Barbara Leondar, Ed.D. ’68, never used computers at work. E-mail was virtually nonexistent when she retired in 1991, as were personal computers in the office. “I was also fortunate enough to have a first-rate secretary, so I didn’t need to acquaint myself with the technology,” explains Leondar, the former president of the University of Maine at Fort Kent. “It was not until after I retired that I took my first class. Then I began to see what was available on the Internet.” It was the inventory at the Internet Public Library that most fascinated her, the shelves upon shelves of books available at her fingertips, right at home. She also found English-language newspapers from around the world and “visited” exhibits at museums—“instead of having to trudge through the snow to get there,” she adds. “It opened up a whole new world for me.”

These days the 75-year-old is something of a resident expert at the Harvard Institute for Learning in Retirement, where she teaches an advanced course on research and the Internet and has distributed custom-made disks that list the best libraries, websites, and other online resources for scholarship. She will soon run a workshop for other HILR teachers on how to download artwork for the fall art courses. “The prospect of taking the images off the Internet was met with great glee,” she reports, because it is “not always easy for older people even to get to the art library or bookstore, to cope with parking, or to return library items on time.”

Leondar is an unwitting member of a select group. About 19 percent of people age 65 and older have access to and use the Internet, according to data collected in March for the Washington-based Pew Internet & American Life Project, funded by the Pew Charitable Trusts. Because many seniors log on just to use e-mail and to stay more connected with family members, an even smaller number have explored leading-edge software or conducted research, like Leondar. The study also found, perhaps not surprisingly, that “the more active, wealthy, and educated seniors are the most likely to go on-line,” says Susannah Fox, director of research for the project. “Those ‘fervent few’ are a small group that really, really love it.”

Many of those “early adopters” (who took computer courses when they first began to be offered in the 1990s) “have taken the technology and run with it,” says Carol Greenfield, S.M. ’71, founder and president of Senior Web Solutions, in Newton, Massachusetts, a computer-education and -support company that focuses on those over age 60. Something of a gap has developed between seniors who are comfortable with the new technology and...
those who believe the computer age has passed them by. “What I’ve been finding in the last couple of months in talking to the people who run these basic computer-training programs is that enrollment is down,” Greenfield explains. “Does that mean seniors are not embracing technology? No. It means that the initial wave, the early adopters, have already gotten through the basic training and are moving on.”

The rest of the over-65 population is not exploring computer technology as readily, for a variety of reasons—fear of learning something so new, financial constraints, lack of exposure to computers or training, poorly designed interfaces, or, simply, personal disinterest. Some of those aged 75 and older probably don’t realize how e-mail and the Internet could help them feel more connected to other people and activities. “They tend to think, ‘It’s not for me, I’m too old, what do I need it for?’” Greenfield says. “We try to help them see that it is advantageous to cross the digital divide. There is a real need, especially as people become more home-bound as they age. It’s never too late to get on-line.” In a survey her company conducted with Simmons College alumnae, she found that the primary reason those elders began to use a computer was to “overcome fear of exclusion.” They want to communicate with grandchildren and relatives and with peers who have learned the new technology—really a new language. “Basically we have a new dictionary now—‘Point, click, connect’—and many older people don’t know what we are talking about,” Greenfield adds. “There is pressure from peers or family members to learn it.”

She helped her own friend and mentor, former Harvard School of Public Health professor Paul Densen, of New Hampshire, set up an e-mail account through MSN TV (formerly Web TV) that enables him to view and use the system through the television, instead of a computer. “My children had been urging me for some time to get a computer, because they found it difficult to communicate by telephone due to my increasing hearing deficiency,” the nearly 89-year-old Densen e-mailed this interviewer. “I dragged my heels because I found all the different choices and different languages confusing and the mouse not easy to use.” But the technology “has brought the family closer together, and made contact with friends more frequent,” he adds (and triggered a continuous avalanche of junk e-mail, which he detests). He occasionally shops for books on-line or looks for travel opportunities, although he misses “the personal touch.” The local historical society, of which he is treasurer, recently bought a computer and a friend has been showing him how to use the machine to speed mailings to society members. “I have a long way to go on this,” Densen reports. “But if I use it often enough, I will feel more comfortable with it. Practice, practice, practice.”

One word says it best...

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browsers in 1994), basic computer-training courses flourished. SeniorNet, a non-profit California company, began acquainting elders with computers as early as 1986, and now operates 250 learning centers nationwide (staffed primarily by elderly volunteers, including former IBM employees), as well as on-line communities in every state and 500 active discussion groups. The topic “World War II memories,” for example, has 23 different roundtable discussion groups. The Philadelphia-based, nonprofit Generations on Line is aimed at the large senior population that cannot afford, or chooses not, to go on-line by selling low-cost, specialized instructional software to senior communities, where patrons can use it for free. The Web-based software teaches basic Internet functions by using familiar images and a large typeface.

