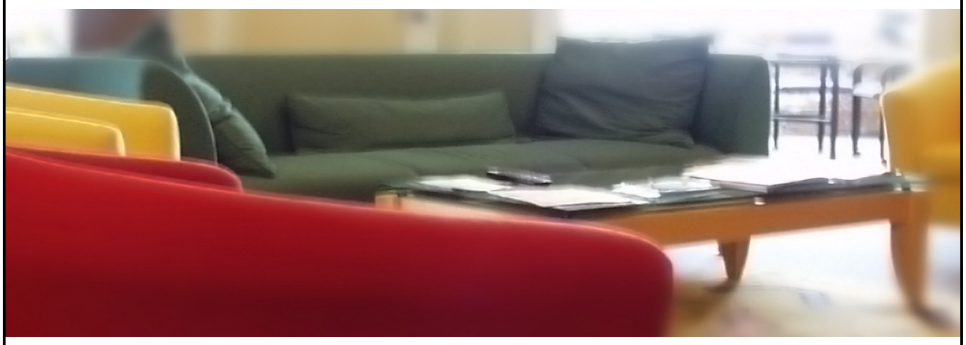
Field Studies

The Ultimate Tool in Your Usability Toolbox

UIE Virtual Seminar
20 March 2007



Kate Gomoll
Gomoll Research + Design

the process

- understanding the problem
- identifying users
- identifying the work
- preparing for the visits
- conducting observations and interviews
- analyzing the data

the philosophy

- be flexible in your methods
- a little can go a long way
- quantify what's quantifiable
- respect the experiential

selecting the right project

- you have some ownership
- customers want it
- management wants it
- it has visibility
- it's manageable
- there is little organizational resistance
- it's easy to identify, contact, and travel to users
- it's new or ready for changes

convincing management

- the competition is using these techniques
- customers are demanding usable products
- there are more discretionary users
- this approach saves time and money
  - support calls
  - training
  - costly re-design
  - lost sales
  - errors

knowing your team

people you might want on your team:

- domain expert
- software engineer
- interface designer
- product manager
- technical writer
- product marketer

determining the user groups

- are there different roles?
- how might demographics correlate with behavior?
- rule of thumb:
  5 – 8 participants per distinct user group
- develop a matrix of criteria and get buy-in from stakeholders.

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Sample Matrix

We will visit four sites of various sizes. Some will handle a relatively low work volume and some will handle higher volume. The sites will be located throughout the continental United States. We will work from the following list of sites to find participants for this study:

Site	*Small*	*Medium*	*Large*
Wisconsin	X		
California			X
Georgia			X
Connecticut		X----------	X
Arizona	X----------	X	
Florida		X----------	X

At each site, we will interview managers. We will observe workers in differing roles and ask interview questions as they perform their work. We will meet with individuals in a variety of roles.

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developing a screener

- disqualifiers at the beginning
- demographics from matrix
- criteria:
  - job role
  - age
  - work experience
  - education
  - training
  - computer experience

finding people to study

- marketing leads
- customer registration databases
- sales force leads
- alpha and beta test sites
- people who bought competitors' products
- market research firms

cataloging tasks

- ask domain experts
- use the product specification
- conduct surveys or interviews
- conduct “day-in-the-life” studies
- group resulting tasks into categories
  - ask users to rank the tasks by frequency
  - ask managers to rank the tasks by importance
  - later, you’ll create a “top-ten” list

developing forms and surveys

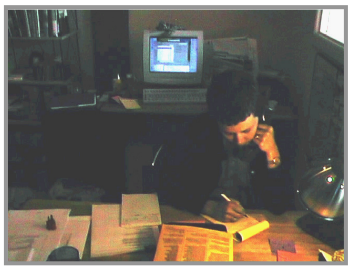
- screener
- demographic questionnaire
- voluntary participation, video/photo release, NDA (if needed)
- interview scripts
- task-ranking forms
- note-taking form for observation
- logging forms for long-term studies

