of the popular Camtasia Studio screen recording software. From the product description: "Morae has three components—Recorder, Remote Viewer, and Manager. These three components work together to record, log and observe, analyze and share the user experience." Thus, you save time and money by integrating all of the hardware you would need into a single software package that, conveniently, also saves you time in the analysis process.

Rather than waste more time spewing information about the product that you can read for yourself on the product web site, I thought I would discuss a Morae case study[1] conducted by Indiana University's User Experience Group.

The story goes that Indiana University was in the process of deploying an online course management system (SAM), similar to WebCT or BlackBoard, but first wanted to conduct user studies to ensure that the software was easily usable and had a usefulness for both faculty and students. This was the first school that would be deploying the software and the administration and IT professionals did not want to simply unleash it without making sure everything worked properly. However, the user experience

group (UXG), which normally conducted these tests, was badly in need of upgrades to their hardware solution to user studies—an upgrade that would have cost them over $20,000. Rather than invest this rather large sum of money on hardware, the UXG decided to give Morae a trial run instead. They used the remote viewing technology to have the designers watch users go through the tasks with a user study moderator in a separate room.

In the end, Indiana University decided to abandon their proprietary hardware solution to conducting user studies for internal projects as well as user studies for enterprises that contract their User Experience Group. They chose this option not only due to the lower cost of the single software solution, but also due to many of the assets of Morae. These assets include the ability for remote viewing, lossless codec for screen capture recording, picture-in-picture viewing (so they could see the subject at the same time as the screen), and a reduction in the amount of time it took to organize and analyze the users study data (thus further reducing costs).

WHAT TO REMEMBER

There is no need to spend thousands of dollars and hours of setup, organization, and analysis to conduct a proper user study. By using Morae, or a similar software solution, you can save time and money conducting user studies and simplify the process so you can focus more on the users rather than study.

Disclaimer: I have never used Morae and therefore cannot directly endorse it. However, my previous experience with another of TechSmith's offering, Camtasia Studio, has been very positive.

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PAPER PROTOTYPING

KEVIN GODBY

One of the problems with iterative design is how to go about getting feedback from the users early enough to impact the design and development process. If you wait until the first version of the software has been written and then have users test it, you wouldn't have any time left to actually make the changes you want to experiment with.

BENEFITS OF PAPER PROTOTYPING

Instead of waiting for the developers to finish writing the first version of the software, you can have your users test the ideas and features of the software with a paper prototype. According to Carolyn Snyder, author of *Paper Prototyping: The fast and easy way to design and refine user interfaces*,[1] paper prototyping is: "a variation of usability testing where users perform realistic tasks by interacting with a paper version of the interface that is manipulated by a person 'playing computer,' who doesn't explain how the interface is intended to work."

Another benefit of paper prototyping is that since customers generally gauge the progress the software's development based on how the interface looks, you won't give them the wrong impression by using a paper prototype early in the design process. "If you show a nonprogrammer a screen which has a user interface which is 100% beautiful, they will think the program is almost done."[2]

Also, most users, when they see an interface that looks complete, will not point out the fundamental flaws in it. They will instead focus on the pixel-level details.the typeface, the colors, font sizes, etc. If you instead give them a simple sketch, they'll tell you what's wrong with your ideas and what features are missing or can be removed. In short, "The more 'done' something appears, the more narrow and incremental the feedback."[3]

LIMITATIONS

While paper prototyping provides a fast and cheap way to test many user interactions, there are some problems that paper prototyping won't help you uncover.

- Time delays—Paper prototyping won't communicate to the user how long a screen takes to load or refresh.
- Scrolling—While you can (with some pains) fake scrolling using paper prototypes, they won't show you want content will cause horizontal or vertical scrolling on the user's real screen.
- Visual design—Since you're just using quick sketches for the interface, paper prototypes will also not help you find issues with specific colors, images, or fonts.
- "Feel"—If a feature relies very heavily on "feel," paper prototyping won't provide enough detail to help with the design.

CONCLUSION

While paper prototyping has some limitations, it's one of the cheapest ways to get real feedback about a design.

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WHO THE BLEEP ARE YOU?

TRENT GROVER

After all of our recent talk about diaries, surveys, focus groups, etc., it really struck me that when conducting any user research, no matter what you do, your success or failure always rests in the hands of the users themselves. More specifically, we are beholden to the expected reliability of their answers, and thereby in some sense to their psychological character.

Is this user the type that will honestly and freely tell me what they're thinking at all times? Be realistic, those guys are few and far between. More often than not, the user's responses to your efforts are somehow altered between their brain and your ears. They may want to be nice. They may want to be mean. They may want to be popular or feel smart or important. They may just want to get out of there as fast as possible with your $50. This problem brought me around to the concept of anonymity. The most common solution to this censored speech issue is to make all responses anonymous, so let's take a closer look at that.

