# Main Street Online

# Main Street Online:

# Building a New Community

by
Elizabeth Bacon

Master of Arts
San Francisco State University
Department of Design and Industry

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## Certification of Approval

I certify that I have read "Main Street Online: Building a New Community," and I certify that this document meets the standards defined by the Department of Design and Industry at San Francisco State University for conferral of a Master of Arts degree upon the author.

Certified by Committee Chair: _____

**Ricardo Gomes, IDSA**
**Associate Professor**
**DAI, SFSU**

Certified by Committee Member: _____

**Bobbi Long**
**Assistant Professor**
**DAI, SFSU**

**Abstract**

People living in suburban and rural America need the Internet delivered to them in a way that encourages community feeling rather than individual isolation. To address this problem, I propose to build a new community establishment through the design of a public Internet center, conceived as a franchise called Main Street Online. This document discusses design methodology and presents design solutions for Main Street Online, consisting of a visual identity with graphic design applications, and an interaction design for the portal-style web site.

Certified by Committee Chair: _____

**Ricardo Gomes, IDSA**
**Associate Professor**
**DAI, SFSU**

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## Chapter 1: Introduction

**The Problem**

Once a place for people in a community to participate in social and cultural events, the downtown area of suburbs and small towns has been changing. In the "strip-mallification" of America, retail stores along with specialty shops and restaurants are relocating to outlying commercial hubs and busy, impersonal thoroughfares. The traditional American downtown Main Street is being transformed and sometimes destroyed in the process, and the sight of vacant storefronts in small town communities is a cause for deep concern.

While this geographic and economic reality preceded the rise of Internet usage in the United States, further advances in Internet use according to current patterns seem only likely to increase the abandonment of community-oriented areas. Used by individuals in the home, the Internet lets people locate information in isolation that they formerly might have traveled to a library or called on a friend to learn. Online, people experience entertainment alone that they might have once traveled to see with others. A public community Internet center would provide an interesting place for people to gather and communicate, for learning, playing games and sharing experiences with each other.

While the idealistic goal of bringing community spirit to Internet use is a worthy one, I also feel that the increasing disparity between the Internet-capable and the Internet-deprived is liable to induce social problems which need to be averted before they result in widespread digital backlash. The benefits of Internet ought to reach everybody—moreover, with the always-on connections and high bandwidth that many Internet-capable people can take for granted.

In short, there is great call for a friendly, local internet presence to help reconnect our changing community with our technology, as well as democratizing access to the Internet for everybody.

Design has the capacity to connect individuals with technology in a way that encourages its positive aspects. I propose to build a new community establishment through the design of a public Internet center. This public facility is to be located on the proverbial Main Street of a small town or suburb. While fostering a sense of community, the lasting phenomenon of the Internet will be brought to people who otherwise might not have access to it. The Internet center will promote social interaction, communication, and sharing of information in all its aspects. Main Street Online hopes to be a democratic and actively unifying force for small town society, bringing everybody up to speed in the digital age.

As noted technology pundit and interactive media critic Esther Dyson wrote:

> The vision [of technology] I like is the one where a person interacts with other people. A video game is interactive...but to me, what's more interesting is if there are other people there, so that the game becomes a communication medium. That's my concept of interactivity. (Dyson 113)

I firmly believe that we can enhance the Internet experience by enjoying it in a communal setting with our neighbors.

**Sub-problems**

Several sub-problems comprise the main problem of creating a new public Internet center as a community establishment in this creative work project:

1. Main Street Online needs a consistent visual identity which can be easily recognized by visitors in order to be developed nationally along the lines of a franchise.
2. Visitors need an easy way to keep track of Main Street Online's operational information, and to log-in to computers at the center.
3. Visitors need a helpful place to start their Internet experience at Main Street Online.

All of these sub-problems will have design solutions.

**Limitations of Scope**

The scope of the design does not include environmental or interior design. Also, this document will not discuss most of the practicalities of implementing the graphic and interaction designs developed in this creative work. However, some considerations have been noted which relate to all of these areas, which will be discussed in Chapter 4.

**The Document**

This document details my ideas and exposes my procedures for arriving at the correct design, and presents the results of my design work followed by conclusions drawn from this project. In this chapter, I have introduced the general problem, and the sub-problems which will solved with design.

All good design work utilizes research, usually concerned with existing solutions and investigation about the practical value of and possible solutions for the design problem at hand. For this project, I looked into the nature of public Internet centers around the world, and include first- and second-hand accounts of Internet center experiences. This material helps to establishing a well-understood social context for public Internet centers. I also discuss the state of Internet access for the general American public, including their attitudes toward technology. These findings are contained in *Chapter 2: Research*.

*Chapter 3: Procedures*, is a discussion of the design process and my methodology, and how they manifested during the course of this creative work project. I believe strongly in the value of applying a formal methodology to problem-solving. In July 1999, I took a position as an Interaction Designer with Cooper Interaction Design, where we use a powerful design methodology called Goal-Directed® design ("Goal-Directed®" is a registered trademark of Cooper Interaction Design and protected accordingly). The primary manifestation of the Goal-Directed® design process is the use of *personas* as a design tool, representing user archetypes whose goals drive and inform the design.

*Chapter 4: Design* contains the creative results of this project, while Appendix B contains some interesting views of intermediate stages of my design work, scanned from my notebooks and print-outs. The finished products of this creative work are designs that different Main Street Online facilities around the country could apply consistently, along the lines of a franchise. The visual identity for the enterprise consists of a word mark, and I have applied it to a paper business card and a plastic log-in card. The web site is where each person's Internet session begins at Main Street Online, and I have produced screen mock-ups to illustrate the conceptual interaction design for the portal.

In *Chapter 5: Conclusions*, the design work produced for Main Street Online is assessed, and I describe how the goals of the personas were satisfied. Included here are some practical thoughts about making Main Street Online a viable operation. I also discuss the theoretical implications of this project, and the necessity for designers to apply their disciplined skills to solving problems that face humanity today.

## Chapter 2: Research

Research is an important part of virtually any serious project. For a design project it has special significance, because it represents one of the major ways in which design distinguishes itself from art. Whereas art is the uninhibited display of creativity, design is the development of a creative solution to a constrained problem. Knowledge of the substance of constraints and about any existing designed solutions is vital to develop a good design of one's own. Further, in the human-centered endeavor of design, understanding people's concerns, attitudes, and interests is the best kind of knowledge.

In this section, I collate information gathered from media about Internet access and public Internet centers both internationally and in the United States, and I present some interesting real-life accounts of experiences with public Internet centers.

### Internet Centers Around the World

Around the world, people are using public Internet centers to access the Internet. In fact, the public Internet center is more common outside the United States than within. Internet centers are common in cities around Europe, South America and Southeast Asia, although rural areas do not tend to have access, or if they do it is very limited and extremely expensive. One speculation as to why public centers are more common outside the United States is that in most foreign countries, fewer people have computers in their homes, and fewer school-age children have computers in the schools, which means more people compose a larger market for public access. A related situation which might also contribute to a demand for public Internet access is the general lack of affordable broadband Internet access (that is, faster than a dial-up modem, today usually consisting of a DSL, ISDN or T1 line) available to individual purchasers in countries other than the United States.

### England
In London, England in June 1999, a large public Internet center opened called easyEverything (Nutall). Perhaps the world's biggest Internet center, offering 400 user

terminals, the center advertises itself as an Internet Supermarket, and plans to operate on a franchise model, open 24 hours a day. Some of the value-added services offered at the center, besides the cafe concessions, are CD burning, floppies for copying files, and printing services. An interesting statement presented in the BBC News article is a quote from the chairman of the venture, Stelios Haji-Ioannou: "80% of the [British] population are nowhere near the Internet so there is a big gap and what I'm trying to do is bridge that gap." (Ibid) The focus of the Internet Supermarket's web site and services is e-commerce. A competitor's perspective is heard from Phil Mullan, chief executive of England's oldest Internet cafe, Cyberia, which was established in 1994. He says: "I don't think [e-commerce] is necessarily the most appealing way that individuals become at home with the Internet. We find that most people use the Internet for communication, e-mail services – about 85% of users here have been using it for that purpose, [while] e-commerce comes way down the list at three or four per cent." (Ibid) This information helped to inform the goals of the personas.

