

Informal Discussion Transcript
Concurrent Session 4C: Innovative Business Solutions to
Respond to an Aging Society

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TIMOTHY HARRIS: Let's go ahead and get started. This is a session on innovative business solutions to respond to an aging population. I'm going to be one of the presenters, as well as a moderator, and I'm an actuary—have been a consulting actuary for many years and recently took partial retirement and set up a small firm. It's kind of a one-and-a-half-person firm, and I have over 40 years of experience, and in addition, I've been involved in the Living to 100 Symposia since their start, which was 2002, not including the preparation prior to that time. I've been involved in many Society of Actuaries and Academy of Actuaries committees. My consulting work has included assignments primarily for state and federal agencies, but also for HMOs, and insurance companies, employers, and so forth.

In addition, we have Dr. Lisa D'Ambrosio. Lisa is a teacher of social-science concepts and methods at MIT. She's currently working on research with Dr. Joseph Coughlin on the social aspects of aging. The research focuses on what an aging population will need to enhance and improve their quality of life and to live independently longer. This focuses not only on what products and services will be feasible over the coming decades, but rather on what will be socially and personally acceptable to this population, with its changing demands for transportation, redesign of physical spaces—including the home and workplace—and power in the consumer and employer markets.

In addition, we have Jodi Olshevski, who is executive director and gerontologist with the Hartford Center for Mature Market Excellence. Jodi is executive director there, leading a team of corporate gerontologists who conduct primary research and deliver expert services across the Hartford. The team has won numerous awards and is nationally recognized as a premium corporate gerontology organization in the U.S. She's an expert on a wide array of topics, such as business and aging, caregiving, elder care, housing, older-drivers issues, and vehicle technology adoption among mature drivers. Jodi has been interviewed widely by national and regional television and radio shows, including the *CBS Early Show*, *NBC Nightly News*, and by national publications such as *New York Times*, the *Chicago Tribune*, *USA Today*, *Los Angeles Times* and the *AARP Bulletin*, to name a few. She held an adjunct faculty position at Pennsylvania State University and is a visiting research fellow at MIT AgeLab. She is also coauthor of the book *Stress Reduction for*

Caregivers, published by Taylor & Francis. She has a bachelor's degree in sociology from Vanguard University and a master's degree in gerontology from the University of Southern California.

So those are the presenters, and I'm going to start this off by providing some background. And then Jodi and Lisa are going to provide the filler on the different innovative solutions to the problems we're facing.

So we've been hearing in the previous sessions about how people have been living longer except for some of the recent countrywide life expectancy numbers, but one of the issues that we're also hearing about is can you afford to live that long. Possibly, if you had a paternalistic employer that gave you a defined-retirement-benefit plan with post-retirement health. This is not that common anymore. I don't have it. I don't know if anybody else does. Otherwise, you're going to have some issues.

Affordability of retirement savings: I guess we know people don't save as much as they should for retirement. According to some of the financial planners, you need 10 times your desired after-tax income in a 401(k). However, the average 401(k) balance at retirement is less than \$200,000, according to Fidelity, which is, as we're going to see in the next slide, that's less than the out-of-pocket health care costs for a retired couple. Fidelity projects that that cost for a retiring couple at age 65 in 2016 is going to be \$260,000 to fund Medicare premiums and out-of-pocket expenses for health care, excluding nursing home costs, and it's typically what you see when people are planning for their retirement is they don't take into account any type of long-term care cost, which can be quite expensive.

Solutions: financial planning, saving for retirement. Consider your spouse and partner, and this is an issue that is also addressed often at the sessions at our symposia is that typically the male is going to be the larger breadwinner, the individual with the higher retirement income—either social security or private retirement income—and that higher earner needs to consider their spouse or partner into retirement.

Another solution is delayed retirement: just wait longer, save more money, get a higher social-security benefit before you do retire. This is often the case, and we've heard this. We heard

in the U.K., the average retirement age was 62; in the U.S. probably—I don't recall the number—probably close to the same. Oftentimes, people take early retirement for health reasons, which then reduces their social-security benefits.

Health expectancy. Faye is here. I keep bugging Faye about her health expectancy study. This is one of the things that we've heard a bit about today is, not necessarily extending life span, but improving our health expectancy. We've heard how Metformin could possibly illuminate some of these diseases of aging, and how studies might be funded by the FDA, and we've also seen how you can genetically modify mice to have a longer, functional life, which we can't yet do to humans. This is where, however, women lose their life expectancy advantage, because men and women seem to have about the same health expectancy, and that showed up in Faye's studies and also was quoted at a previous presentation.