But there is a definite need, says Greenfield, for more community-based services to facilitate seniors’ access to the important information on the Web, particularly to government and community resources. Because there is also a socioeconomic divide in computer use, she stresses that such programs—and support from well-trained staff—should also be available in public venues such as libraries. She points, as an example, to SeniorNavigator (the brainchild of Virginia governor Mark R. Warner, J.D. ’80), which provides elders and their families with 18,000 statewide resources for health, legal, financial, and residential information and links to 7,000 trained volunteers who help seniors access computerized information in public settings. Greenfield is working to develop a similar program in Massachusetts.

This spring in Boston, Senior Web Solutions began offering “cyber concierge services” to members of a new and unique community of elders called Beacon Hill Village. The nonprofit membership organization allows older people who live in and adjacent to that neighborhood to stay in their homes as long as possible. Cultural programs, seminars, and trips are offered along with housekeeping, transportation, and assisted-living services; the group has gained attention as a national model for “aging in place” with grace.

Thus far, the cyber services provided by Greenfield and her business partner, Len Heier, have included aiding a woman who received a computer from her son, opened the box, and did not know how to plug the machine in or turn it on, and setting up a home office for a recently retired woman eager to start a new business. “So many of these older people who did use computers at work had an IT [information technology] staff to solve problems,” Greenfield says. “Then they get home and they don’t know how to get equipment, what to get, how to use it or fix it. Or what people have seen or worked on in a computer class is completely different from the system they have at home. There is more of a need now to provide in-home services.”

The chairman of the board of Beacon Hill Village, David B. Arnold Jr. ’44, M.B.A. ’47, contacted Senior Web Solutions to...
evaluate his computer system, which fits into a snug home-office space, and improve it. “I’m fairly proficient in the computer, for a guy who will be 80 in July,” says Arnold. As the former senior vice president of the Shipley Company Inc., which developed, among other things, a process for laying down patterns on a semiconductor chip in 1964, Arnold was not unfamiliar with computers—though he never actually used one at work. He took his first computer course (from Arnold professor of science William Bossert) as a retiree, in 1985.

Of Senior Web Solutions, he says, “They were able to tell me about options for equipment, such as using an optical mouse—I had barely heard about it—and they gave me some techniques for enlarging and moving around digital images of my wife’s work. She is an artist and I have her paintings in digital format.” Generally, Dorothy Arnold steers clear of the computer—like many of her husband’s cohorts. “I’m in an investment club in Concord,” he reports, “and there are three people who are proficient. The other nine won’t touch the computer at all. They think it’s too complicated. I have a friend who is dying to get into it and I put him in touch with my computer guru. He heard the guru talk for half an hour and just said, ‘I can’t do this.’ It’s like getting a new camera or a new car—there are all these bells and whistles you have today.”

Thus, Greenfield and Arnold have also discussed ways to expand technological education and opportunities for village members. “It’s a tool to further enhance their community,” she believes. “And there are ergonomic and space-planning issues—and health-related issues—around using the computer in their homes,” especially as people age.

There is no doubt computer technology can be daunting to the uninitiated—even for those in the best of health. Imagine what learning new technology is like if you suffer from age-related impairments. As a result, companies and researchers are starting to look at new ways to improve computer technology for older people. “The interesting thing is to think about people like the baby boomers in the workforce today, or people in their fifties and sixties,” Greenfield says. She and Arnold are both involved in the development of technology that would be easy for people with physical impairments to use.
sixties, who have been using computers for five or six years in the workplace and have had to interact with technology at home. What kind of devices will be available to them as they age?” asks Sandra L. Kogan, a graduate student at the Human Computer Interaction Group at the University of Massachusetts at Lowell. “Even in healthy aging, the body goes through changes over time. There’s more rigidity in the wrists, or arthritis. Certain repeated keystrokes, or moving the mouse, can become problematic. There is memory loss, cognitive difficulty. How can you reconfigure your computer system to meet those needs? How can you build tools that adapt to aging users? The answer is not ‘One size fits all.’

“We all have a very personal interest in increasing usability for seniors: It’s the one user category we’re all likely to join one day.”

This summer, Kogan will complete empirical research on how younger and older users differ in their basic computer interactions—the way their hands move over the keyboard and use the mouse, the performance of simple tasks like searching for and submitting information. Her data may be useful not only to computer-makers and designers looking to create better tools for seniors, but in reference to age-related biases in the workplace.