**Internet Centers in Italy**

I was fortunate to travel to Italy in May 2000. Before travelling there, I knew that they were on the vanguard of providing public Internet access because I had read a fascinating interview with the semiotician, literary critic, and political pundit (not to mention novelist) Umberto Eco in WIRED magazine, entitled "The World According to Eco." Eco was spearheading a project in Bologna to develop a public Internet center called the Multimedia Arcade, which WIRED reporter Lee Marshall describes as follows:

> Eco wants the Arcade to change Society as We Know It. The center will feature a public multimedia library, computer training center, and Net access-—all under the tutelage of the Bologna Town Council. There, for a token fee, local citizens can go to Net surf, send email, learn new programs, and use search engines.... Set to open in late 1997, Multimedia Arcade will offer around 50 state-of-the-art terminals linked together in a local network with a fast Net connection. It will feature a large multimedia, software, and print library, as well as a staff of teachers, technicians, and librarians. The premise is simple: if Net literacy is a basic right, then it should be guaranteed for all citizens by the state. We don't rely on the free market to teach our children to read, so why should we rely on it to teach our children to Net surf? (Marshall 146)

Responding to Marshall's questions throughout this article, Eco makes some of the points which motivated this project. Eco begins by saying:

> **[Eco:]** There is a risk that we might be heading toward an online *1984*, in which Orwell's "proles" are represented by the passive, television-fed masses that have no access to this new tool [of the Internet], and wouldn't know how to use it if they did. Above them, of course, there'll be a petite bourgeoisie of passive users—office workers, airline clerks. And finally we'll see the masters of the game, the *nomenklatura* – in the Soviet sense of the term. This has nothing to do with class in the traditional, Marxist sense – the nomenklatura are just as likely to be inner-city hackers as rich executives. But they will have one thing in common: the knowledge that brings control. We have to create a nomenklatura of the masses. We know that state-of-the-art modems, an ISDN connection, and up-to-date hardware are beyond the means of most potential users – especially when you need to upgrade every six months. So let's give people access free, or at least for the price of the necessary phone connection. (Marshall 146)

Marshall asks Eco whether the Multimedia Arcade is a sort of state-run cybercafé, and Eco responds:

> **[Eco:]** You don't want to turn the whole thing into the waiting room of an Italian government ministry, that's for sure. But we have the advantage here of being in a Mediterranean culture. ...The model for Multimedia Arcade...is that of the Mediterranean *osteria.* This should be reflected in the structure of the place – it would be nice to have a giant communal screen, for example, where the individual navigators could post interesting sites that they've just discovered. I don't see the point of having 80 million people online if all they are doing in the end is talking to ghosts in the suburbs. This will be one of the main functions of Multimedia Arcade: to get people out of the house and – why not? – even into each other's arms. (Marshall 147-48)

One of the main points which Eco makes is in regards to educating people culturally, firstly about the general functioning of the Internet (in the above sense of developing a broadly skilled *nomenklatura*), and secondly, about the type and nature of content on the Internet. As a semiotician, Eco relies heavily on a view of the universe where the critical interpretation of signs allows one to understand the messages being conveyed in any given data or media, which makes for an interesting perspective on the challenges of understanding content on the Internet. Marshall asks him:

> **[Marshall:]** What kind of critical tools are you talking about here – the
> same ones that help us read a page of Flaubert?
> **[Eco:]** We're talking about a range of simple skills. After years of practice,
> I can walk into a bookstore and understand its layout in a few seconds. I
> can glance at the spine of a book and make a good guess at its content
> from a number of signs. If I see the words Harvard University Press, I
> know it's probably not going to be a cheap romance. I go onto the Net and
> I don't have those skills.
> **[Marshall:]** And you've got the added problem that you've just walked
> into a bookshop where all the books are lying in heaps on the floor.
> **[Eco:]** Exactly. So how do I make sense of the mess? I try to learn some
> basic labels. But there are problems here too: if I click on a URL that ends
> with .indiana.edu I think, Ah – this must have something to do with the
> University of Indiana. Like hell it does: the signpost is deceptive, since
> there are people using that domain to post all kinds of stuff, most of which
> has little or nothing to do with education. You have to grope your way
> through the signs. You have to recycle the semiological skills that allow
> you to distinguish a pastoral poem from a satirical skit, and apply them to
> the problem, for example, of weeding out the serious philosophical sites
> from the lunatic ravings. ...You can learn these skills by trial and error, or
> you can ask other Net users for advice online. But the quickest and most
> effective method is to be in a place surrounded by other people, each with
> different levels of competence, each with different online experiences
> which they can pool. It's like the freshman who turns up on day one. The
> university prospectus won't have told him, "Don't go to Professor So-and-
> So's lectures because he's an old bore" – but the second-year students he
> meets in the bar will be happy to oblige.  (Marshall 148, 194)

I find that Eco makes cogent points about the value of a public Internet center in general,
and the specific need for a community-oriented approach to sharing the vast knowledge
which the Internet provides. Further, I will use the implications of what he discusses here to
develop a solution which helps solve some of the orientational difficulties encountered by
naive and first-time Internet users, which Main Street Online must be able to accommodate.

**My Experience in Italy**

In Italy, although I did not travel to the Bologna to visit the Multimedia Arcade, I visited an
Internet center in Florence called Internet Train (see photos on the next page). This Internet
center, located near my hotel on a fashionable street adjacent to the fabled Pont de Vecchio,
was busy during all hours of its operation. I found it interesting that it tagged itself "Your E-
Mail Service in Florence" on its sign, clearly speaking to the #1 activity of visitors.

**Front desk for checking in**

**Internet Train exterior, Florence**        **May 20, 2000**



**Credit cards accepted**

**I logged in here**

**Internet Train interior, Florence**                              **May 20, 2000**

I found the Internet Train experience a largely satisfying one. It was clearly an Internet center open to the public, so I did not hesitate to enter and approach the counter. The gentleman at the counter spoke English (as most everybody in Florence did where money was involved) and was able to quickly get me set up. He took my cash and charged a plastic log-in card with half an hour, the amount of time which I purchased.

I was able immediately to take a seat at a vacant computer, and found the screen displaying the Internet Train log-in page. I ran the plastic card through the slot in a small device attached to the computer, and the keyboard became active. A small timer displayed on the screen, counting down from 30 minutes. I logged in to my husband's Yahoo! Mail account and sent my friends and family some email from Italy. I also checked world news headlines and did a search to investigate a street demonstration which we had observed in town the night before. Many people had been chanting, "Yankee go home!" and waving red flags in the air so we were naturally somewhat concerned about the situation. I was glad to have a resource to discover the facts; it turned out that NATO was having an historic meeting in Florence during those several days, and the demonstrators were protesting what they perceived to be NATO's militaristic tendencies. My husband then took over the computer to check mail on his Yahoo! account, and he also sent messages to his parents. The thirty minutes were up quickly, and we logged off with about 1 minute to spare.

This seamless, simple experience at Internet Train helped to reveal how my previous design applications involving stationery and envelopes was misguided. I found some aspects of the Internet Train facility were an excellent basic model for Main Street Online. The easy way in which the plastic card logged me in and tracked my usage struck me as a great solution to a practical issue, as well as being a great object for visual design treatment. I happily wasn't required to return the plastic card, and I picked up a brochure on the way out, copies of which are exhibited in Appendix A.

**Personal Worldwide Accounts**
As additional research for this project, I solicited personal accounts of public Internet access in an international context from two individuals, Jennifer Webster-Burnham (a 27-year old master's student in the humanities with an interest in the implications of Internet publishing)

and Sara McAulay (a 60-year old literature professor and early Internet junkie). Together, they have visited much of the world, including Japan, India, Southeast Asia, Bali, Western and Eastern Europe, Cuba, and South America. I emailed each of them a survey asking various questions about their experiences with Internet centers abroad. There were many similarities and interesting points in their responses, the highlights of which follow.

