

Chapter 3: Procedures

All in Favor of Methodology

Design is a unique discipline which exists at the practical intersection of art and science. Artistic work done under the rubric of design is always guided towards the achievement of a specific goal. From my studies in the Department of Design and Industry at San Francisco State University, I have learned that one of the most powerful aspects of the design discipline is understanding the *iterative* nature of this creative process used to develop solutions to problems. By first carefully establishing the nature of the problem at hand and making initial approaches towards a solution, then refining one's understanding of the problem and repeating the early creative development stages in a cyclic fashion to re-examine different possibilities and approaches, all aspects of the problem become clearly established. Ultimately, the best approach towards a solution can be recognized and developed into a finished design.

General Discussion

This project began as the thought that developing a franchise of public Internet centers for suburban and rural America would be a good idea. I pictured a number of ways that design could solve the problem of this lack of convenient, local and public Internet access.

Work for a design project generally begins with examination of the problem and the domain involved, mostly in terms of existing, competing solutions and project constraints. In the early stages, it is helpful to create a tally of all the aspects which are likely to be involved in the eventual solution, creating a corresponding work list and schedule. Throughout the entire process, designers consult with the other interested parties to the design, particularly at important milestones such as creation of the worklist, development of ideations, and final polishing.

As a design project moves into its central creative phases, including conceptualizing and drawing, it is important for the designer to maintain awareness of the scope of the project,

making sure that the solution is neither under- nor over-designed and that it directly solves the identified problem. Often, the creative development stages of a design project are highly labor-intensive, and involve intense brainstorming sessions as well as long, involved attempts to physically represent a certain conceptual ideal. It is during this creative period that the iterative movements are made to re-analyze the requirements, needs and goals of the project, before returning to creative development. Documentation of design work on an ongoing basis is vital, as it enables the designer and interested parties to track the relative success of various different forays into solutions.

Success is reached when a design solution synthesizes both intellectually and aesthetically to solve the identified problem. The work doesn't end there, however, since design projects must make themselves fully understood to the other interested parties. This aspect is another major way in which design exists at the intersection of art and science; art has no inherent need to explain itself, whereas science has the fundamental requirement of justifying its findings. The final result of a successful design project is a focused and clearly communicated design consisting of a specific solution for the identified problem.

Procedure as practiced

In general, I applied the above design procedure to the creative development of the model for Main Street Online. Because my focus in the Department of Design and Industry is Graphic Communication, I pictured the solution in terms of a visual design for a public Internet center, with graphic design applications to printed materials and environmental signage.

At the start of the project, I quickly developed the name of the center, Main Street Online, because I wanted to make the project concrete and easy to reference. Next, I began to develop ideations for the visual design of Main Street Online, in terms of word-associations, visual metaphors, and also pencil, ink and digital sketches. By soliciting feedback from interested parties—namely my advisors—and returning to this process several times, I was able to focus on one particular visual design idea. I then developed it further both conceptually and visually. This image is the archetypal American street sign, a bold panel bearing the words “Main Street Online.”

When it came time to apply the chosen visual design solution in the ways that I had initially envisioned, I realized that my initial thoughts did not match the real-world problems which had become increasingly clear with further research and analysis. I realized that the main graphical application which Main Street Online needed was for a business-card-sized plastic card which could function as visitors' log-in devices, in addition to a regular business card with local contact information. I also chose to devote greater time and attention to the development of a coherent interaction design for the Internet center's digital presence rather than working on environmental and interior design aspects.

Lastly, I created the official documentation for the entire project, to clearly express the problem and represent my designed solutions. I also chose to discuss the theoretical process of design and the manner in which actual design processes manifest characteristics of both art and science.

Goal-Directed® Design

A short time after beginning this project, I realized that knowledge gained from my professional design work could assist me in the development of my solution. As I mentioned in Chapter 1, in July 1999 I became an Interaction Designer at Cooper Interaction Design, where the Goal-Directed® methodology is practiced. As design consultants working for a wide range of clients, at Cooper we use Goal-Directed® methods to develop solutions for products and services which involve a computer-mediated human interaction, such as software applications, web sites, and digital appliances.

The core of the Goal-Directed® design process is development of personas, who are archetypal users of the product being developed. User personas aid in the development and testing of valid design ideas. Personas have detailed biographies and job descriptions, but more importantly, they have certain well-defined goals, which usually relate to work responsibilities at hand, such as: "Be informed about what my subordinates are doing," or: "Complete my tasks very quickly," but they also might relate to their personal life, such as: "Retire in the near future," or: "Go on more camping trips with my family." The personas'

goals directly influence the functional requirements and ultimate design of the product, and give designers a clear design target.

