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How d-mix lab Is Using Design to Rethink Aging, Longevity and Everyday Life

By **AgeTech Collaborative from AARP** posted 21 hours ago



As populations age and demographics shift, designing products, services and communities that work well across generations requires looking beyond individual solutions. **d-mix lab**, an AgeTech Collaborative™ (ATC) participant, is an international collective of design practitioners and academic researchers working to shape a "longevity society." Rooted in the Taubman College of Architecture and Urban Planning at the University of Michigan, d-mix lab brings together design research, service innovation and emerging technologies. With this interdisciplinary approach, d-mix lab explores the challenges of aging across scales, from individual products to city-wide systems — all with the goal of building healthy and equitable multigenerational products, environments and cultures.

We sat down for a chat with Sheng-Hung Lee, Director of d-mix lab and Assistant Professor of Urban Technology at the University of Michigan, who discussed the lab's Design for Longevity approach and how solving today's aging challenges often requires looking beyond the pain points themselves to the systems that give rise to them.

This interview has been edited for clarity and length.

Please tell us about d-mix lab.

The "d" in "d-mix" stands for "design," and we focus on design research, mixing design with other disciplines. We're especially interested in Design for Longevity, meaning that we use design to explore and address issues related to aging. Design for Longevity is the lens we use to look at society in a way that celebrates people's lives across the lifespan and across demographics, because we think that longevity is meaningful to a multigenerational audience — it's not just for older adults.

We definitely have a human-centered design approach: We really care about users' perspectives and understanding what their pain points and challenges are. More than that, we're particularly focused on human-centered **system** design. For example, we don't focus on design for one particular senior housing facility or even for a specific city; we think about design from the perspective of, "How can we scale?"

Can you give us an example of system design in action?

We recently worked on a project here in Michigan with a local senior center where we focused on the question, "How can we redesign their food delivery and nutrition program?" As part of reaching that specific goal, we wanted to understand the bigger picture about what the end users wanted and needed out of that program.

Taking a system design approach, we started thinking about the surrounding community. There's a school near the senior center, so we explored the question, "Can we share resources with the school and deliver meals together?" Going even bigger, we looked at the county: What are the other senior centers in the region? When we deliver food, can we streamline the route? We think like this about the whole ecosystem, even the entire state of Michigan.

In practice, how did you go about actually facilitating this project?

We invited 60 people to a workshop to give us their feedback on three touchpoints related to the service: pre-meal, during the meal, and post-meal.

The results were fascinating. For example, it turned out that when someone said, "I don't like the meal," it wasn't actually a food problem, it was a service problem: People didn't feel that they were being asked what they wanted. Instead, food was just put on the table in front of them. But we learned that if people are asked what they want to order and are provided with some options, they feel respected. It might be a subtle thing, but it was an "Aha!" moment — the service issue wasn't about the food as much as it was about dignity and respect.

Another example came from a food-delivery driver who attended the workshop. He told us that it's not his fault when the food he delivers is cold because the route he has to follow is not optimized based on distance between stops. The route might make some kind of sense — maybe it's based alphabetically by people's last names — but when you look at a map, the route isn't optimized at all. That's a systems problem.

You're teaching a class at the University of Michigan called **Design for Longevity Across Scale: Product, Service, and City**, in which — as the title indicates — you look at longevity across three different scales: product, service and city. How do you think about the complexities of these different scales and the ways they intersect?

From a design perspective, it can be helpful to think about this in terms of layers that go from the concrete to the more abstract. The first layer is the product — things like smartphones, canes or hearing aids. They are physical objects — you can feel them; they're tangible; you can drop them on your feet!

The second layer is about service. When you talk about using your phone, for example, what you're really saying is that you are using the services the phone can provide, such as YouTube, music streaming or payment services. Another example of the service layer is the airplane boarding process: Airlines board older adults first because maybe they have a wheelchair or need help with their luggage. This service level is intangible — you can't touch it, like a product — but we're living in such service systems all the time.

We call the third layer the city level, which is about the bigger, policy side. You have physical products; and you have intangible services; and then you have policies, which deal with questions like, "What are the new norms for our society when we're facing an aging population? Can we erase ageism? Can we embrace inclusivity?" This is harder because at the policy layer you have to think farther ahead, and the timeline is different. Product cycles can be predictable: Every year a new phone comes out. If a company wants to launch a new service, they may be able to deliver it in a few months. But when it comes to developing policies, it's much longer term and harder to predict.

You've brought together a lot of your thinking about design and longevity in your book, **D4L: Exploring Design for Longevity**. What do you hope people working in this space take away from it?

The book is a reflection on my PhD dissertation and my research at the MIT AgeLab. It's also a personal reflection on what I'm learning with my own parents as they're getting older, because a lot of the issues that I'm working on from a design perspective, they're experiencing in their lives.

For example, in Design for Longevity we care about people's mental health and community support. My parents bought a house specifically for aging in place — it has a bigger bathroom, better lighting, and is more spacious than their previous home. So they moved in, and suddenly they asked, "Oh no, where's my community? Where are my friends I can walk in the park with?"

I've learned so much from my academic training and from my family, and I wanted to document it in a book because I think we can create a better longevity-friendly society. I don't say "age-friendly society" because "age-friendly" immediately places a label on people. "Longevity-friendly" is multigenerational. I think this should be embedded in every aspect of our lives and social infrastructure, because when we embed it, we don't need to celebrate it purposefully. It just becomes our daily life. It feels normal; it feels comfortable.

As you look down the road, what excites you the most about the future of longevity?

I'm super excited about how we can apply AI in life planning — and by "AI" I don't mean artificial intelligence. I like to think of it as "**anticipating intelligence**." I like "anticipating" because it extends the understood meaning of AI beyond computation and technologies, to include the idea of predicting meaningful and possible futures that celebrate human values in an organic, analog world. I'm excited about this emerging technology because it can help us plan and prepare for a better future.

To learn more about how d-mix lab is using design research and systems thinking to build a more longevity-friendly, multigenerational society, visit the **d-mix lab website**, and download Lee's free book, **D4L: Exploring Design for Longevity**.