Both respondents would locate the nearest public Internet center most easily using local tourist information resources. Less reliably, travel guide books are starting to list public Internet centers. Sometimes, the respondents would accidentally stumble across the center while walking about the city and recognize it from English signs in the window. Jennifer reported that the vast majority of the public Internet centers she used offered a café or bar drinks, and sometimes phone services as well. Sara reported that the majority of Internet centers she used were small storefronts containing between 6-10 terminals and a check-in desk, with no other added services. However, she did visit a number of centers which sold beverages and small touristy knick-knacks, or which offered postal, telephone and fax services. She also cited a recent addition to the landscape in Spain: internet-access kiosks which are out on the sidewalk like phone booths, or placed indoors next to the pinball and video games in roadside diners and cafes.

Both respondents said that every public Internet center was a commercial enterprise which charged for its services, with a wide range in prices, anywhere from a low of $0.30 per half-hour (in Bali) to a high of $12 per half-hour (in a London hotel), with the average being roughly $2.50 per half-hour. Most Internet centers sold blocks of time by the quarter-hour, which tended to dictate Jennifer's and Sara's usage patterns, which ranged from 15 minutes to an hour per session. The range in size of the centers was considerable, from a single terminal to about fifty, with an average of about ten. Both also reported that the centers were almost universally very busy, often with a line of people waiting for an open computer, but that there tended to be daily traffic patterns similar to restaurants and other shops.

I asked about the physical appearance and ambiance of the public Internet centers. Sara reported that the centers which felt off-putting to her were the ones that seemed to be trying

the hardest, with lots of chrome, over-priced drinks, flashing lights and trendily attired attendants, which also felt obnoxious because of high noise levels. Sara felt that most welcoming and comfortable facilities were clean and quiet, not garishly lit, with someone ready to greet her, find out what she wanted and help her get set up. Jennifer reported also that she visited many places in Europe which felt very "designed," in terms of having high-tech looking tables and office chairs that were color-coordinated with the rest of the interior, usually in bright primary colors of yellow, red and blue. Most of these played rock music. By contrast, in India public centers tended to consist of a single computer crammed into a closet behind a store front. Jennifer found that in general, though, the most welcoming and friendly centers were those which placed computers on large shared tables, rather than into little separate cubicles. Both respondents said that a major and memorable plus was having some comfortable chairs to sit on while waiting for computers to become available.

Finally, I inquired about their interactions with the computer. Both respondents said that the computers were 100% Windows boxes, offering Netscape Navigator and/or Windows Internet Explorer web browsers. To get set up, at most centers a staff person came to the computer you chose and logged on for you, although sometimes log-on was as simple as clicking on the web browser icon. Sara and Jennifer both reported that most centers had a dedicated and branded home page where they would begin their session. Frequently, however, the desktop already would be displaying a web browser containing Yahoo! Mail or Hotmail, because the previous user had been using those services.

In general, most computers offered shortcuts on the desktop for web browsers, Microsoft Word, and Hotmail and/or Yahoo! Mail pages directly. Interestingly, Jennifer and Sara both exclusively used public Internet centers to read and send email, although Jennifer also surfed the web once or twice because she needed travel information. They saw other users surfing the web, playing games, word processing, and occasionally doing non-computer activities like reading books or writing letters by hand, although the latter was generally killing time waiting for a computer to become available.

## Availability of Internet Access in the States

There are remarkably few attractive options for public Internet access in the United States.
Today, options are limited to libraries and cafés. Personally, I have not seen many cafés or
bars in the States which offer public Internet access. It is somewhat more common for
coffee shops to offer a telephone jack where people can connect the modem in their laptops
which they brought to the café, although even this is rare. When cafés do offer public
terminals, there are generally a very small number available. In general, Internet service in a
café or bar is very expensive, and the general environment loud, making it of limited utility
for serious long-term endeavors such as research or writing.

Libraries provide public Internet access to varying degrees, and libraries in America have
changed a great deal just in the last two years. A government report entitled "The 1998
National Survey of U.S. Public Library Outlet Internet Connectivity: Final Report" (Bertot
and McClure 1) detailed the failure of libraries to provide fast access with the browsing
features that people want. In 1998, the libraries most lacking in fast connections and modern
computers were those in suburban and rural areas: 84% of urban libraries provide public
access to the Internet, while only 76.4% of suburban libraries and 67.6% of rural libraries
provide public Internet access. Many libraries still offered text-based, non-graphical user
interfaces, which often alienated and confused new users. This report also quoted a
conclusion from data reported by the National Telecommunications and Information
Administration, as follows:

> The gap between the information "haves" and "have nots" widened in the
> last three years. Blacks and Hispanic Americans lag even further behind
> white Americans in computer ownership and on-line access despite
> significant growth in computer ownership and overall computer usage in
> America. (Ibid)

The National Commission on Libraries and Information Sciences developed a follow-up
report entitled "Public Libraries and the Internet 2000," (Bertot and McClure 2) which
showed that as of September 2000, library Internet access had increased across the country,
most dramatically in suburban and rural areas, to 98.5% of libraries in suburban areas

offering Internet terminals and to 93.3% of libraries in rural areas. However, 71.2% of these libraries continue to lack any computer workstations equipped for disabled visitors, and only 35% of rural outlets have faster than 56kbps modem access. About 62% of libraries in general offer Internet training services, a respectable number, but insufficient to meet the demands of millions of new Internet users. Moreover, suburban library outlets usually have fewer than eight computer terminals available, while rural outlets have less than four.

The changes in library facilities over the last two years indicates a desire for Internet access in America. And the need definitely still exists for high-quality and human-centered public Internet facilities targeted for suburban and rural areas of America. No library or café has developed a customizable portal for visitors' activities, for example. Generally, these findings served to underscore the need for Main Street Online to provide equitable public access to the Internet for all Americans.

**Internet Attitudes**

Americans' attitudes towards the Internet can be characterized by age and technical aptitude. An newspaper article (Grenier) reported that teenagers spend far less time online than adults. Two Internet research firms released data in a joint report which showed that teens between the ages of 12 and 17 spent an average of 303 minutes online in June 2000, logging on eight out of 30 days in the month. Young adults aged 18 to 34 spent an average of 656 minutes on line, and logged on 13 days of the month, while adults 35 to 49 spent an average of 804 minutes online, logging on 15 days per month. The top three online activities were the same for boys and girls: receiving and sending email, using a search engine, and using an instant-messaging service, while 55.1 percent of girls and an even higher percentage of boys also downloaded music. The research firms concluded that teens spent less time online than adults due to schedules more crowded with school and after-school activities, and the need to share computer time with other family members.

Millions of Americans today profess themselves to be unenthused about using the Internet. An article on AltaVista.com discusses how foreign the Internet is for many non-technical people. " To some degree I feel bliss in being ignorant,' says [Joseph] Gunn, 69, one of

millions of Americans saying no to Net life." (Jesdanun) This article quotes a study released by the Pew Internet and American Life Project which found that more than half of the American adults who don't currently use the Internet have little or no desire to get online. (The flip side of this coin, of course, is that almost half of the American adults who don't currently use the Internet do have a desire to get online!) Also in this article, a 59-year old woman was quoted as saying: "The computer bothers me, makes me nervous. I feel like I don't have control. A lot of it is because I don't understand it." (Ibid) Encouragingly, the negative attitudes expressed in this article seem to be superficial ones which could be conquered with a good design motivated by the right goals.