determining participant incentives

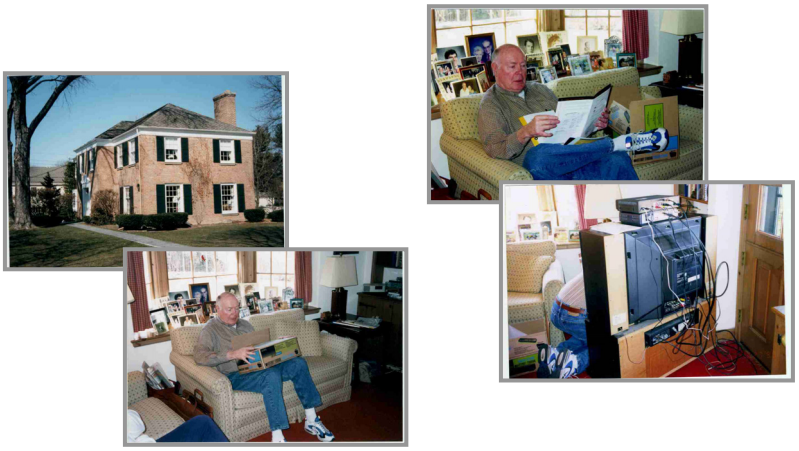
- give people something you know they want
- make sure management approves of the incentive
- give a gift to people who helped arrange the visits
- new versions of the product are often attractive
- money may be appropriate
- free service might be motivating

setting up the visits

- get managerial approval
- schedule when work is happening
- prepare people for your arrival
  - save typical tasks
  - collect artifacts
  - don't clean your desk
  - confidentiality
- send a letter
- call to confirm



the power of observation . . .



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observing tasks

- process steps
- verbalized frustrations, problems, and thoughts
- physical movement
- use of tools
- communications with other people
- papers, forms, or online references
- decision points

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capture it all

- work with a team member
  - take turns watching and recording
  - or, take different roles
- collect forms and other workplace artifacts
- videotape or audiotape
- take photographs
- take notes and sketch

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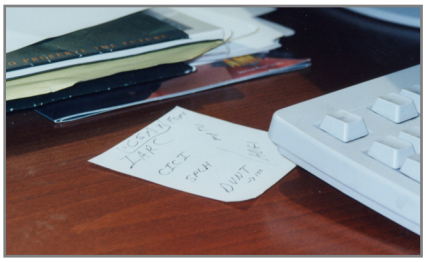

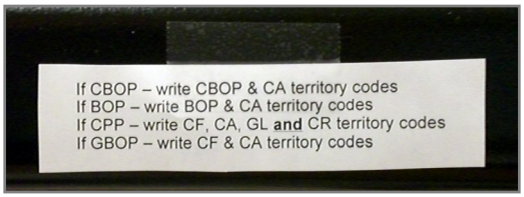

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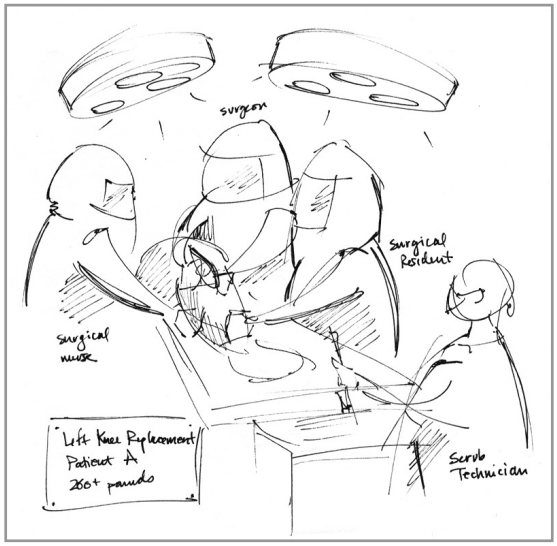

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conducting interviews

- ask open-ended questions
- get answers to pre-determined questions:
  - goals
    - front-line people
    - managers
  - likes and dislikes
    - where attitudes conflict with business goals
    - where the process breaks down
  - problem spots

tips for the visit

- watch the time
- consider a pilot
- warm up the users
- observe, don't design
- try tag-team interviewing
- expect the unexpected

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analysis activities

- organize your data
- illustrate the current state
- identify opportunities for improvement
- prioritize problems & opportunities
- make recommendations
- illustrate improvements

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communicating “what is”

- illustrated stories
- day-in-the-life scenarios
- profiles, audience summaries & personas
- storyboards

SAMPLE
XYZ Brokerage Field Study — Incremental Report

Mary C., Customer

Began investing one and a half years ago, but grew up in an environment where stocks were a common topic of conversation. Very risky, investing only in technology stocks, usually on margin. Makes 260+ trades per year.