Here are some of the numbers. I'm not going to go through it, but as you can see, the health expectancy for elderly with no health issues tends to be about the same for men and women.

Then there are the implications for social insurance systems. As more individuals live longer, and if we're going to increase the life expectancy through something like Matt Foreman, it's going to put continued stress on social security. Not so much Medicare in the U.S. or health systems in other countries, because they're talking about pushing out the diseases of aging to later ages, and in doing so, reducing the cost of health care, but increasing the cost of retirement income going to those individuals. So there's going to be continued stress on the systems, so primarily social security and health care. I have no idea how the U.S. is going to deal with the cost of health care, whether it's Medicare or other health care.

Here's a table that shows the social security as a percentage of GDP for different countries as of 2000 and 2050. You see the U.S. and the U.K. are not in bad shape, but Canadians are a little worse, and then when you get to Europe, there are some major issues, and I'm sure these issues are going to become even worse as these countries take on additional immigrants in these fairly generous social insurance systems.

We have occasions where the health care delivery systems—. Something that I did for one of the early symposia was to actually build a model of U.S. health care systems—Medicare,

Medicaid, private insurance—and then to look at the needs of the population as we continue to have an increasingly aged population. What we found was that in the U.S., there was actually sufficient hospital capacity due to a reduced length of stay and use of outpatient facilities. Supply of health care professionals—shortages across the board pretty much, especially in nursing and physicians as well, even more so on gerontologists. So the area of physical practice where we probably need the most assistance is in gerontology, and that's where we actually have one of the greatest shortages.

We also found that—I mentioned long-term care earlier—we found that there was actually a surplus of long-term care facilities projected into the future, in part because individuals don't really want to go into long-term care facilities. They'd prefer to stay at home and receive home health care or deal with whatever current technology allows them to function in their own homes without going to some type of long-term care facility.

Insurance companies have to be doing extremely well with the increased longevity of the populations, especially the reinsurance companies. Annuity companies are kind of on the reverse end of that. HMOs and other insurers of the senior population just are continuing to make their margins and are probably increasing their sales, as more and more people in the U.S. do need additional insurance on top of Medicare. Health-care-related corporations, a lot of expansion, I know. In a city where I spend part of my time, St. Louis, the largest hospital corporation is the largest employer in the city, and I think possibly the state, and they continue to expand. It's a huge, huge operation, and I guess we're going to see more and more of that as more and more people age, and more and more people have diseases of the aging, unless we find something like Matt Foreman to push those out to the point where people just get sick and then leave this earth at that time.

The effect of changing demographics on other corporations: we're not seeing really a lot of interest from corporations in some of these concepts. Delayed retirement, phased-in retirement—and I know this is a topic that's addressed; it's kind of a hoped-for item, to allow individuals to gradually leave the workplace. One of the things that happens in Japan is when an individual retires from one of the Japanese corporations, the corporation then helps that individual

find a second career, and so they continue to work, and as we know, that's a country where the population has some fairly high life expectancies.

Some of the other possible business activities include longevity bonds and indexes related to longevity or life expectancy. In the U.S., we've seen just a little bit of interest in this type of thing, and we've seen maybe a little more on some of the longevity guarantees coming from reinsurance companies, where it's actually going to immunize them to some extent, because on the insurance end of things, as populations live longer, they tend to make more money, so they can afford to take the risk and maybe guarantee longevity to mortgage funds and things of that sort.

Reverse mortgages: this is something that was kind of popular in the U.S. at one time, and then I think there was a lot of abuse of the product, but now we're starting to see—at least we're seeing more ads. I don't know if the abuse continues, but the abuse related to sales practices where an individual was sold the reverse-mortgage concept, and then the money was taken, and they purchased an annuity or something else, so the person selling it was picking up a couple of commissions, and the person entering into the reverse mortgage was not getting the best deal possible.

So that's kind of the background of some of the issues that we've heard and that we're dealing with in this country and other developed countries. At this point, I'd like to turn this over to Lisa.