For most Cooper projects, development of personas involves ethnographic research in terms of extensive one-on-one interviews with eventual end-users. Often, though, for shorter or more consumer-oriented projects, personas can be developed based on fewer formal interviews, due to the designer's general understanding of the people who make up American society. For this project, I solicited first-person accounts of visits to international Internet centers, performed investigation of existing public Internet centers' web site offerings and target markets, and also relied on my own knowledge of people and Internet behaviors to develop the persona set.

The application of Goal-Directed® design to this project was very positive, leading me to conceptual breakthroughs and allowing me to focus my design work. When a design problem is directly tied to serving the needs of actual people, nothing works as well as the concrete development of personas to keep the designer honest and help her avoid self-referential design. It also enabled me to picture Main Street Online more concretely, by placing it in a real-life small town, which is known as the establishment of an "interaction environment."

The goals of the personas particularly influenced the development and display of content for Main Street Online's portal-style web site. The site needs to communicate all the neat and useful things which can be accomplished easily at Main Street Online, and of course also help introduce the personas to the wide world of Internet content. Understanding each persona's typical experience at Main Street Online is a way for me to know precisely what content Main Street Online's site should contain and how this information should be displayed on the screen.

Personas

The following five individuals comprise the persona set for the Main Street Online design. They are all residents of Hutchinson, Kansas, a small town in central Kansas surrounded by farmland, about forty miles from the larger city of Wichita. The population of almost 40,000 has held steady in the last ten years. Its industries include many agriculture-related businesses such as food processing and grocery distribution, plus aerospace, mining, and health care. However, like many other towns around the country, the venerable downtown area filled with stately brick buildings and glass-fronted stores is surprisingly under-utilized. The town is served by several libraries, and an active town council concerned with the long-term health of the downtown area.

Teddy Jones**13 years old**

Teddy likes life in the 8th grade, because at his middle school, the 8th graders rule the roost. Teddy actually enjoys being the tallest person walking down the hall between classes, since he's on the basketball team and has lots of friends who say hello. Teddy hopes that he will be able to play on the team in high school next year, which should make life more enjoyable.

Teddy doesn't always do well in math class, and worries that high school classes will be even harder. Social studies is Teddy's favorite class at school, perhaps because he was named after Teddy Roosevelt by his father, who is a local politician himself. Teddy has ambitions of going to a good college, maybe to play basketball but mostly to get the best education he can, because he knows from his dad (and "Who Wants to Be a Millionaire?") that you need to be smart to do well.

Teddy loves playing games. After basketball practice and doing his homework, he spends most of his time hanging out with his friends, playing games on the computer. Teddy hasn't met a girl yet who plays basketball and computer games, and he probably won't be interested in one until he does. Meanwhile, he and the guys from the team love to play Quake. Unfortunately, Teddy doesn't have a computer of his own, so Teddy ends up spending a lot of time watching over his friends' shoulders at their houses while they take their (overly long) turns at the controls.

Teddy's Goals:

- **Play games**
For now, Teddy's main focus for fun is playing computer games.
- **Find cool stuff**
Teddy would like to tell his friends about cool new things he found online.
- **Get out of Kansas**
Sometimes Teddy is embarrassed about living in a farming community in central Kansas.

Mary Lindbergh**20 years old**

Mary is a junior at the local state college, where she lives on campus with two other women whom she's known since pre-school. Mary grew up on a farm just outside town, the second child in a large family of six children. When she was eight, Mary appointed herself guardian of her youngest sister when she ran a high fever one winter, and helped her mother prepare cool compresses and medications until her sister was well. Her father declared that Mary should become a doctor, and today she's studying to become a pediatrician.

Every week, Mary has a lot of books to read, words to memorize, and papers to write. Mary also has a part-time job in town as a retail clerk at the local department store, which limits her free time even more. Mary has been using computers since high school, and prefers using one to do her school work, but she doesn't own one. She uses the school computers as often as she can, but the center only has 15 computers and there's almost always a wait list during the hours Mary can visit. Also, only five of the computers have Internet access and since she's started to use the Internet to do research, Mary can hardly imagine doing it the old way. Her college library doesn't even carry most of the academic journals with the latest research.

Mary occasionally goes shopping online at stores that don't even exist in Kansas, and she's found some wonderful bargains on gifts, clothes, and accessories. Mary also loves being able to email her friends from high school who are scattered around the country at other schools. Sometimes four or five of them will get together in an IRC room and chat in real time about the meaning of life (usually a cute boy). That's what she calls a good study break!

Mary's Goals:

- **Find information**
Mary already has some favorite sources, but often searches to find information.
- **Get her work done quickly**
Mary wants more free time to do fun stuff like shopping and reading online.
- **Communicate with friends**
The Internet gives Mary an exciting means to socialize without running up a phone bill.

