



Enabled by design

They like to travel the world and putter in the back-yard garden. They also are adept at whipping up a puff-perfect soufflé after working up a sweat with their friends. Unlike their mothers, older women in America are far less sanguine about trading in their Reeboks for a recliner. They place a premium on staying healthy, attractive, and physically fit.

At the same time, however, these women are more likely than men to suffer from crippling arthritis or to be widowed and living alone. They don't have an extra pair of hands to help pull up a zipper, haul a bag of yard waste, or hoist a piece of luggage into the overhead compartment of an airplane.

Of the 35 million Americans age 65 and older, more than 20 million—nearly 60 percent—are women. As the population ages, the ratio of women to men increases dramatically. Yet despite such demographic muscle, the needs of women in this age bracket are largely ignored in the marketplace.

The untapped commercial potential was the subject of an intensive, three-month-long course sponsored in spring 2006 by the InnovationSpace program at Arizona State University. Prasad Boradkar is the program's co-director and an ASU associate professor of industrial design. He says that four teams of undergraduate students were drawn from industrial design, graphic design, engineering and business programs. Their first task was to identify product opportunity gaps, known as POGs.

Their goal? Improving daily life for older women.

So just how do 20-somethings come to understand the complex needs of people who are, well, old enough to be their grandmothers? For starters, they interviewed their mothers and grandmothers. They took notes as they watched them go about their daily routines such as planting flowers or cleaning the bathroom. They tagged behind carts in discount stores, observing shoppers as they puzzled over the tiny print on labels or struggled to pull jumbo boxes of detergent off tall shelves.



Shifting workplace boundaries

Cell phones, PDAs, and laptop computers are the "Trojan Horses" of our world. They transport work from the office through the walls of our personal lives.

Maintaining a boundary between work and home and between the roles we assume in those places has always been tricky. Some people build those walls high and thick. Others try to take care of business and family by mixing the two together.

Blake Ashforth is a management professor at ASU's W. P. Carey School of Business. He studies these "boundary theory" issues. Ashforth says that people create and maintain boundaries as a means of simplifying and ordering the environment.

How do we deal with the role shifting? Ashforth says that we adapt by either segregating or integrating our roles.

Segregators keep their domains strictly separate. However, they can experience difficulties when the time comes to cross the border to home. Integrators allow some crossover. For example, some workers allow home issues to impinge on their time at the office.

More and more companies offer perks designed to mediate these work/life issues. It's not as easy as installing an employee weight room or day care center, however. There may be unintended consequences.

"On-site day care might cause working parents to feel that they should visit their children periodically during the workday, thereby interrupting the flow of their work role," Ashforth says. The upshot: compromise of the integrity of both home and work.

"We're leaving this to the individual to sort out. It's hard for any one person to stem the tide of technology-fueled boundary-crossing," Ashforth adds. "We've now made personal an organizational problem. But most people don't have the power to re-draw the boundaries." Carrie Barnett

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The students' field observations resulted in a long list of POGs. Once they zeroed in on a single product idea, they began to methodically work through four criteria of product development known as Integrated Innovation. In every InnovationSpace course, student teams are required to consider four questions: Is the product desirable to users? Is it possible through engineering? Is it valuable to business? Is it good for society and the environment?

Boradkar says that answering these questions ensures that the products serve the needs and desires of targeted users. They also have the potential for creating real value for the businesses that produce them. "Following the Integrated Innovation model also results in products that minimize negative effects on the environment while meeting reliable, real-world engineering standards," he adds.

For help in these tasks, the ASU students benefited from the experience of a diverse group of professional consultants. Leading the way was a trio of seasoned design managers from Cincinnati-based Procter & Gamble, Inc. Their conference calls and site visits proved helpful in developing product brands.

Products need a recognizable identity that is created through the use of color, texture, typography and language. Good branding is critical since "most products get a five-second glance from consumers," counseled Joel Kashuba, one of the participating P&G design managers. "Within that time, you need to convey a story that is inspirational, memorable, and crisp."

To better understand their target users, students also got valuable advice from Patricia Moore, an industrial designer and gerontologist. Moore made headlines in the late 1980s when she walked the streets of 116 cities disguised as an elderly woman. Her field study provided stunning insights into the obstacles that older women confront in daily life.

From Moore, for example, students learned to watch their language, especially the use of the term "aging women." "We're all aging," Moore says.

Designers need to understand how difficult it is for people with failing eyesight and arthritic fingers to open tamper-proof pill bottles or to apply mascara. She suggested that students wear eyeglasses smeared with a light coating of petroleum jelly, or bind some of their fingers with masking tape.

The ASU students developed a number of ideas for the project. One was a luggage system that could be maneuvered and disassembled at the touch of a finger. Another was a bedside diffuser that delivers timed doses of calcium to sleepers throughout the night. A third involved dispensing systems for soaps and sunscreens using capsules that are easy to pack and, at the same time, eliminate excess packaging waste.

Boradkar says that that the Integrated Innovation model prompted students to come up with novel design solutions that not only benefited users but also the environment.

For example, graphic designer Chip Davenport was charged with creating the protective packaging for his team's vitamin dispenser. The item is a small, lotus-shaped object known as Aruna. Davenport tucked the product in a jute bag that could be starched in the shape of a box. Purchasers could then launder the bag to remove the starch and reuse it for other purposes.

Other teams developed ingenious methods for understanding their targeted consumers. For a brand called Via, the group noted that people over 65 make up nearly 80 percent of all leisure travelers. Yet for most people, getting to and from their destination is anything but a vacation.

The Via team charted what they called travel stress points. They used an EKG-style graph of peaks and troughs. Spikes of anxiety were marked by activities such as booking tickets, checking luggage, or getting on and off aircraft.

The students then devised ways of easing stress along these points with the needs of older travelers in mind. This strategy led industrial design student Erik Hernandez to design modular luggage fitted together like nested kidney beans. But he saw that joining the pieces together with buckles and clasps would pose challenges for arthritic hands. Bioengineer Jonathan Lim chimed in with a brilliant engineering solution to Hernandez's design problem. Lim specified a material known as ferromagnetic shape memory alloy for the luggage casing. The material allows magnetic attraction to hold the sections together. A simple touch of a button sends a weak, battery-operated electrical current through the material, unlatching the luggage into smaller, more manageable components.

"The students' work reinforced lots of recent research," Boradkar says. "Those study results show that people can have greater control over their health and happiness in their older years than previously believed possible. Responsible designers and corporations can help promote a healthy, and more satisfying, aging experience by providing tools that allow women to continue their preferred lifestyles longer." **Adelheid Fischer**

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