The opposite of anonymity is ... Anybody? ... Anybody? ... onymity. You know exactly who you're talking to and therefore potentially have access to lots of information about them. Unfortunately, as we already know, this very fact may change their responses because they believe that these responses will affect your perception of them in some way.

Anonymity addresses this problem by offering privacy. The anonymous enjoy a unique freedom of expression without any accompanying fear. Democracies use secret ballots for a reason. Anonymity has helped fight crime and injustice by protecting whistle-blowers from retribution that would ultimately ruin their lives. It has allowed internet communities to develop, in which people can openly discuss their problems with like minded individuals with shared experiences, serving as almost free group therapy.

All these things are benefits to the anonymous, but, at the same time, they are problems for the researcher/reader/observer. Anonymity ultimately removes any sense of accountability. When you are free to say whatever you want without repercussion, not

everyone behaves altruistically. Spammers fill our email boxes with annoying drug ads without providing any way for us to complain. Though groups of people can come together anonymously for positive ends, they can also come together for negative ones. Deviants (pedophiles, etc.) and sociopaths can feed off one another, deepening or validating their delusions further. Hate speech is also increased. Poison pen letters, or even death threats, become incredibly easy to execute. Anonymity has been used to illegally move secret information and spread false and inflammatory information.

As a direct result of this lack of accountability, journalists and police officers are discouraged from using anonymous sources. Many intellectual authorities are left unable to respect anonymously generated entities like Wikipedia as trusted sources of information. In some cases, the anonymous collaborative process, like that of wikis, still results in reliable information, but only if a sufficient quantity of people take the time to verify and correct the information. Accuracy of information becomes the only way for that anonymous contribution to survive.

I realize I've sidetracked a little bit from user experience testing when talking about the pros and cons of anonymity, but I'll get closer to my point by pointing out a third option, pseudo-anonymity. It's easiest to talk about this by way of example, so let's take a look at eBay. On sites like eBay, you set yourself up with a username and password. From then on, the system administrators know a bit about who you are, but your fellow users know very little. The only readily accessible information to the general user is the information that is relevant for the specific use of eBay: your transaction history. Since people are going to be buying from or selling to you, it's perfectly reasonable for them to know whether you're legitimate or not before engaging you in a transaction. For this purpose, things like your gender, age, race, etc. have no logical bearing so they are ignored or obscured. Similar things happen on online forums. Your username is associated with the information you post, and thereby let's others gauge the validity of your information by the perceived validity of your previous contributions.

Would some form of pseudo-anonymity be beneficial in user experience research? I think so, but I'm not sure how best to execute on these concepts. I'll just leave that as my challenge for you. Enjoy.

KEY POINTS

- Anonymity is a blessing and a curse.
- I challenge thee: Incorporate pseudo-anonymity into user experience research!

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USABILITY TESTING OF MOBILE PRODUCTS

ERIC DREWSKI

With the introduction of mobile communication products such as cell phones, PDA and MP3 players, it has become more difficult to conduct usability testing. Lab testing has become an inadequate form of testing mobile products because it cannot recreate real-world settings and situations. Different usability testing methods are needed to find out what users want from these devices and why they use them.

LAB-BASED RESEARCH

Lab-based research has a number of appealing benefits. It allows for a great deal of control over variables within the testing setting. This is particularly useful in controlling distractions so as to avoid influencing the user's actions, thoughts or feelings while participating in the test. Detailed tasks can be created that focus testing on particular aspects of the product design. Video recording can be used for unobtrusive observation. While lab-based research has many benefits its primary drawback for testing mobile communication products is the difficulty in creating a level of interactivity with the product that is believable and matches the actual usage of the product in the real world.

CONTEXTUAL RESEARCH

Contextual research is able to measure the psychological, sociological, organizational and environmental attributes in mobile devices. These measurements are necessary because the usage of a mobile device is strongly linked to time and location. The goal of contextual research is to gain additional insights in the modes and patterns of behavior of the attitudes. Contextual research methods include discussion groups, in-depth interviews, video-observation and diary studies. Each of these methods can gather a significant amount of information about the patterns of people's behavior, feelings and modes of interactions.

KEY POINTS

- Lab-based research is not applicable for testing mobile communication devices because they can't provide real-world environments and situations.
- Usability methods such as focus groups, interviews and observation field studies are much better at assessing the uses and gratifications of new media devices.