Jean-Luc Albert**23 years old**

A native of France, Jean-Luc is on a quixotic quest to locate the soul of small-town America. He's been obsessed with American culture ever since he saw "Easy Rider" as a young teenager, and his early love of films became dreams of being a screenwriter and director. Jean-Luc worked many long hours at odd jobs around Paris saving his *centimes* for a trip to the U.S., and he finally arrived in New York almost a year ago, ready to wander the back lanes of the United States. Jean-Luc is now developing a fish-out-of-water screenplay about a young Frenchman experiencing life in the small towns of America. He usually spends anywhere from a week to ten days in one town, eating in diners, scribbling in notebooks and chatting with locals whenever he gets a chance. He's made his way to the middle of Kansas riding Greyhound buses and living cheaply in boarding houses, which he finds by asking locals and searching online. Happily, his English is pretty good, although nobody will mistake him for a native.

Jean-Luc was once shocked while eating a grilled-cheese sandwich in Joe's Diner when a friendly waitress told him she thought French people only ate snails and frog legs. Jean-Luc often can't believe how little world news penetrates to the small towns he travels through, and he craves more ready access the Internet to find about what's happening at home. Jean-Luc's large family also misses him sorely. With sporadic telephone service available to him, email is Jean-Luc's only means of communication. And ever since losing his first irreplaceable notebook, Jean-Luc has been careful to use the computer to write up his handwritten observations and email them home for safe-keeping. Heaven forbid the film masterpiece of the 21st century gets lost!

Jean-Luc's Goals:

- **Stay connected with friends and family**
Jean-Luc wants to send messages and attachments to loved ones who are far away.
- **Plan ahead**
Jean-Luc uses the Internet to plan his itineraries.
- **Have a window on the world at large**
Jean-Luc is reassured by reading international news and getting the French perspective.

Linda Mann**36 years old**

Linda grew up in Nebraska, but left the state with the rest of her family when her father couldn't find another job there. They settled in Kansas, and Linda enjoyed the change of scenery, because it gave new fuel to the fire for sketches she liked to do of nature. But after she gave birth to her daughter, Julie, Linda quit her artistic college studies and went to work full-time to support her child. Linda's been working as a waitress for the last nine years in one of Hutchinson's nicest restaurants, just off Main Street. Today, Linda and Julie are best friends, and Julie has just taken a part-time job at the restaurant to help pay for household and upcoming college expenses.

Linda used to listen to her customers talk about the Internet and she felt left out because she hardly understood a word they said. Finally, one of her friends from the beauty salon invited her over to shop online together. Linda had never really used a computer before, so she was nervous about not knowing what to do. Although she hates the new computer register at work, she loved finding out so many neat things all over the country. She knows there's a lot of stuff out there that she's still never seen.

Linda went into some newbie chat rooms with her girlfriend a few months ago. Now Linda can :) with the best of them! Several months ago, Linda developed a flirtation with a guy named Sean in Phoenix while her girlfriend found somebody nice to chat with in Albuquerque. Linda and her girlfriend take turns at the keyboard, and the four of them are considering travelling to meet each other. Right now, Linda most wishes that she had a private computer connection to talk with Sean more, and use the Internet as much as she wants.

Linda's Goals:

- **Not look stupid**
Linda wishes technology wasn't so rude and difficult to understand.
- **Be entertained**
Linda always appreciates a good laugh—or sometimes simply a good gasp.
- **Get a social life**
Linda would like to go on dates, attend parties, and travel.

Gladys Bower**67 years old**

Gladys Bower, née Morganstern, moved to Hutchinson, Kansas thirty-two years ago with her second husband, George. Twelve years ago, she retired from her job as an insurance clerk, and began to spend most of her days tending her garden and cozy two-bedroom home. George died almost five years ago, though, and after a long time grieving, Gladys realized how much she missed her children and family members, who live in San Diego and St. Louis. Gladys had learned to use a computer in her office job, but not until her children kept asking for her to use email did she begin to communicate via computer.

Gladys first went to the library to get online. She found it very difficult to send and receive email, since she sat down at a terminal which did not have a graphical interface, which was very confusing. After a frustrating forty-five minutes, Gladys finally found a librarian who showed her what to do. One day online, Gladys tried to find an email address for her unmarried sister, Lily. Using a search engine to find “Morganstern” online, Gladys discovered a treasure-trove of genealogical information which surprised and delighted her. She spent two hours poring over records before she was asked to vacate the computer for an impatient person who’d been waiting.