Esther Dyson offers a refreshing viewpoint in her book *Release 2.0: A Design for Living in the Digital Age:*

> As you go out and explore the Net, you have to trust yourself and your own common sense. ...Precisely because the Net has and needs fewer broad rules than most environments, it depends more on the good sense and participation of each of its citizens. ...You now have more freedom and more responsibilities in everything from how you handle (or change) your job, to how you interact with the government, to how you establish a new friendship.
>
> ...On the Net, there's a profusion of choices—content, places, shopping environments, discussion groups....You may complain that you're overwhelmed with choices. ...You could just leave all this opportunity alone and probably carve out a fairly pleasant life for yourself anyway. ...But when you have choices, making no choices is itself a choice. Indeed, the biggest opportunity of the Net is that it allows you to go beyond choosing and start creating. The Net is unique malleable: It lets you build communities, find ideas, share information, connect with other people. (Dyson 280)

Main Street Online must answer the dual mandate of empowering people to use the Internet to their informed advantage and fostering community feeling. The challenge to do this well is great: it must be simple yet serve a diverse array of people.

## 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 hand-written 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.

## Chapter 4: Design

My goal for the Main Street Online designs was to develop a clear visual identity which spoke to the personas both aesthetically and conceptually. The graphic design should be both evocative and friendly, while communicating the nature of the business. I also considered how well the design would scale for the graphical applications I planned. The Main Street Online web site was conceived as a general portal, to offer visitors easy access to useful and fun tools such as email and instant messaging, as well as assistance with locating information from the Internet at large.

In the following sections, I discuss in detail both the aesthetics and the practical aspects of the designs shown. I first present the visual identity for Main Street Online, then the business card and the log-in card as graphical applications. A storyboard scenario demonstrates how primary persona Mary Lindbergh visits the Main Street Online facility and logs-in to a computer to use the Internet. Finally, I present the interaction design solution for the web site, including a continuation of Mary's scenario showing her using the portal.

## Visual Identity



## Discussion of Design

The visual identity for Main Street Online is simple and clean. It evokes the classic American street sign, with its rectilinear proportions, royal blue color and thin white border. The inclusion of the word "Online" in the name, though, and the bold sans-serif font Futura, with its very faint drop-shadow, communicate modernity. Futura is a powerful but likable modern font, and is furthermore a highly legible screen font which is also used for graphic headers on the web site.

This graphic design is easily applied to all the applications needed, from printed business cards to digital web pages. Visual identities which are primarily logo marks such as this one tend to weather through time better than ones that use representational graphics or trendy shapes. Also, the simplicity of this design leaves open a world of opportunity for more complicated and potentially dynamic graphical elements to be incorporated around this logo mark on a changing basis as desired.

## Application: Business Card



## Discussion of Design

Organization and balance are the hallmarks of this design. The logo mark at the top is strong and clean, surrounded by white space, while the necessary information about the specific Main Street Online center occupies the main area. The word "Welcome" is a pale-gray watermark that almost bleeds off the edge. The Main Street Online visual identity stands strong, definitively centered on the card, while the dialog with the visitor has only begun. "Welcome" is the word used to greet visitors to the Main Street Online web site, and it represents the friendly attitude Main Street Online takes to satisfy each and every unique individual. Using only two colors of ink, blue and black, this bold design should be printed on bright white stock.

Since the business card is picked up by local visitors and used as a reminder or a referral mechanism, the important information to include consists of the operating hours of Main Street Online, plus its location consisting of street address, town, and telephone number including area code. Including the URL is not necessary, because visitors generally will not have Internet access outside the Main Street Online facility itself, where the portal opens when the visitor logs-in.

## Application: Log-in Card





**Log-in card front (top) and back (bottom)**

## Discussion of Design

While Internet access and computer use is free at Main Street Online, people's time must be regulated in order to allow the greatest number of people to access the center's facilities. The log-in card has a magnetic strip which is encoded by the staff with a visitor's allotted time as well as with his or her identification information. This card is inserted into a card-reading box attached to each computer, which activates the Main Street Online portal. The computer recognizes the identification encoded into the card, and presents a customized web site

portal to each visitor. The log-in card uses the business card design for its front side, but being made of plastic just like a credit card, it will not be mistaken for the business card.

The reverse side of the log-in card presents helpful instructions for registering at the desk and inserting the card into the box with the magnetic strip facing upwards. It also includes a short enticement to become a regular at Main Street Online by signing the card. Linda, Mary, Gladys and other visitors can keep their log-in cards in their wallets and use them repeatedly, because every time they come in they must register for a certain amount of computer time. The card functions as a handy reminder device for them much like the business card, and its reusability saves money and builds loyalty for Main Street Online. The log-in card also provides other advantages which will be discussed later in the context of the web site design.

### Scenario: Mary Visits Main Street Online

The following scenario illustrates the total environment of the Main Street Online facility.

**1.** Mary Lindbergh needs to use the Internet to complete some homework. She walks down to her local Main Street Online public Internet center with her school books, and enters.



**1A. Mary approaches the facility, and sees clearly that it's open.**



**1B. Mary enters the welcoming Main Street Online.**

**2.** Mary gives her log-in card to the staff person behind the desk. He charges it with an hour's worth of time as she requests and returns it to her.



2A. The staff is very friendly at Main Street Online.



2B. Main Street Online business cards are available on the counter.

**3.** Mary goes to a vacant computer, and inserts her card into the log-in box.



3A. The box is clearly labeled, and the log-in card includes instructions for proper insertion.

**4.** Logging-in activates the browser, so that when Mary sits down at the computer, it displays her customized Main Street Online home page.



**4A. Mary quickly accesses what she needs for her homework.**

**5.** To be continued below: Mary will use the portal to do her school work, and more.

This scenario demonstrates how the Main Street Online public Internet center incorporates use of the visual identity in terms of signage, business cards and log-in cards, and also how the web site forms an integral part of the Main Street Online experience.

## Application: Web Site Design

### What is a Portal?

The Main Street Online web site is a general portal. There are a variety of portals on the Internet today, from specialized knowledge portals to business-centric enterprise and application portals, but general portals such as this one can thought of as a gateway to the Internet. They provide a set of convenient resources and services along with a sense of community for visitors. Visitors can use the Main Street Online portal to begin virtually all of their interactions with the Internet, as a tool for what they want and need.

Typically, general portals offer a package of features such as e-mail, chat rooms, news, weather, and always a search engine. Increasingly, a central feature of general portals is the ability for visitors to customize content, so that rather than having their favorite things located on a number of disconnected web sites, visitors can adjust the information displayed in their portal so that it serves their everyday needs. Time flows quickly on the Internet, and even novice Internet users will find that their surfing interests change with the currents. Customization is a key feature of the Main Street Online portal, discussed in detail below.

### Discussion of Technical Aspects

The Main Street Online public Internet center's computers are all PCs running a Windows OS, with the latest Microsoft Internet Explorer browser, displaying on a monitor whose resolution is set to 1024x768 pixels. This resolution offers a good amount of screen space while text and graphics remain a large, readable size. The typical concerns of web development in terms of browser-compatibility and accommodating different screen resolutions are moot because of the consistency of the software and hardware at Main Street Online. Up-to-date equipment would be specified at the time of implementation.

### Scenario: Mary uses the Main Street Online portal

This scenario continues the story of Mary's experience at Main Street Online as she uses the web site.

**1.** Mary has a human biology assignment to research diabetes. She knows that her favorite medical web site, YourDoctor.com, is a good source of such information.



**1A. Mary clicks on YourDoctor.com in her left-hand content area. To help indicate that it's a hyperlink, the text gets an underline when she rolls over it.**

**2.** Mary sees the YourDoctor.com site while retaining her Main Street Online header and left-hand navigation area. She uses the site to do her homework.



**2A. Mary does her research inside the portal frame. Then, she uses the Main Street Online graphic to return to her home page. A helpful ToolTip displays when she rolls over the graphic.**

**3.** Mary looks at the options on her home page, and decides that she wants to read some political news to catch up on events in the 2000 Presidential election.



**3A. Mary clicks the word "Political" under the News header, which changes its appearance to indicate selection.**

**4.** On the Political News sub-page, Today's Top Story discusses the election stand-off. Mary decides not to read any further political news.



**4A. After reading the Top Story, Mary clicks on "Email" in the left-hand navigation area to go to her Inbox.**

**5.** Mary has quite a few email messages in her Inbox, 23 of which are new. The system automatically selects the first one, and displays the message below the list of all emails.



