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.