Today, Gladys always spends some of her Internet time communicating with other Morgansterns or reading about their family. She’s broadened her interests to the Bower family, as well, and now communicates with distant cousins of her husband’s. Furthermore, after another fruitful search she found some gardening discussion groups, and recently posted her first message. Turns out that nobody can revive a gladiola like Gladys!

Gladys’s Goals:

- **Occupy herself in interesting pursuits**
Gladys likes gardening, communicating with friends and family, and playing bridge.
- **Learn about her family history**
The Internet is a wonderful tool for charting and meeting new members of her family.
- **Expand her knowledge**
Gladys is happy to realize that she’s not done learning about new things yet, and she enjoys sharing her own know-how with others.

Primary and Secondary Personas

After creating the persona set, designation of particular personas as either primary, secondary or supplemental helps to focus and guide the creative design process. Primary personas are the people whose goals and needs absolutely must be served. Secondary personas have particular goals which must be considered, but they do not drive the design because their main needs are met by the primary persona's goals. Supplemental personas help the design process by offering additional perspectives and scenarios, but their goals are entirely served in the process of satisfying primary or secondary personas.

This designation of primary, secondary and supplemental happens via a process which judges the personas according to the importance of their relationship to the product being considered, how well they will aid the creative imperatives of the project, and many other particular considerations unique to the problem at hand. Several considerations were uppermost for the question of which persona is the primary persona for Main Street Online. One commercial consideration I had was for the primary persona to be somebody who would influence others and attract attention to the Main Street Online center. As the target for my design, the primary persona to be somebody who could be favorably swayed by a good design. The primary persona also needed to be somebody who represents a moderate-to low-familiarity with computer technology. If a primary persona were chosen who was an expert computer user, the web site design might confuse or alienate an unfamiliar user, whereas a well-thought-out design targeted at a reasonably intelligent but inexperienced individual would not discourage or annoy a good computer user.

I also decided to choose two primary personas for this project. The designation of primary personas often necessitates that separate designs be created for each primary persona. For example, if designing a software application for a call center, the supervisor's interface and the call service representative's interface will serve each best if developed as unique, discrete applications. For Main Street Online, though, one basic web site design has to account for a wide array of activities and interests. Using two primary personas helps keep the design focus broad, and encourages consideration of features like customization.

Primary Personas

Mary Lindbergh is a primary persona. Mary likes to use the Internet to communicate, and Main Street Online must serve her goals in that regard. A college student, Mary has a great need to perform research, which is one of the greatest boons of the Internet, and an important aspect to emphasize in the site design. However, not all information is created equal, and Main Street Online should take care to educate visitors about the complicated and rather opaque world of online media. As a student, Mary also becomes aware of new web trends early, and the center must attempt to accommodate her interests in order to succeed for the long term. If Mary uses the center, tells her friends about it, and visits it with them, their presence will generate more community atmosphere for Main Street Online.

Linda Mann is the other primary persona. This 36-year-old waitress represents a common range of web interests. Her chatting and interest in travel information are important needs to serve adequately. She also combines a number of the other personas' interests, primarily in communication. Importantly, she has social influence in her community. If she likes the center, she'll tell people—and if she doesn't like this center, she'll tell people. Linda never really used a computer before she started going online, but she's open to new experiences. Also, she knows that there's a lot of the Internet that she's never seen. However, she's still finding her way around, rather gingerly sometimes, and her target tolerance for technology is an important consideration.

Secondary Personas

Gladys Bower is a secondary persona, whose most special need is a consideration of her age. Like Mary, she uses the Internet to find information, as well as communicate with friends and family. The point to keep in mind with Gladys, though, is that her eyesight is not strong, and her tolerance and understanding of space-age metaphors is rather more conservative than the other personas. Flashing lights and shiny gizmos won't impress—and may alienate—Gladys. She also has a healthy interest in chat rooms and searching the Internet.

Teddy Jones is a secondary persona. He has some of the same goals as Mary, but his special concern is playing games. In fact, the kind of games that Teddy wants to play require

permanent installation onto the computer running the game. Therefore, to satisfy Teddy's goals, Main Street Online needs to create a separate gaming section with powerful, graphically enhanced computers that can accommodate state-of-the-art games. However, as a secondary persona, Teddy's game-playing goal is not driving the overall design, and the design of Teddy's ideal game room is out of scope for this project.

Supplemental Persona

Jean-Luc Albert is a supplemental persona. He wants to communicate with friends, make travel plans, and get news from outside Kansas. Although at first glance he appears to have different needs than the other personas, his goals are in fact entirely served by Linda's and Mary's. Still, it's important to verify that his goals are served by the final design. A more expert computer user than the other personas, Main Street Online should be careful not to alienate Jean-Luc.