**5A. Mary reads Joan's message in place. With a single click, she can reply to the message, or read another one, or start a new message, or more.**

**6.** Mary quickly reads another new email, but doesn't do much more because she has to get home—it's her night to make dinner for her roommates. She logs out and leaves, looking forward to her next chance to visit Main Street Online.

This scenario demonstrates a typical set of interactions within the Main Street Online web site. The home page is Mary's central navigation point, allowing her access to all the things she wants. With custom links, the portal becomes her gateway to visit web sites while never losing the Main Street Online context. She can also use rich navigation options on sub-pages to move quickly around the portal.

## Discussion of Design
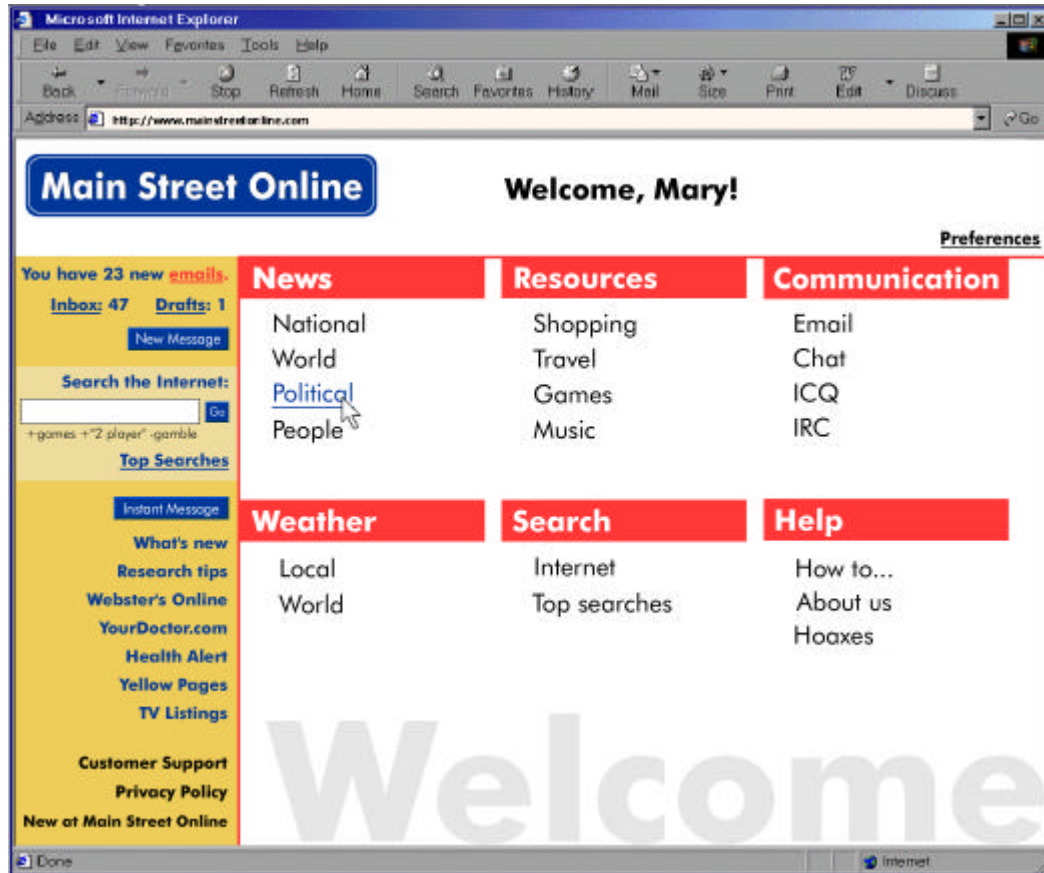


**Mary's home page, displayed in a Microsoft IE browser window.**

The layout of the home page is clean and simple. The system recognizes visitors' identities from their log-in card, so the header presents the Main Street Online visual identity with the personal greeting of "Welcome, Mary!" The watermark of the word "Welcome" reinforces the friendly theme established with the business and log-in cards, and visually anchors the whole screen without being intrusive. The screen has plenty of white space, but it's full of rich contextual information and options. The limited palette of colors helps to enforce the visual organization established by the grid. The Main Street Online portal must meet a diverse array of Internet needs. The home page makes all the content and services available at Main Street Online easy to access.

The home page is assembled according to this grid:
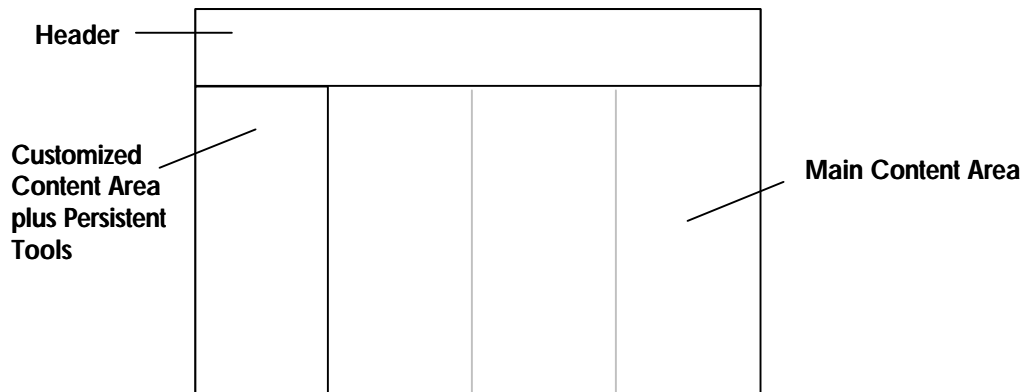


The main content area, occupying the largest center portion of the screen, features the sub-pages grouped under six bold red category headings which catch the eye. Persistently available items are located in the customized content area on the left-hand side, in the form of textual links and button controls. This area contains different, custom web links for visitors as well as persistent tools including personal email notifications and a New Message control, plus Internet searching tools and an Instant Message control.

A variety of visual feedback is shown in this interaction design. Underlines indicate hyperlinks. Main Street Online tools have persistent underlined text, for example: "Inbox." Text that leads to sub-page content is only underlined when the visitor rolls over the words, for example: "Political." The underlined hyperlink affordance is an important usability factor, and one of today's web site design standards. However, it's important not to overwhelm the screen with a plethora of underlined text, which becomes difficult to scan.

Visitors always need to know where they are when they're navigating around Main Street Online's web site. The underlined hyperlink provides the first visual feedback, but then selection and location must be indicated. When visitors follow a link to a sub-page such as "Political News," for example, location is indicated in several ways. The red bar across the top contains the page title, shown below:

Other text throughout the page also needs to indicate selection and location. The general standard is for the text of a selected link to be bolder and brighter than surrounding text. For example, after clicking "Political" under the News category, Mary goes to the Political News page, where her navigation area displays visual feedback for her location, shown below:



The word "Political" indicates selection with the same bold, white font as in the page title bar, and the category heading "News" is a thicker red than the other category headings. In the picture above, hyperlink selection indicating navigation to the Email page is also shown at the cursor focus.

Another place with locational information is the page indicator for a multi-screen article, shown below from the Political News Top Story:



Normal black text indicates the selected page, while the underlined blue numbers allow navigation and present the total number of pages. The "Next >>" link is a nice, large mouse target for moving sequentially through the article.

Naturally, some of the portal content is geared towards the fact that so many Main Street Online users are novices. One plague of untutored email use is the spread of urban legends and hoaxes, so preventative information on "Hoaxes" is prominently featured in the Help category. Tips for reducing spam emails are also offered in Help areas, along with virus alerts and good security practices. Main Street Online encourages considerate parental guidance,

and parents can arrange for their children to have restricted access to online features, which is easily handled with the log-in card identity encoding. Persistent links for Customer Support and the Privacy Policy are offered to visitors in the left-hand column of the portal.