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PROBING THE USER EXPERIENCE

DERRICK PARKHURST

In one sense, science begins with observation and as such, we have been learning how to observe the user experience. However, what we actually observe is the user's behavior from which we must derive an understanding of the user's experience. This is a non-trivial difference because the user's experience is not necessarily easy to determine from a user's behavior. Even asking the user directly about their experience has its problems. The inevitable incompleteness of pure observation can lead to much after the fact guesswork.

In another sense, science begins with theory. In the context of studying the user experience, we can, for example, formulate hypotheses about the cause of usability problems. Each hypothesis must have testable predictions that can render the hypothesis false. These predictions can then be used to probe the user experience by directing us to ask certain questions or make particular observations. This method of hypothesis-directed testing can rapidly get us to the answers we need in order to improve usability. The resulting positive shift in mindset is from "what do we measure?" to "what could be the problem?"

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USABILITY SMACKDOWN

DERRICK PARKHURST

In contrast to pure observation, hypothesis testing is a theory-directed method of investigation that can be applied to user research studies. Hypothesis testing can be broken down into a six step process. The first step is to identify the theoretical or empirical question which motivates the research. This question should then lead to the development of a number of plausible alternative hypotheses that might answer the question. Each hypothesis can then be tested if a logic in the form of "if $x \rightarrow$ then y" predictions can be derived. If not, the theory may not be testable (or falsifiable). From the predictions, an experimental method can be developed to test the hypotheses. Once the experiment has been conducted, the results should be summarized such that it can be inferred which of the hypotheses were supported or falsified.

In the abstract, hypothesis testing can be opaque, so here is an example of its application derived from Kantowitz et al.[1] These investigators asked if drivers would utilize traffic information provided by in-vehicle navigation systems to improve driving performance. One hypothesis is that drivers will use all available information to optimize their driving performance. This hypothesis predicts that if drivers use all available information, they will benefit from in-vehicle navigation aids when accurate and available. However, inaccurate information should be detrimental to driving performance. Another hypothesis is that drivers will prefer to rely on their own memory when possible in order to optimize their driving performance. This hypothesis predicts that when the driver is familiar with the driving area, navigation aids will not be used, even when accurate and useful navigation aids are available. Also predicted is that if the driver is unfamiliar with the area, navigation aids will be used. To test these hypotheses, a driving simulation study was conducted in cities familiar to the participants and in cities not familiar to participants. One group of participants received accurate navigation aids and the other received inaccurate navigation aids. Everyone performed poorly in the navigation task when inaccurate aids were provided. Interestingly, when accurate navigation aids were provided, navigation

performance was better when the drivers were in an unfamiliar city that when in a familiar city. The researchers inferred that drivers familiar with the city layout do not optimally use navigation aids because they prefer to rely on their memory.

Hypothesis testing can efficiently direct user research towards answering important questions when plausible hypotheses are constructed in advance, saving time, effort and money when compared with purely observational studies.

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Part XI

SURVEYS

INCREASING SURVEY COMPLETION RATES

ALL HAIL *cosmo*!

SURVEY SOFTWARE

HOW TO ASK CHILDREN: SURVEY METHODS FOR CHILDREN–COMPUTER INTERACTION

SURVEY PET PEEVES

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INCREASING SURVEY COMPLETION RATES

MICHAEL OREN

In this essay I will discuss a paper entitled "Use of pre-incentives in an internet survey" written by Guin et al.[1]

If you don't already have a user base to pull from to conduct a survey, then finding people in your sample space to survey can be a chore. On top of that, you also have to find people that are willing to take your survey—or convince them that it is in their best interest. Even if you already have a site with users you want to survey, you still face this same challenge of getting them to take the survey.

Having taken at least a hundred Internet surveys—mostly product surveys, but on rare occasions a survey about a web site—there are a few things that I feel work better to motivate me than others. Giveaways appeal to me if the item being given away either has "pretty good odds" (e. g., every 1 in 100 people wins x item) or the prize is something significant (e. g., a Nintendo Wii at a time when they are next to impossible to find). However, unless the giveaway is from a site that I know and trust (such as Amazon) then I am likely to just ignore it and treat it as a scam. As an undergraduate I used to take surveys where you get x number of points and then after getting 800 points (roughly 4–8 surveys—each 30 minutes or longer) you could cash them in for a whopping $5 gift card. However, now that I have less free time, I ignore surveys like that and I feel that most people without incredible amounts of free time are likely to do the same. There was also another survey site that I participated in that paid $1–2 per survey, but I quit after a little while because they required a certain amount of money to be accumulated before it could be transferred to an account and even then it took 60 days to get the money—making it more trouble than it was worth.