Older workers who may be experiencing minor age-related problems may not be able to adapt as quickly to new technology introduced by their bosses, Kogan explains, or even be able to read their screens—given the contrasting type and text, the whirlwind of colors and images on websites, even popular font sizes—as readily as they used to. The demands of technology lay bare issues of potential age-discrimination, she says, citing an engineer in his early fifties who has used Computer-Aided Design (CAD) software for years, and now needs bifocals (prob-
bly partly as a result of years of heavy computer use—which is another topic altogether.) “He was worried about his job because he has to compete with younger people,” she says. If you have to look at the monitor with your bifocals, you have a hard time because you constantly have to move your head up, then down, then up, then down. It was driving this man crazy.

“‘Computers are so versatile and adaptable,’ he asked me, ‘Why can’t they create something called a bifocal view?’ so that the text, or whatever appears on your screen, would sort of mimic what your eyes do. The text could be bigger at the top and smaller at the bottom. It could be an option in the hardware. From a software design perspective, it wouldn’t be that hard to do.” A fair number of products using “assistive technology” are already available: ZoomText magnifies the computer screen; screen readers such as JAWS read aloud highlighted text; voice and synthesized speech recorders turn sound into text, and vice versa; and there are hands-free computer mice, products that use Braille, and, for people with more complex disabilities, products such as the “Eyegaze Communication System.” (See “Web Resources,” on page 28H, for references.)

Computer usability for seniors is garnering significant attention, especially in the wake of federal guidelines issued last year in connection with Section 508 of the Rehabilitation Act of 1973. The amendment stipulates that any electronic and information technology the government buys must be accessible to people who are impaired. The Web Accessibility Initiative (www.w3.org), the Center for Applied Special Technology (www.cast.org), and other groups have released their own usability tests and recommendations. “Big vendors who sell their products to the government are concerned with making their software accessible,” Kogan notes.

A report published in April by Nielsen Norman Group (a think tank and consulting firm that focuses on the human use of technology) found that many current websites violate usability guidelines, and that websites are twice as hard for people over age 65 to use as for nonseniors. Older people use the Web primarily for research on hobbies and medical issues, to track in-
vestments, get news, and, to a lesser extent, to shop and bank, the study showed, yet in doing these tasks they made more mistakes, took longer, and had less success than younger people. “Websites tend to be produced by young designers, who often assume that all users have perfect vision and motor control, and know everything about the Web,” notes the report. Seniors with memory or cognitive erosion also tend to get lost in the maze of links and options on a given website, cannot read text in jarring or contrasting color schemes, or in point sizes smaller than 12, or do not understand what errors they have made in entering data such as credit cards, phone numbers, and so on. “Besides the business reasoning,” the report’s authors add, “we all have a very personal interest in increasing usability for seniors: It’s the one user category we’re all likely to join one day.”

IBM, which has sponsored SeniorNet and its learning centers since its inception, is testing a new product, Web Accessibility Gateway, intended to make websites easier for “differently abled” people to use, according to Marc Itzkowitz, a Palo Alto software marketer and SeniorNet consultant on the project. “We are focusing on people who have some form of vision impairment or physical impairment of their hands,” he explains. “Those are two of the most common areas of concern among older adults, things that make looking at a monitor and navigating the keyboard difficult or impossible.”

The product, now being tested in 20 of SeniorNet’s learning centers (including the one in Springfield, Massachusetts), helps ease problems associated with looking at contrasting colors (yellow text on a white background, for example) and “simplifies some of the Gen X formatting,” Itzkowitz says. “It provides alternative ways to read pages—like voiceover, the ability to highlight a section of text and have it read to you—and helps on the physical dimension by simplifying complex keystrokes, or even replacing the mouse with basic keyboard navigation.” The system is also centralized, which means it points the computer to a web service—a server that provides various capabilities from one location—so users never see it, never have to install anything.
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Web Resources

Following is a list of websites that may prove useful.

- www.atia.org
- www.beaconhillvillage.org
- www.generationsonline.com
- www.seniornavigator.com
- www.seniornet.org
- www.seniornavigator.com
- www.webaim.org

Companies that sell equipment and provide resources for assistive technology include:

- www.abilityhub.com
- www.abledata.com
- www.assistivetech.com
- www.freedomscientific.com
part to gain access to that “very important and enthusiastic market,” he reports. “We have had much interest in figuring out how to take SeniorNet for-profit because there is unique access to a very hard-to-reach market.”

Hard to reach? If one of the goals of computer technology is to make people more accessible to each other—and to the forces of commerce—then Barbara Leondar might be just the kind of person marketers are looking for. As the interview with her is ending, she takes a card from her pocketbook. “One of the first things I did when I began to use computers was to make calling cards, because you don’t have them when you’re not working, and I missed them,” she explains. But phoning the number printed on the card is not the best way to contact her. “The phone line is hooked up to the computer; I only have one line. People are always scolding me, saying I’m never available. But that’s not true,” she adds. “I’m always available on e-mail.”