DR. LISA D'AMBROSIO: Thanks. So thank you for coming. I'm Lisa D'Ambrosio. I'm a researcher at the MIT AgeLab, and in spite of the place where I work, I'm a political scientist by training, so getting up before and clicking on the cancel button for Tim, that's about the extent of my technical skills, and I'm not going to be able to tell you much about cancer drugs or ways to increase longevity other than the kind of research we do, which tends to be more on the behavioral and attitudinal side of the table.

So we're a little bit of, I think, a mishmash in this session of different approaches to thinking about and understanding the business implications of aging. What I want to talk to you a little bit about today is three both challenges and opportunities that we see, and we've seen them part of our work around aging for businesses, and those are gender, generations, and the growth of

technologies.

So gender is first up. And when you're talking to people who are actuaries, this is not going to be a big surprise, but I do want to point out [that] the woman here in the lower corner who's got the pink bow around her neck is 87. She's part of our Lifestyle Leaders group at the MIT AgeLab. They're people who are ages 85 and older who come into our lab in Cambridge. Every other month, they get together. We have a defined topic, they do some reading, they come in, we do some discussions with them. We basically run small focus groups; they fill out a questionnaire, and the topics are determined both with our research interests in mind, as well as some of the interests from the people in their group. And we actually did one recently on physical fitness, and it turns out that Maggie, who's down here, we discovered used to be known as Maggie and the Beautiful Machine. And back in the 1970s, she was on the local PBS station in Boston and had a physical-fitness exercise program. So as soon as we found this out, of course we were all immediately on Google to find out what she did, and you know, she had been promoting wellness and exercise back in the 1970s for people of all ages, and she's still quite active today.

An aging population is more female—again, not something that's any real surprise to you—but the implications of this are significant, and one of the pieces of research that we did several years ago with Jodi and her team was about women and retirement planning and preparedness. So women living longer essentially means that women have more years that they spend in retirement. They're likely to have earned less money than men while they were in the workforce. They've spent fewer years in the workforce. They were likely not paid the same amount as men, even if they were doing the same kind of job, so as a result, they have less in retirement savings, less in social security, and less in any pension benefits that they have. They're also more likely to have served as caregivers for older relatives, to have dropped out of the workforce to provide care, to cut back on hours to provide care, or [to have forgone] professional advancement in order to provide care. So essentially [relative to men], they've got to make less money last over a longer period of time.

Women are more likely also to spend more time as the sole financial decision maker, either because they outlive their spouse, or they never marry, and obviously, one of the demographic

trends that we're seeing is that women these days are less likely to be married, more likely to be single.

However, women are significant economic decision makers. According to *Forbes*, they drive 70 to 80 percent of all purchases, and they make up to 85 percent of all consumer purchases. So if you think about your own experiences and your households, who makes the decisions about what brand of laundry detergent to buy, what brand of bread to buy? In our house, what brand of peanut butter to buy is very firmly dictated by me. So these things—even if my husband is the one who is doing the grocery shopping, I've decided this is what we're buying, and don't come home with the wrong laundry detergent, because that's not going to make anybody happy—so even if he is making some of those purchases, I'm the force behind it, or I'm the one who has decided. And I can tell you, I have two sons and I have a husband; I don't know the last time any one of them stepped foot in a clothing store independently to purchase things for themselves, but I'm either ordering online, or they're with me when they're shopping. So women are a significant force in those economic decisions. If you think about how that plays out in your own life, in your own experiences, you may see that to be the case as well.

Women are also significant for making many of the health care decisions for their families—who's the provider, who's the insurance provider, who are the actual health care providers who are providing those services. Importantly, they purchase about 60 percent of new cars, and influence 85 percent of auto purchase decisions. These are decisions that have typically been thought to be the province stereotypically of men.

Gender is [the first challenge and opportunity around aging], and companies are doing better at paying attention to women as a significant economic force. But yet still, women are not—there're still opportunities there in terms of thinking about women both as those decision makers and those economic powerhouses, as well as some of the challenges that women face in living longer.

Generations is the next [topic]. I don't know how many of you watch TV, but I have to admit that I watch way too much of it. So this is the cast of *black-ish*, which I like, both because it's multicultural, but it's also multigenerational. They're talking about three generations of a

family living together in one space.