The one type of survey that I still take—and I'll take it within a week of getting an invitation—is with a site that pays $5 per survey (not including screening surveys) within two days of completing the survey. They actually used to mail the checks out before surveys were completed—trusting that the surveys would be completed within the allotted time frame, but with their recent

move to payments via PayPal this practice was stopped. However, when this practice was in place, I made an extra effort to make sure the surveys were completed because I felt compelled to complete the surveys knowing I had already been paid for them.

This is the idea behind pre-incentives: people will feel compelled to complete a survey if you give them something before they have completed it—they will feel obligated to complete the survey. This is why pre-incentives have been shown to increase survey completion rates by 5% or more even when the amount paid out is less than that of an incentive paid out after a survey is successfully completed. One can make things even less expensive by giving out an entry to a prize giveaway before completing a survey and then giving out another entry after the successful completion of the survey—although studies need to be done to confirm the effectiveness of this method.

BOTTOM LINE

I write too much. But aside from that, you have to make sure that your incentive is worth the time of those you are targeting the survey toward. You also have to make sure you position it in a way that people don't view it as a scam. Providing a pre-incentive shows good faith on the part of the survey, removing any notion of it being a scam, as well as providing a compelling reason for people to complete the survey as many people will feel obligated to complete it, having already received payment for it.

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ALL HAIL *COSMO*!

TRENT GROVER

Who actually answers surveys anyway? I avoid them like the plague, so why do some people fill them out voluntarily? The obvious answer is that they're paid for it. Some people get cash, gift certificates, prizes, or sweepstakes entries. The coolest incentive I've seen offered is power. Some software products allow survey takers to help prioritize future development (bug fixes, new features, etc.).

Incentives like these can help increase the number of surveys you get turned in, but they do nothing to ensure that the answers are valid ones. It's easy to fill in all the circles on the sheet and grab your prize without putting any real thought into your answers, thereby rendering the data useless. This is known as shirking. You can try to avoid this effect by carefully formulating your questions so that no real thought is necessary, or try to identify shirked answers by measuring the time taken to answer questions.

Is there a better way to ensure that people want to take your survey and give you useful data? I think we can learn a lot from self-identification quizzes. Lots of people take career placement tests, personality tests, and novelty quizzes (all hail the *Cosmo* Quiz![1]) with no concrete incentive whatsoever. Why do they do it? I think it's because they have an implicit psychological incentive. Everyone is interested in themselves and these quizzes reveal what your answers say about you. Could working these concepts into your own surveys have a big impact on the volume and quality of your survey results? Would this really work? I think so, but you tell me.

KEY POINT

When creating surveys, don't forget about psychological incentives.

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SURVEY SOFTWARE

JANEA TRIPLETT

I'm supposed to be writing about survey software. In my presentation, I evaluated two very different survey software tools—Web Monkey and WebCT. As I dug around this week looking for additional tidbits to include, I now remember what I have forgotten to write about all semester! I could just kick myself! Shamefully, I have been so entrenched in studying user research that I neglected to bring up the importance of accessibility.

SIDEWALKS AND WEBSITES

Let's go to the physical world for a moment. Take the analogy that Web accessibility is like a sidewalk curb cut—both increase usability. For those of us like me who are old enough to remember when curb cuts weren't around or who travel to other countries where they have yet to be adopted, we now see how curb cuts benefit everyone from people using wheelchairs to people using inline skates. For the sake of time (I could write a novel about this topic), browse through W3C's introduction to Web accessibility.[1]

WHERE I'M COMING FROM

For over a year I was a graduate assistant for the Assistive Technology Lab at Iowa State. I would link to their website, but unfortunately the funding was cut and the doors are now closed. I learned a lot that year. I enjoyed working with people to figure out how technology might help them do their jobs, go to school, or just enjoy living life.

When a technology was usable, I noticed how it would easily shift from serving users with disabilities to serving users with other needs or constraints. I saw how dual-monitors benefited a sports writer with cerebral palsy just as the same set-up benefits serious online gamers. I saw how text-to-speech software benefited a student with dyslexia just as the software benefited a multitasking Ph.D. student who needed to have articles read to her

while she fixed dinner for her three children. I also saw how text transcripts of video conferences benefited a frequent-flying CEO just as the transcripts benefited a busy college student with a hearing loss.

For me, accessibility and usability are part of the same circle. As something becomes more usable, it becomes more accessible. And as something becomes more accessible, it becomes more usable.