Because visitors' computer use is time-constrained, it is helpful to display the time remaining for their session. However, this information is not displayed inside the portal. Instead, it is located in the Windows system tray, in the lower right-hand corner of the screen. The reason for this placement is because Main Street Online visitors also use external applications such as Microsoft Word during their session, so the time remaining indicator needs to be in a global location. A custom program for Main Street Online computers, this small desktop timer interacts behind the scenes with the log-in card to display the proper information.

**Customization**

Customization is an important aspect of the Main Street Online portal. These features are accessed by clicking the <u>Preferences</u> link in the upper right hand corner. This displays a screen which allows visitors to rename categories and remove sub-pages from their main content area, and also to add items to the left-hand content area of the home page. For Mary to set up her "YourDoctor.com" link, for example, she went to the Preferences page, and used a simple interface to enter a URL and a title for the text link in that area of her screen. Links added in this way will display framed inside the Main Street Online portal, as shown in the scenario.

Customization is not taken to extremes, however, because most Main Street Online users are novices. The portal automatically includes email and Internet search tools in the custom content area, as well as links for "Customer Support," "Privacy Policy," and "New at Main Street Online," so that almost all users can get what they need without fussing with their preferences. Main Street Online will update these persistent links whenever appropriate.
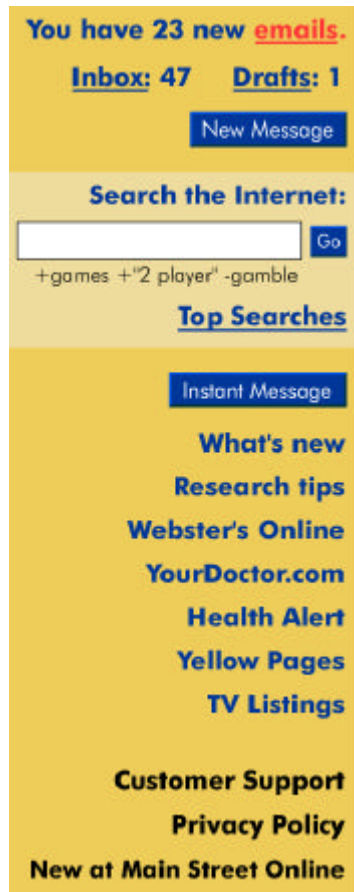
**Mary's customized content area looks like this, above**
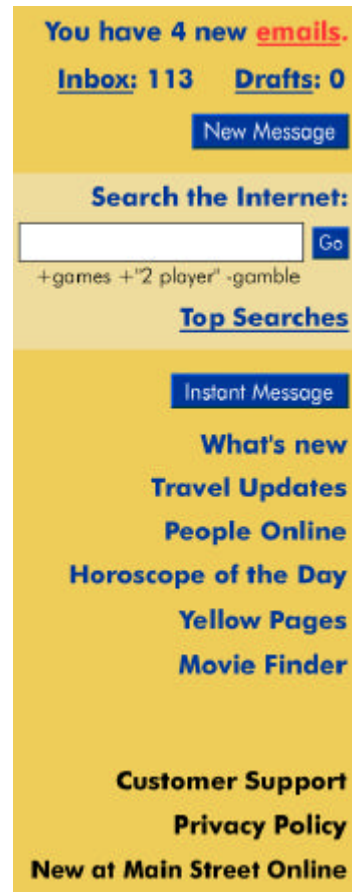
**This is Linda's customized area**

## Sub-page Designs

All the sub-pages display the basic organization shown in this diagram:



Header

Navigation Area

Title bar

Contextual tools area

Main Content Area
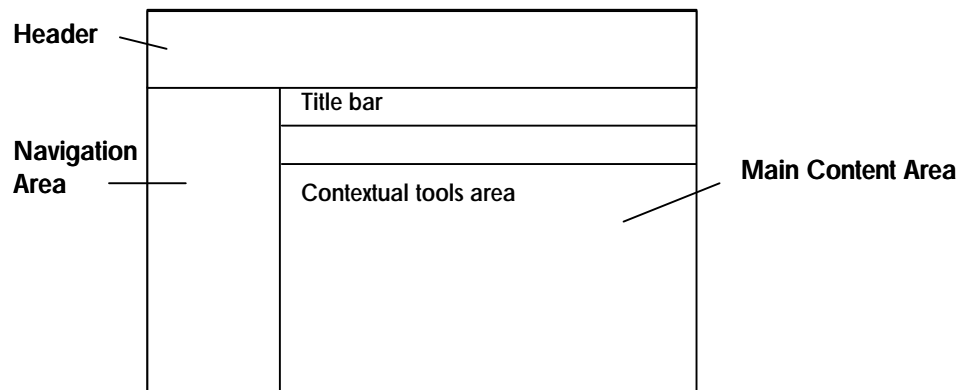
The grid layout of sub-pages is nearly identical to the home page, which makes leaving the home page reassuring and easy to understand. The header across the top is slightly shorter on the sub-pages, but it always contains the Main Street Online visual identity, which navigates back to the home page. The personal greeting has moved to the upper right-hand corner, while access to <u>Preferences</u> is unchanged. The largest portion of the screen remains the main content area, where the visitor's attention is focused most of the time while using a sub-page. This main area never needs to scroll when Mary navigates inside the portal, but it may require a scrollbar if an external site is framed in the portal, as seen in the scenario.

Separated by a red line and with a gold background, the left-hand navigation area is set-off visually from the main content area. This section is similar to the home page, but here it primarily contains links to the other pages in the web site. These page links facilitate easy navigation between areas of the portal. People don't want to spend time figuring out how to get somewhere—they simply want to get there. On sub-pages, this left-hand column also persistently presents tools for accessing email messages, creating a new Instant Message, and searching the Internet. These Internet search controls are pictured below:



Serving both novice and intermediate users, the Internet search field has some helpful example text for doing Boolean-style searches. The <u>Top Searches</u> link is a fun way for people to see what others are looking for online, with an educational and family-friendly range of searches presented. Several customized links also display below the Internet search controls on sub-pages, as seen in Mary's screen with "What's New," "Research Tips" and "Webster's Online" displaying in her navigation area.

As previously discussed, sub-page orientation is clearly indicated with a title bar. If appropriate on the sub-pages, a free-text search field is also included in the title bar, as shown in the Political News and Email images. This functionality helps make the Main Street

Online portal a more useful resource for visitors. Sometimes Gladys doesn't remember who sent her an email, but she can search for the words "tulip bulbs" to find the right one.

The area below the title bar is a contextual tool palette that has different purposes on different pages. On the Political News page, this area looks like this:

**Headlines:** **Election Results** **Environmental Bill Passes** **Capitol Hill Insider Book** **More >>**
**Editorials** Archives

The visitor is offered links to Political News headlines, with the ability to use the <u>More>></u> link to scroll through more headlines in this same area. <u>Editorials</u> and <u>Archives</u> are separate sections of the Political News page. The gray color of the Archives link shown here indicates that Mary has visited that area recently, which follows web usability standards. This visual indication is not used on the home page or in the navigation area, however, as it would make the concentrated display of sub-page links into an uneven patchwork of shades.

On the Email page, the contextual tools area below the title bar looks like this:

**Emails: 47  New: 23     Drafts:  1          New Message    Reply    Reply to All          Delete Message**
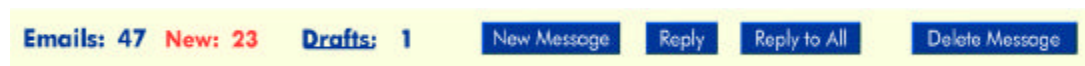
The portal displays the number of emails in the visitor's inbox, and how many are new. It also tracks any email messages which are drafts, so Mary can finish them later just by clicking the word "<u>Drafts</u>." The controls on the right half of this area launch email operations. "New message" opens a pop-up window to write and send (or save) an email. The "Reply," "Reply to All," and "Delete Message" buttons take action on the selected email.