Los Angeles

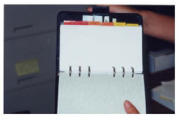
Mary is a young, single, self-employed attorney who lives and works in Los Angeles. She averages over 5 trades per week (260+ per year), but recently has been making only 1 – 3 trades per week. She's had less time to trade during the day because she's covering the case load for an attorney who recently quit. Also, she's been on vacation for several weeks recently.

Mary trades only technology stocks, and she considers herself a very risky investor. She buys on margin usually, and currently has a $50,000 margin debt. She has a SEP IRA and a Roth IRA, in conjuction with her brokerage account. She does not trade options. Even though Mary has been investing for only one and a half years, she grew up in a family where stocks and investing was a common topic of conversation, so she feels she knew more than the average beginner before she got started. Both her father and her brother are active traders, and she discusses investments with them often.

Mary began investing to build a down payment for a house. She is still looking for a house to buy. In the year and a half that she's been investing, her goals have evolved to include saving for retirement and for a career change. Mary thinks she might like to do something different in the future (like being a writer) and is sure it will pay much less than being an attorney. To achieve her goals, she invests as much as she possibly can, keeping a small balance in her check book to cover day-to-day expenses.

On her home computer, Mary has installed XYZ SuperSoftware, but she doesn't use it as much as XYZ Brokerage.com. She had the XYZ SuperSoftware software on her work computer also, but she recently got a different computer and has not reinstalled the software yet.

Mary likes paper records. She keeps all of her confirmations and account statements in binders at home. In her day planner, she has several tabbed sections of notes where she records information such as deposits to her account, trades made and stocks that she is watching.



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Demographics

Age..... 36 – 45
Education ..... Law degree
Job title..... Attorney
Annual salary ..... $100,000 – 120,000

Web user ..... 2 years
Most-frequent Web access..... Work
Personal hours on Web per day..... 1
Business hours on Web per day 0
Hours using e-mail per day..... 15 minutes
Connection speed..... DSL
Other Internet devices..... None

Investment vehicles ..... $60,000 SEP IRA, $12,000 Roth IRA, $50,000 brokerage
Stock investor ..... 1 year, 260+ trades per year
Traditional brokerage..... No
Online brokerage(s) ..... XYZ Brokerage
Favorite Web sites..... XYZ Brokerage.com
Sources of investor information..... Father, brother, friends, business section of local newspaper, XYZ Brokerage magazine, Silicon Valley News television show, financial shows when channel surfing, XYZ Brokerage.com news articles and charts

Tasks by Importance

Ranking	*Task*	*Frequency*	*Time*
1	Trade stocks	Few times weekly	AM
2	Run real-time quotes	3 times daily	AM
3	Run charts	3 times daily	AM
4	Read financial articles online	Once daily	AM
5	Monitor portfolio positions and balances	Twice daily	AM
6	Check watch list (paper-based)	Twice daily	AM
7	Set up alerts or other automatic information	Monthly	PM
8	Set up watch lists or customize research	Monthly	PM
9	Check balance	Twice daily	AM
10	Verify deposits/withdrawals	Monthly	PM
	Look up symbols	Weekly	PM
	Read alerts	Once daily	PM
	Read analyst reports	Weekly	PM
	Run delayed quotes	Once daily	PM

2

Tasks by Frequency

Frequency	Task	Importance Ranking	Time
3 times daily	Run real-time quotes	2	AM
3 times daily	Run charts	3	AM
Twice daily	Monitor portfolio positions and balances	5	AM
Twice daily	Check watch list (paper-based)	6	AM
Twice daily	Check balance	9	AM
Once daily	Read financial articles online	4	AM
Once daily	Read alerts		PM
Once daily	Run delayed quotes		PM
Few times weekly	Trade stocks	1	AM
Weekly	Look up symbols		PM
Weekly	Read analyst reports		PM
Monthly	Set up alerts or other automatic information	7	PM
Monthly	Set up watch lists or customize research	8	PM
Monthly	Verify deposits/withdrawals	10	PM

Web Usage

In her office, Mary has a Sony VAIO with DVD that someone else in the office complex gave to her as an upgrade to her previous computer. She has a 17" monitor and an HP LaserJet IIIp, as well.