SHOULD HAVE

If I were to give another presentation about survey software, I would talk about survey tools and accessibility. And these would be my three sources:

1. Survey Tools and Accessibility[2]
2. Seeking an Accessible and Usable Survey Tool[3]
3. Accessible Forms[4]

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HOW TO ASK CHILDREN: SURVEY METHODS FOR CHILDREN–COMPUTER INTERACTION

ELENA MAXIMOVA

Apparently, children have a world of their own, so it makes sense for software or web developers who attempt to create a product for children to ask children about their preferences directly instead of making conjectures based on the developers' assumptions about the children's world. Asking children using survey-style questions may be a major challenge—especially with younger kids. Why? Here are some reasons:

- Children's views and opinions are often "black and white" without "shades of grey." Thus, kids tend to respond to scale questions selecting extreme values (e. g., very satisfied or very unsatisfied).
- Children's verbal and reading abilities have much more variability than those of adults and children often take things literally so the questions must be created with utmost care for the words used.
- If there is an interviewer on-site, his or her status may affect children's responses (e. g., children may report different experiences with a product depending on who asks them, e. g., teacher or parent).

Even though there is no perfect solution to all the problems arising from conducting surveys with children, there are some helpful guidelines:[1]

- Keep it short—children have short attention spans.
- Watch the language—make sure that words have the same meaning for children as they have for you.
- Don't make them write a lot—in open-ended questions use spoken response or have them draw pictures.
- Make it fun—create a children-friendly environment.

- Be careful with generalizing your results—results gathered from a set of children at one school may not be extrapolated to another.
- Let them get to know you—learn children's culture and let them know and trust you.

KEY POINT

Conducting usability surveys with children is challenging and the results may be biased, but the value of surveys with children is rather in understanding trends and values of children's worlds than in quantifiable results.

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SURVEY PET PEEVES

KEVIN GODBY

There are a number of little details that can make or break your survey. Here is a short collection of my pet peeves and tips for writing survey questions.

MAKE ANSWERS MUTUALLY EXCLUSIVE

How many days per week do you wear socks? ❍ 0–1 ❍ 1–2 ❍ 2–3 ❍ 3–4 ❍ 4–5	How many days per week do you wear socks? ❍ 0–1 ❍ 2–3 ❍ 4–5 ❍ 6–7

If I wear socks three days a week, I don't know which option I should select in the first example. In the second example, the choice is obvious.

DON'T MAKE THEM REACH FOR THEIR CALCULATORS

How many hours a year do you use the Internet?	How many hours a day do you use the Internet? How many hours a week do you use the Internet?

In the first example, I would have to estimate how many hours a day I spend on the Internet and then multiply that a few times to get the hours per year. That's a lot of work! Instead, you should estimate what the proper time period should be when writing the question. If you anticipate that people use the Internet a few hours each day, then ask for the answer in hours per day. If you

suspect that they only use the Internet a few minutes each day or a few hours each week, change the wording accordingly.

PROVIDE A NEUTRAL OPTION ON THE LIKERT SCALE

Cold pizza is good for breakfast. ❍ Strongly disagree ❍ Disagree ❍ Agree ❍ Strongly agree	Cold pizza is good for breakfast. ❍ Strongly disagree ❍ Disagree ❍ Neither agree or disagree ❍ Agree ❍ Strongly agree

MAKE IT CLEAR WHEN THE RESPONDENT CAN PROVIDE MULTIPLE ANSWERS

Which flavor of ice cream do you like? ❍ Vanilla ❍ chocolate ❍ Strawberry	Which flavor of ice cream do you like? *(Choose one.)* ❍ Vanilla ❍ chocolate ❍ Strawberry
Which pizza toppings do you like? ❍ Pepperoni ❍ Cheese ❍ Sausage ❍ Anchovies	Which pizza toppings do you like? *(Choose all that apply.)* ❒ Pepperoni ❒ Cheese ❒ Sausage ❒ Anchovies

It should be obvious to the respondent when they can select more than one answer. In the second example, I've added the notes "*(Choose one.)*" and "*(Choose all that apply.)*". I've added another small visual clue by changing the selection circles to boxes to indicate that more than one choice is allowed.

DON'T PROVIDE SO MANY OPTIONS THAT IT'S DIFFICULT TO CHOOSE

What is your favorite color?

❍ Amaranth	❍ Blue	❍ Cyan	❍ Indigo
❍ Amber	❍ Brown	❍ Emerald	❍ Ivory
❍ Amethyst	❍ Cerulean	❍ Eggplant	❍ Jade
❍ Apricot	❍ Cinnamon	❍ Forest green	❍ Lavender
❍ Aqua	❍ Copper	❍ Fuchsia	❍ Lemon
❍ Azure	❍ Coral	❍ Gold	❍ Lilac
❍ Beige	❍ Cream	❍ Goldenrod	❍ Lime
❍ Black	❍ Crimson	❍ Grey	

This one is pretty self-explanatory. If you overwhelm the respondent with choices they'll likely give up and pick the first one that seems reasonable.