Overall, the Main Street Online portal design as illustrated in these screens emphasizes ease of use, with consistent organization of navigational elements and contextual tools, and simple customization features that allow different preferences to be expressed. The clean, balanced visual design characterizes the whole experience at Main Street Online, which appeals to a wide range of people. Technologically-challenged people like Linda can read the screens and navigate the site, while fairly tech-savvy individuals like Mary can take quick advantage of powerful Internet tools.

## Other Considerations Noted

The following considerations were out of scope, but they help reveal the range of concerns around which Main Street Online was designed.

### Franchise issues

Naturally, keep the colors and furniture and everything else—including the physical layout—very similar from location to location. One major advantage of the franchise approach is making visitors feel comfortable with a familiar, recognizable environment even if they're actually thousands of miles from home.

The staff must excel at not making people feel stupid—that's their #1 priority, really, because none of the personas want to look stupid. Staff should be friendly, and happy to offer assistance. Employees must have a decent level of computer knowledge in order to rapidly and painlessly solve user's problems. Encourage visitors to help each other, too.

### Environmental design

The exterior signage for Main Street Online must be highly visible. It should be large but not disproportionate to other signs on its particular street. Ideally, the sign is readable from both the front and the sides. Also, leverage the sign shape of the visual identity for interior signage such as "printers," "game room," etc. These signs can be displayed on street-sign-style posts in order to indicate areas of the facility.

If necessary, install exterior windows on the side of the building facing the street. The windows should be large enough for the computers and desk to be visible to passerbys, but not necessary floor-to-ceiling. Use a window treatment to dim sunlight coming through, and entirely eliminate monitor glare. Never extinguish the light entirely, however. Window shades may be a good, modular solution.

Disability requirements for physical structures and signage must be followed. This includes making sure to provide wide doorways and aisles, and ramps at any place the level of the

ground changes. Having good ergonomic setups on the computer is vital. Main Street Online must minimize the negative impacts of using computer technology for the human body. This includes such elements as adjustable monitor stands, wrist supports, full-sized keyboards, and highly-adjustable chairs. Main Street Online will have a lot of senior users and children, with a wide range of body heights and shapes, and the equipment must accommodate different users. Also, offer a workstation equipped with devices for disabled visitors, including such tools as alternate pointer devices, and handwriting- and voice-recognition software.

### Interior design

The Main Street Online facility should look neither garish nor dull. Paint the walls primarily white. The Main Street Online blue should be used for signage as indicated, and can also be used as a wall or trim accent. A gray color close to the watermark shade is a good accent for accessory surfaces and materials like chair fabric. To keep the environment warm and friendly, use natural and blond wood finishes for counters, tables and trim. Investigate using artwork on the walls, perhaps something graphically simple but warm and agreeable like Henri Matisse's *Dance* or *Jazz* series.

Install lighting sources throughout the facility in a diffuse way that is conducive to working with computers indoors. Energy-efficient natural spectrum florescent lamps are recommended. Good wiring practices should be followed, of course, as well as attention to concerns in the event of a power failure.

Main Street Online must provide several comfortable chairs and small side tables in a waiting area that accommodates conversation. Generally, aim for the ambiance and warmth of a bed & breakfast inn, to make the Main Street Online center a place that people treat with respect, but where they also feel comfortable enough to spend some time.

## Chapter 5: Conclusions

### Analysis

The most beautiful things about the design process are its conceptual flexibility and its power as a formal system. The formal system of design in fact necessitates mental flexibility, as the designer keeps an open mind and an eye out for insights in the course of iterating certain aspects of the process and testing the various concepts thereby developed. The early stages of design work demonstrate the how good ideas are honed while weaker ones are eliminated. A good concept will stand strong and reveal new merits when different personas and situations are thrown up against it**.** My design work for Main Street Online demonstrates the power of process, as ideas are discarded and insights pursued. The artistic spark of creation is the mystery at the heart of design. However, the scientific side of design manifests itself in terms of attention to research and adherance to a formal, iterative design methodology. The practice of design truly exists at the intersection of art and science.

### Assessment

I chose the visual design for Main Street Online illustrated above because it manifested clarity, simplicity and flexibility. The design applications adhered to the same hallmarks, with the additional concern of creating balance among multiple and dynamic elements visually and conceptually. The portal-style web site addresses the goals of the personas, with visual design considerations taken from the Main Street Online identity.

Quality of design tends to be proportional to the amount of time invested in it, and more time spent on this theoretical project likely would incrementally improve the actual designs. The success and appeal of this current design could be assessed through surveys with visitors and reactions in the media. Main Street Online could undertake a re-design at some future date after launching as a franchise endeavor, a process which many businesses undergo after a certain period. In the meantime, Main Street Online has an identity and the means to bring Internet access to towns across America.

## How the Personas are Satisfied

The business card and log-in card are helpful for the personas in different ways. Reading the telephone number from her log-in card, Linda calls Main Street Online from work to ask: "Is there a wait for a computer?" while Teddy calls in the evening after doing homework to ask: "Is the game room full?" Gladys looks at the business card she attached to her refrigerator door to remember what time the center opens in the morning, as she's an early riser. Mary passed out some business cards to her friends and now she has a crew of people who will go with her to Main Street Online.

For the interaction design, serving primary personas Mary and Linda is most crucial. Mary is pleased by the many easy entrance points that the portal offers for what she wants to do. "Find information" and "Get her work done quickly" are Mary's most important goals. The web site offers helpful tools for her school research, including a persistent Internet search field and direct navigation from page to page. Linda is pleased by the focus on communication and fun which the Main Street Online portal offers. Her goal of "Be entertained" is answered with resources that the site offers. She especially enjoys poking around the People News section, and following Top Searches. Linda also appreciates being well-oriented as she navigates around the site, which prevents her from feeling stupid.

Customization is appreciated by all the personas, as Mary can put research tools into the left-hand content area of her home page, Linda can put "Travel Updates" into hers, and Jean-Luc can put Paris weather into his. All the personas are pleased on the communication front by the persistent availability of tools including Instant Messaging and new email notifications. With several access points for favorite areas, it's never hard for Mary or Teddy to get from one place to another.

For Gladys, the large font sizes on headers and article text are a major plus, never less than 12 pt. The designs for Main Street Online emphasize simplicity and clarity rather than flashiness, which appeals to her. The facility is a comfortable, friendly place to interact with others and with technology. Gladys even learns to customize her portal by engaging in conversations with the helpful staff.

Teddy Jones particularly appreciates the fun game room. Main Street Online has features aimed at people his age, and Teddy is excited to have quick access to online game sites all around the world. Jean-Luc finds himself impressed by the whole facility, which reminds him of better European Internet centers. He particularly likes the email which is so easy to use! He never feels out of place at Main Street Online, and the simple language of the portal doesn't challenge his English skills.

## Impact

Around the globe, society needs to do a better job of linking the "haves" and the "have-nots." Everybody must be given the chance to learn about technology and use it to improve the quality of life. Additionally, as computing machinery becomes more and more an everyday part of our lives, we have to recognize that some people feel alienated from and wary of complicated technology. If we spread the knowledge of how computers and particularly the Internet will enrich and improve our lives, people will grow comfortable with the presence of these new digital tools, and excited about this technology benefitting them directly. This effort can begin by empowering people through friendly introductions to technology and ongoing education about how to use it best. Starting with the fundamental human activities which the Internet already encourages – communication, entertainment, learning – Main Street Online promotes this warm atmosphere of community and sharing.

### Commercial viability

Main Street Online centers would likely be supported by a combination of public and private funds in order to offer its services free of charge to all town members. It would be staffed by one to two community volunteers at all times. To offset costs, a retail area could be included with value-added services such as printing, web site hosting or the sale of media storage devices. If the public model proves too expensive to support, after engendering a certain amount of loyalty, the center could charge visitors a token fee for Internet time. I do not recommend including a café at Main Street Online, because drinks and computers don't mix well, and in most cases, downtown areas have a coffee shop that serves drinks. Main Street

Online should stay focused on its central mission of delivering Internet technology in a friendly, supportive and fun environment to people of all kinds.