Mary has been using the Web for 2 years. She feels that her computer knowledge in general is limited; although, she seemed quite comfortable exploring and using the computer when we observed her perform tasks. XYZ Brokerage.com is the only web site she uses. She uses her computer only for investing and to view software for her job.

When asked to recall a task that she had to quit or suspend on XYZ Brokerage.com, she said that 2 or 3 times trades did not go through. She wasn't sure why. She called customer service to resolve the problem. "Something I was doing wrong."

Brokerage Shopping

Mary opened her first XYZ Brokerage account just over a year ago. Mary never expected to trade online. When she opened her account, the XYZ Brokerage representative gave her some print material regarding XYZ Brokerage.com. She didn't think she'd use the site because her computer experience is very limited. But, when she read the information, she found that online trading was cheaper and it looked like it would be pretty easy. Prior to going online, she was frustrated with being on hold when she'd call to trade. She also liked that she could get company-specific news online.

The features that are most important to Mary on XYZ Brokerage.com are news, charts, account history, positions and balance. Mary is not really interested in changing brokerages, but price might get her to switch in the future. She's glad that the commission was recently lowered on XYZ Brokerage.com.

3

Information Sources, Flow and Decision Making

Mary does all of her investing on the Web at XYZ Brokerage.com. On rare occasion, if she encounters a computer problem or if she is traveling and away from her computers, she will call customer service to place a trade. Her primary sources of information are her father and her brother, who are active traders also. When her dad tells her she should buy something, she will just do it because she knows he does all the necessary research and she trusts him. She also gets information from friends who work at technology companies, the business section of the local newspaper, the Silicon Valley News television program and other financial programs that she might find while channel surfing.

Mary does not read or post to message boards, nor does she use web site demos. She didn't know what they were. She does not use any personalized sites either.

Mary likes paper records. She keeps confirmations and account statements in binders at home. She transfers the statement data to an Excel spreadsheet for her tax accountant.

In her day planner, she has several tabbed sections of notes where she records information like trades made and stocks to watch. She likes having access to this information when away from her computer.

Mary tried keeping watch lists online, but didn't like that method because she is so used to writing everything in her day planner. She said she might try online watch lists again in the future.

In the evenings, Mary often talks with her father and sometimes her brother. They discuss stocks. The next morning, Mary watches the market, runs charts and reads news articles online on particular stocks. She places market orders from work during the morning once she decides to buy or sell. Occasionally, if her dad or brother gives her a specific buy/sell tip, she'll make the trade from home before she leaves for work. Mary does the more general research on companies in the evening (analyst or earnings reports). She also updates her alerts at the end of the day to add new companies that she's interested in.

Mary does not seek out advice from financial professionals. She has a lot of friends who work in Silicon Valley. She learns about technology companies from her friends. She wants her money to be in different areas of technology and telecommunications — e.g., semi-conductors, software, wireless, fiber-optic, etc. She looks for sectors that make practical sense. For example, she's heard a lot in the news about hackers breeching computer systems. So, investing in companies that produce security software makes sense to Mary. She also invests in companies that are the "pillars of the Internet," like Cisco and Intel (versus Yahoo or Amazon). Mary decides when to buy or sell based on earnings estimates. She gets earnings reports from her father, who gets them from his broker, by calling XYZ Brokerage customer service, or from the Analyst Info on XYZ Brokerage.com — "but I'm not good at using that [Analyst Info]." Sometimes, she will buy and sell the same stock several times. Mary also watches her holdings to see which stocks "weather the storm" of the market volatility to decide whether to sell or to buy more.