DON'T EXCLUDE POSSIBLE RESPONSES

How many hours a week do you spend watching television?
❍ 1–5
❍ 6–10
❍ 11–15
❍ 16–20

How many hours a week do you spend watching television?
❍ none
❍ 1–5
❍ 6–10
❍ 11–15
❍ 16–20
❍ more than 20

You should consider the edge cases. For instance, the respondent may never participate in an activity or perform some task. Also, you shouldn't put an artificial upper limit on the responses.

MORE TIPS

- Placing the demographic questions at the end of the survey may result in more complete responses since the respondent has already invested time in the survey.
- Instead of asking "How old are you?", ask "In what year were you born?" You'll often get more responses this way.
- If you're asking an open-ended question and provide lines on which to write the answer, double-space the lines so the respondent has plenty of room to write. (I hate it when I have to squeeze my handwriting into a 1/8-inch high space.)

- Clearly indicate which questions are required and which are optional.
- When requiring personal information, explain what you will use it for.

Part XII

ONGOING RELATIONSHIP

DIARIES: WINDOWS INTO THE USER'S WORLD

DIARY STUDIES ARE SILLY

ONGOING RELATIONSHIPS IN TECHNICAL COMMUNICATION

RELATIONSHIPS VIA THE INTERNET

64 DIARIES: WINDOWS INTO THE USER'S WORLD

MICHAEL OREN

Here's a blog of diary entries regarding the usability of NetFlix over a one year time period from 2002–2003.[1] I have no plans on talking about it, but I thought some of you might find it interesting. Diaries is an area I have absolutely no experience with (on either the keeping a diary end or having people keep one and then analyzing it). I have had some experience with an advisory board (or ongoing focus group) though, but I felt like writing about the diary side of ongoing relationships. So here are what I feel are the main pros and cons of diary studies (which should be taken with the appropriate grain of salt):

Pros

- Allows for extensive qualitative data collection from users—qualitative data obtained from usability studies only gives you data for the situations covered in the study; diaries give you data about the actual user experience throughout the entire product and throughout a significant period of time
- Allows problems to be found over a period of extensive use—sometimes an interface seems like a good idea when first using it, but you later discover it's horribly inefficient and slows things down
- Allows you to explore usage patterns over time—features that users may have found useful at first, they may later decide doesn't really do it for them
- Allows you to see the transition from a novice to an intermediate or expert user and discover changes in interaction style

Cons

- Lose the ability to clarify the comments—unless you have the ability to read the entries immediately after posting them, the

user may not remember the situation well enough to provide additional feedback

- Depending upon the length of the diary study, the amount of time required to do one (and read the entries/analyze the results) is far too long to be useful for most new products
- Users may lose interest/motivation to complete diary entries and the quality of entries will likely diminish over time without constant positive reinforcement
- It is a very time consuming endeavor for both the users as well as the researchers (who have to read and analyze all the entries)
- Over time, the user may form a biased opinion as they go from a novice user to an intermediate or expert user
- You cannot see the user interacting with the product, you have to rely on the users memory of their usage of the product and this could lead to inaccuracies

An easy way to counteract a lot of the cons is to have the users keep their journals online, perhaps in the form of a blog (much like the one I linked to at the top—and you thought I had just posted it for fun). This has a couple of advantages:

- It allows for immediate access to entries, thus preventing a researcher from having to read a slew of diary entries all at one time
- It allows for the chance to seek feedback from the user regarding the entry—the entry is available immediately and read immediately so the user can be queried about it before s/he forgets about the instance
- If the diary is a public blog, it is possible that the entries will create "buzz" for your product (public entries may not always be best though, especially if you're just starting out and there are a lot of bugs or other issues you'd prefer to keep quiet)
- It allows the researchers to know if user interest/motivation in keeping a diary is waning, and thus provide positive reinforcement to encourage the user to keep up with it

- Since the feedback is immediate, you will be able to begin making improvements to the product faster—instead of waiting for the diary pages to be turned in

You can also combat the effects of user bias simply by keeping in mind that the user will likely no longer be a novice user after several weeks of using your product. The amount of time it takes to do a diary study can be shorter—if you're only interested in the use of it for a week or two weeks, but with the exception of reducing the length of the study there is no real way to combat the amount of time required by the user and researcher with this type of technique.

WHAT TO REMEMBER

If you're going to do a diary study, you should have a way for the user to do the entries electronically (even if it's only via e-mail) and strongly encourage the user to use the electronic version of diary entries—although allow users to use a more traditional paper based diary format if she or he prefers that method. It eliminates/reduces many of the major negatives associated with diary studies and it will make your job as a researcher considerably easier as you will be able to take the entries in blocks rather than as a whole (although analysis as a whole will still be needed).