Creating ties with neighbors, and encouraging cooperation rather than competition, makes Main Street Online more successful in promoting togetherness. Some provisions, largely legal, need to be made for unpleasant situations arising by allowing unfettered access to delicate computer facilities, but in general, Main Street Online wants to rely on the honor system. Establishing trust in its staff, equipment, and visitors' good judgment is paramount to making this center viable in the long run as a friendly local storefront. I envision Main Street Online posting public event posters in its windows, and offering free maps to the local area as other value-added services.

Another commercial consideration might include partnering with an enterprise such as Kinko's, who could subsidize costs and reap mutual benefits with Main Street Online. However, this issue could become a morass of sponsoring and marketing, commercial conflicts of interest calling into question the idea of this venture as a truly public enterprise. I firmly hold that the Main Street Online portal should not display flashing advertisements, as there is plenty of such distraction online already. A more attractive avenue for partnership would be with a software or hardware manufacturer who contributes equipment and monetary support in exchange for a persistent acknowledgment on the Main Street Online web site, where a discreet "powered by PCSoft" text, for instance, would not irritate visitors.

**Making this Design a Reality**

Main Street Online could easily become a reality in America. Were it to be implemented as a franchise business, I believe it could be a huge success, although not without a lot of hard work. Internet centers are quite popular all around the world, and America should be no exception. Targeted at the American suburban and rural communities, this facility serves a major need. The successful implementation of a franchise is no small matter, though, as it involves large amounts of organized capital and personnel. Attention would have to be paid to maintain the community-oriented values upon which Main Street Online was created. After introducing people to the Internet with its marvelous opportunities for expanding

one's involvement with the world, Main Street Online should grow with the times to incorporate new technologies undreamed-of today, while preserving the community approach which makes it so special.

We must affirm the just power and positive benefits associated with good design. Humans are naturally inclined to make order out of chaos. The extraordinary R. Buckminster Fuller, inventor, architect, engineer, mathematician, poet and cosmologist – i.e., consummate designer – wrote in his book *Critical Path*:

> The artist-scientists...assume intuitively that a more man-favoring rearrangement of the environment would be conducive to humanity's spontaneous self-realization of its higher potentials. ...In the vast majority of humans there is an innate inclination, propensity—even drive—to make sense and to produce order in consonance with universal order. (Fuller 27)

Designers are today's artist-scientists, and the discipline of design contains the seeds of humanity's future happiness on earth. The practice of design is fundamentally problem-solving, and designers need to take some responsibility for solving problems besetting humanity, for the sake of a better future. Design shapes many aspects of our lives already, from buildings and environments to products and software, and it has the capacity to touch and improve many more. Visionary design which is human-centered makes the world more enjoyable, wonderful and beautiful.

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# Appendix A: Internet Train brochure and log-in card



**Brochure (top, front and back) and log-in card (bottom, front and back)**
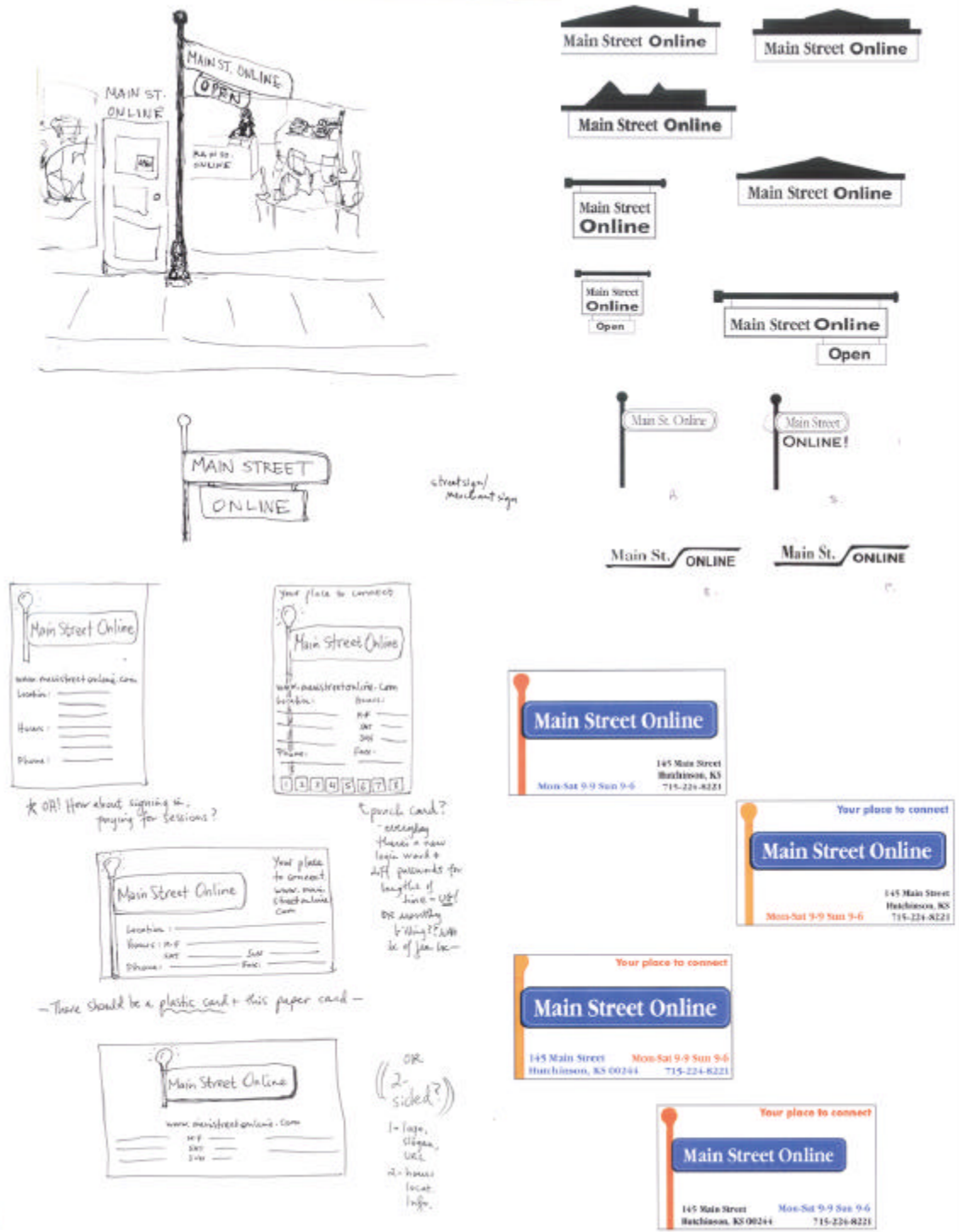
## Appendix B: Process Drafts



**Ideations and thumbnails for the visual identity**

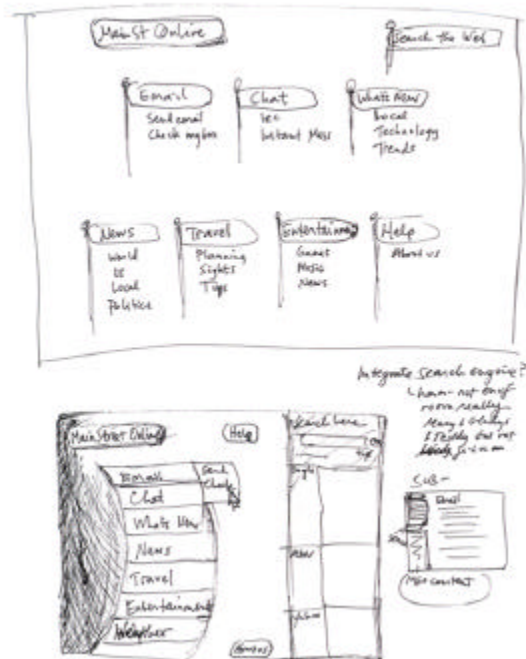**Ideations, thumbnails and roughs for the center, visual identity and business card**

**Ideations, roughs and comps for the business card and web site**

**Thumbnails and comps for the web site**