Mary visits XYZ Brokerage.com a couple times each day, mostly in the mornings. She first checks her positions on her 3 accounts to see how particular stocks are doing. She

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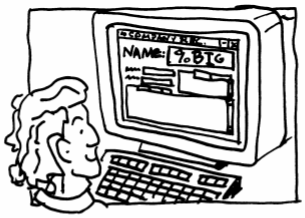

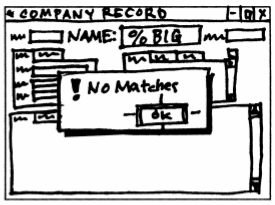

1

Ed is an inside sales associate, backing up several field sales executives in the field. One of his field sales executives, Linda, faxed him a prospective client questionnaire that she had filled out at a meeting with Pat Ford, the Financial Advisor for Big Enterprises. Ed scans the questionnaire to make sure it is complete.

2

Ed has OCC in view on a blank company record. He types "%Big" in the Company Name field and presses the Enter key, which executes a search. There are no matches, so Ed knows he can enter this new company.

Comments — Entering the % sign executes a search for any company with "Big" in the name.

3

After clicking OK on the "No matches" message window, Ed finishes typing the company name and enters the address from the questionnaire.

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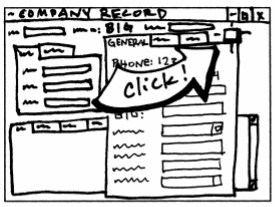

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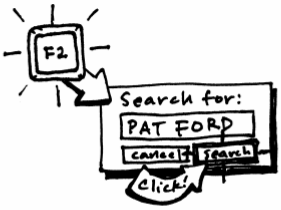
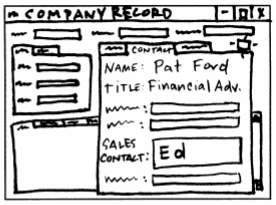
Next, Ed expands the General tab on the company record and fills in nearly every field.



5

He clicks the Contacts tab. Before entering information, he presses F2 to search for Pat Ford, Big Enterprises' financial advisor. He finds Pat in the database, so he adds Pat as a contact.



6

Still on the Contacts tab, Ed adds himself as a sales contact.

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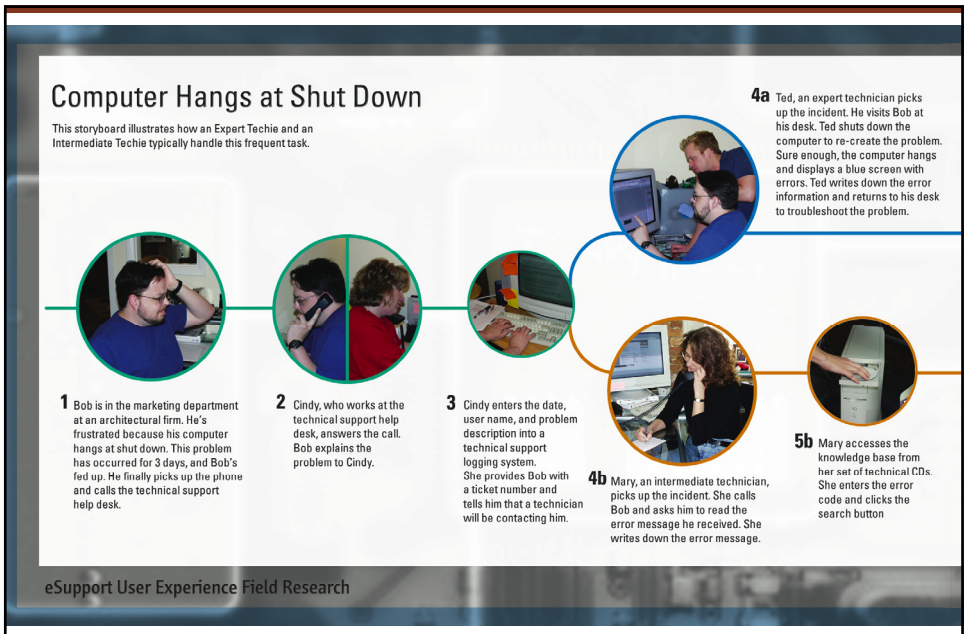