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DIARY STUDIES ARE SILLY

JANEA TRIPLETT

I found diary studies as a research methodology to be kind of silly. And invasive and unreliable. Be warned. These feelings are probably bubbling-up because it's the end of the semester and I'm grumpy. Also, my mental model of the concept of "keeping a diary" differs dramatically from the proposed research method.

DEAR DIARY

As a young girl, I kept a diary. I still keep a travel diary. My candid retelling of daily events would be very much censored if I thought another soul would be flipping through its pages. Even Anne Frank kept a private diary known as "version A" and an edited diary she called "version B."[1]

USABILITY PAPARAZZI

I can't put my finger on exactly why this research method seemed overly pushy. User observation is also invasive, but in that technique the burden of gathering evidence is placed on the researcher and not the subject. The diary studies method seemed more akin to Usability Paparazzi—hounding the user for every minuscule detail of their daily interaction with our product. How much information is enough?

DOES ANYONE REALLY DO THIS?

With that said, I skeptically wondered "does anyone really use diaries as a user research method?" I found a London-based HCI consultancy group[2] which gave convincing commentary[3] on why and how they used diary studies.

First the article criticized traditional usability testing methods. The author stated that laboratory testing was "contrived" in that it was artificial and overly controlled. Also criticized were ethnographic methods. As the author rightly pointed out, qualita-

tive ethnographic research often happens just in name, but lacks necessary rigor.

AN ALTERNATIVE

Diary studies were then offered as an alternative to traditional user research. The reasons given were that user diaries have been found to be valid, cheap, replicable, and flexible.[3] The author also noted that their consultancy firm had been conducting diary studies in various locations. From their experience, the author offered several recommendations. Participants should be given a digital voice recorder, payment for services should be contingent on completion, and the diary study should be followed-up with in-depth interviews.

JURY IS STILL OUT

HCI literature is sparse on the subject of diary studies. I'm still not convinced that this method has value. However, when I encounter future studies involving user diaries, I'll be less inclined to flippantly toss the research effort into the silly category.

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ONGOING RELATIONSHIPS IN TECHNICAL COMMUNICATION

ERIC DREWSKI

An ethnographic study on serving-learning was implemented by Matthews and Zimmerman in the classroom setting to see if there are any benefits from students learning about technical communication.[1] The study revealed students had a difficult time with nonacademic writing and experienced team conflicts over how to write technical documents. There were, however, some benefits, such as improved academic learning and accepting responsibility for their own education.

Service learning is a "new pedagogy merging community service and classroom learning" to improve students' abilities to apply their knowledge of theories and models in technical communication to real-life situations and service experiences. Unfortunately, there is not an agreed upon definition of service learning. Advocates of service learning argue that there are a wide range of benefits, such as developing rhetoric skills and writing for nonacademic audiences. This motivated them to seek out information on the product/service and the intended audience for which they are writing.

Qualitative research was used to best determine students' benefits of service learning. Projects were selected based on how technical the subject matter was and the amount of work each project involved over a semester. Students wrote response papers after various stages within each project. One-on-one interviews were conducted with each student. The goal of this study, "was to participate with-and observe-students as they interacted in a particular technical communication class and to weave together an explanation. . . of the values, beliefs, problems, and patterns of behavior of those involved in this study."

The results showed that the projects improved academic learning by forcing students to gather information about their audiences and how to write technical documents for their intended audiences. The most motivated students, "made an effort to educate themselves about our organization and to provide a document that would further our mission." Technical communication forces

students to take an active role in developing professional documents, their own education and pride in their work. However, many of the students did not enjoy the work they were assigned by the organization, such as the American Cancer Society and Habit for Humanity. The students saw it as charity work with no way for further advancement in developing necessary skills or building their resume. Also, the misunderstanding of the rhetorical nature of the produced documents affected how students rated their overall experience with the nonprofit organizations.

KEY POINTS

- Technical Communication motivates some students to gather information about their organizations.
- Whether the students take any pride in their work depends on the organizations they work for.
- Technical Communication seems rather boring to some students and they do not see the benefit in taking such a class.

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RELATIONSHIPS VIA THE INTERNET

VALERIE WILLIAMS

Calling all Internet-savvy performing artists, video jockeys, and composers. Wanna help make some software? You'll use your own equipment, but can call on other user's knowledge and experience to get a better show for yourself. We'll support you with workshops (you pay), listservs, a forum, and a wiki page, a really good form for reporting bugs, and free download of the fully functional program (that won't allow you to save your files unless you purchase it).

Who responds to this kind of request and why?