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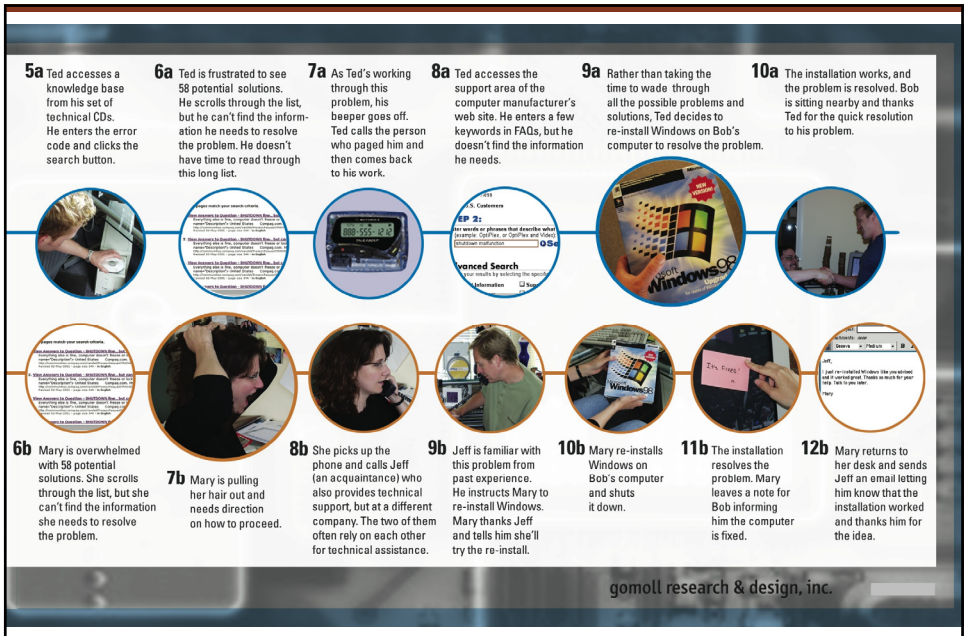

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illustrating improvement ideas

- scenarios . . . . . **future user experiences**
- storyboards . . . . . **future task flows**
- affinity diagrams . . . . . **types of improvements**
- flowcharts . . . . . **process improvements**
- UI sketches . . . . . **design concepts**
- timelines . . . . . **improved speed / efficiency**

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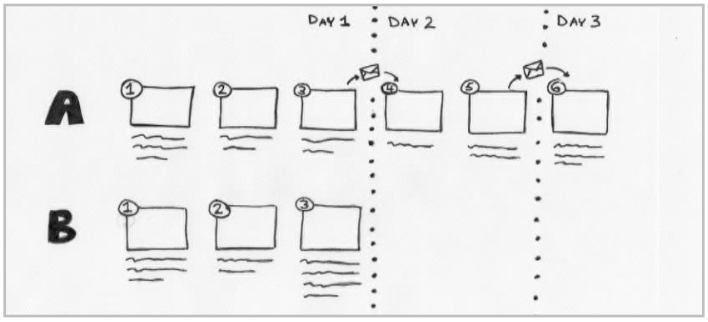
before + after timelines



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D o r o t h y

Lifelong Student & Traveler

Dorothy Muse is a **68-year-old single, retired schoolteacher**. She is a lifelong student and traveler. Despite her travels, she is not a rich woman. She hunts for bargains in newspapers and travel magazines and keeps good relationships with several travel agents. Her niece keeps telling her that she'd find many travel bargains on the Internet. She has heard the same on the Today Show and local news segments. However, Dorothy's real motivator is that she wants to check out the web sites (she doesn't know that term) recommended by *Journal Français*, a bimonthly journal she subscribes to and loves.

Dorothy is excited about the power of technology but a little **nervous**. Many of her friends frequently complain that they spend too much time dealing with computers that aren't working.

Dorothy understands she needs a computer and phone line. She doesn't know the terms **ISP, Internet service provider, modem, browser, terminal, WebTV, or URL.** She refers to the URL as 'the number.' She knows the terms Internet and Web and has heard of Macintosh computers.