Software testing is a high-dimensional problem that even large companies have problems solving. Testing means running the software through as many of the program paths as possible. There are simply too many paths in the code to check for correct operation. So companies first test the software for normal operation. Then "beta" testers use the software to find bugs, usability issues, and other problems. Finding those "beta" testers and getting adequate reporting requires a lot of time, effort, and money.

How does a single developer test for usability? Can a single developer or a small company engage the user to test their software and yet maintain a good relationship with the user?

A small company with limited staff has a difficult time with user testing because of the lack of time and resources. But potential users may be interested in helping the developer. Testing software that has a specific user base with a small user group makes testing easier. Users who like the program will exercise it in unexpected ways.

This experiment has worked for Mark Coniglio (Isadora software) and has not only resulted in robust software, but a dedicated group of users who now sustain a virtual helpdesk through a forum. This is a creative response to the testing problem. We know that creative responses frequently work, and that responsiveness makes for good relationships. Coniglio fixes bugs immediately and adds features quickly. Iterative refining of software comes from the ongoing relationship between Coniglio and the users, and allows him to add features that are customer driven, not

guesses. Refined software keeps the users interested in Isadora. And, best of all, Mark is making money for his work.

Part XIII

APPENDICES

CONTRIBUTORS

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A

CONTRIBUTORS

ERIC DREWSKI graduated from the School of Journalism and Mass Communication at the University of Minnesota–Twin Cities with a bachelor's degree in mass communication. He is currently working towards a master's degree in journalism/mass communication at the Greenlee School of Journalism and Communication at Iowa State University. He is researching the uses and gratifications derived from mobile communication devices, specifically MP3 players. Eric's research interests include informatics, information science and scientific and technical communication.

KEVIN GODBY has degrees in computer systems/networking, technology management, and psychology. He is currently a doctoral student in the Human Computer Interaction Program at Iowa State University. His research interests include user interface design, developmental robotics, human–robot interaction, computational linguistics, and cognitive psychology. Kevin can be contacted at godbyk@gmail.com or `http://kevin.godby.org/`.

TRENT GROVER graduated from Iowa State with his bachelor's degree in computer science in 2001, where he was already exploring the artistic uses of technology. Before graduation he cofounded Micoy, a company specializing in immersive video technologies. As acting CTO, he has developed five patents in the area of panoramic stereoscopic video capture and display technologies. Trent has since returned to ISU to pursue his master's degree in integrated visual arts, focusing on novel uses of technology in the creation of interactive fine art.

ELENA MAXIMOVA is on a quest to bridge the divide between art and science through human–computer interaction. Originally trained as an actress at the Russian Academy of Theatre Arts in Moscow, she has also worked as a fashion photographer, costume and set designer in her native Odessa, Ukraine, before moving to the United States and earning bachelor's degrees in management information science and accounting. She is now working towards a doctorate in the Human Computer Interaction Program at Iowa State University, where her thesis project involves the production of Eugène Ionesco's "The Chairs" in a virtual reality environment.

MICHAEL OREN is currently pursuing a master's degree in the Human Computer Interaction Program at Iowa State University (Ames, Iowa). He did his undergraduate study at DePauw University (Greencastle, Indiana) in computer science and English. Mike's thesis work is on an audio game for the visually impaired, which attempts to represent the core objects in a platform game (think Mario or Sonic) through audio cues. The goal of the project is to create an audio game where people with visual impairments will be able to complete levels in roughly the same time as sighted users playing the game wth graphics.

DERRICK PARKHURST was the instructor of record for the course that resulted in the creation of this text, but is much more of a student than any of the actual students realize. Derrick is also the associate chair of the Human Computer Interaction Program at Iowa State University and assistant professor in the Department of Psychology. His research interests include understanding how humans process visual information and the development of new human computer interfaces. Derrick can be contacted at derrick.parkhurst@gmail.com.

JANEA TRIPLETT is a doctoral student in Human Computer Interaction at Iowa State University. Her background is eclectic. In the early 90s she stumbled into Web development. A decade later, she returned to school to pursue studies in anthropology, business, language, and sociology. As a volunteer consultant, she has worked in Africa and southeast Asia on systems design and small business development. Her research interests include health information systems, assistive technology, geographic information systems, and technology and social change.

Choreographer, dancer, and director, VALERIE WILLIAMS has been working professionally in modern dance, musical theater, opera, and Renaissance dance since 1973. She believes that dancers are smarter than dogs and in 2001 became interested in developing interactive technologies that allow her dancers control over their stage environment. Currently she is working toward a master's degree in HCI at Iowa State University. She continues to make dances that you can check out at `http://www.vjw.biz/`.

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