Dorothy is not interested in using the Internet for anything she doesn't need it for. For example, she wants travel deals she can't find otherwise, to talk to people she can't easily talk to otherwise, and she wants reference materials that are not easily available printed.

Dorothy is now committed to get online and look for an affordable African summer safari and to visit the French magazine's Web pages.

Dorothy Muse
She took a word processing course two years ago, but didn't consider the advantages over handwriting her letter worth the hassle.

"I just want to put in the number and go."

"My friends search the Internet for many references. That's too confusing for me. I just want to go to places I've seen in my magazines or on TV."

"I want a **good price**, but I'll have this for several years so I'm willing to **pay a little more** for something that won't frustrate me."

Trusted Media

"I'm afraid using the computer will be **too frustrating.** *My high blood pressure can't take that.*"

"I won't buy tickets on the Internet if I can get the same tickets through the Ticketmaster 800 number."

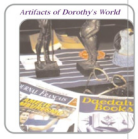
D o r o t h y

Lifelong Student & Traveler

A Product and Interface to Satisfy Dorothy

- **Easy to order and assemble.**
- **Highly reliable.**
- **An interface to accommodate beginners.**
  Dorothy may be timid on the computer. She will quickly become an intermediate user, but will likely never become an Internet expert.
- **No technical language.**
  Dorothy doesn't understand Internet jargon or etiquette.
- **Tips and Instructions — online & offline.**
  Dorothy needs instruction on using the Appliance and using the Internet.
  As a new computer hardware user, the keyboard and mouse are an important, and potentially negative part of the first few experiences.
  Help her practice keyboard and mouse skills.
- **Mouse targets large and well-spaced.**
- **Text relatively large.**
  Show Dorothy how to resize text.
- **No cluttered screens or small hotspots.**
- **No complex motor skills required.**
  Dorothy may have physical limitations with motor skills such as arthritis.

Artifacts of Dorothy's World



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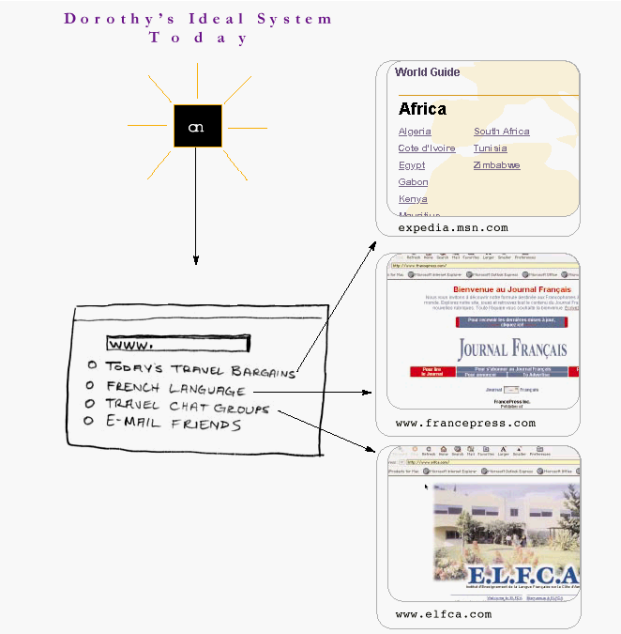

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consolidating your materials

create a series of one-pagers, such as:

- a collage of photographs
- a summary of user goals
- the list of top-ten tasks
- a summary of user demographics
- a big-picture storyboard
- a combination:
  - "what is" storyboard
  - today's flowchart
  - "what could be" storyboard
  - future flowchart

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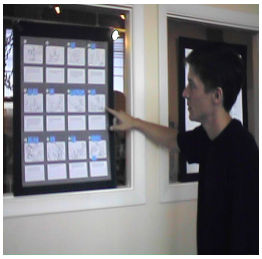
gaining visibility

- include key stakeholders in the field visits
- make presentations
- show videos
  - user frustration
  - user enthusiasm
- show prototypes as soon as you can



a final word

your goal is to meet real users, immerse yourself in their world, and gather as much detail as you can about their tasks

you are bound to enjoy the process, because you will have formed a personal connection with your audience, and you will be able to design from a position of knowledge