Again, when you're talking to actuaries, this is not surprising, but the boomers have been the generation of the moment. We've paid a lot of attention to them, and now the attention has shifted to millennials. So back in 2015, the millennial population overtook the size of the boomer population. Those of us who are in Gen X, good luck to us. We were the overlooked generation, so the millennials are kind of the new thing that's hot. You open up the *New York Times*, you look at whatever magazine of the moment, it's all about millennials. This is a different generation. They're more ethnically and racially diverse than any previous generation. They grew up as digital natives. This is a generation that grew up with a cellphone as a normal part of their lives, being able to carry a pocket computer around with them to access whatever they needed in a moment. Many of them graduated from college. [Many] graduated with debt, and many of them graduated into the recession of 2008, and we know that graduating into a recession can have significant negative effects for their long-term earning potential.

We have to think about how [these factors] affect, for many of them, their long-term planning and prospects. How has it affected their family structures if parents assume the debt? So what happens if parents who might be nearing retirement age or thinking about retirement on their near-term horizon are instead assuming their children's college debt? What happens in terms of their financial future for retirement? What happens to their kids if their parents can't afford to retire?

We did some discussion groups with multiple generations, and many of the millennials that we talked to said basically, "I don't ever envision retiring myself. I have debt from college I can't imagine that I'm ever going to be able to pay it off entirely; I'm going to be working forever." And others said, "My parents basically sacrificed everything for me to go to college, so I expect that I am going to be responsible for taking care of them as they grow older, and I'm going to need to save to pay for that." Or even older adults talking about siblings who haven't saved enough for retirement; they were anticipating that they would have to pay to provide care.

Again thinking about it multigenerationally, how are the costs of caregiving going to be distributed, how are the costs of debt going to be distributed and shared, is a really important

question as we start to think about generations.

There've also been some suggestions and some research that perhaps millennials are less inclined or less willing to move geographically—sort of a decline in fluidity. We're not seeing necessarily that all the jobs are in Topeka, so everybody wants to move to Topeka. People might seem to be a little more set in the communities that they're in, and so perhaps maybe less willing to move.

Again, think about whether this is living longer and living different[ly] for the millennials, or are they living longer and just taking it [more slowly]: Are they going to move through traditional developmental stages, like at some point getting married, maybe having a house, having kids, or are they simply going to do something very different? So millennials right now are more likely to be living at home with a parent than a partner, and more likely to be marrying and having children later. So is it just that we're seeing as our life spans increase that we're taking longer to hit a lot of those developmental milestones, or does what we're seeing here herald something very different in terms of how we as a society, as generations live?

Then, finally, if we think about growth of technologies, the MIT solution has always been if you've got a problem, we should innovate our way out. We should figure out some way that we can use technology to make everything work and make the world a better place. The reality is that technology will not solve all of our problems. So we've thought about how technology was going to be the solution to aging. We were going to use technology to figure out how people were going to be getting around. Well, thank gosh, we have automated vehicles, and they're actually coming—they're on the streets, they're coming to the streets—so there may be solutions on the horizon for transportation.

No technology comes cost free, right? There are certainly implications of all technologies, both socially and legally in terms of how they affect how we live our lives. We thought caregiving—. Technology innovation will make us all live longer, and as we heard this morning, we may yet develop ways to extend our healthy life spans and, as mentioned this morning, compress that period of morbidity or of ill health before death, but even so, some people may not be able to live independently at a certain point, and one question is, Is technology going to be able

to provide for that?

So when we think about technology, when we look at the pace of technological change, the kinds of advances that have happened, they haven't always been even. Technology hasn't progressed in this smooth, monotonic growth curve. We've seen fits and starts; we've seen later technologies subsume and take over, earlier ones change the path of development. And what we've seen, too, in the past couple of decades, is this incredibly rapid uptake of personal technologies. There have been differences, obviously, in the adoption of different technologies by generation as well. So we see, obviously—for older users, people 65 and older are—42 percent have smartphones. That number is eclipsed by the percentage of people in their 20s who have smartphones.

Not every technology that we develop is something that's adopted by users. Engineers are really, really good at designing things and designing things that work. It doesn't mean that we all want them, so people were, perhaps not surprisingly, not very excited to wear hunks of plastic around their neck, so that if they fell, they could press a button and get help. Because who wouldn't want to wear a giant hunk of plastic around your neck that proclaims to the world that you're ill and frail and in need of assistance, and you might fall at any moment, and it's not necessarily—it's not designed by Tiffany's. So these technologies have been really slow to be adopted by users.

Not every technology works as it's intended to or as expected to, and frankly, consumers don't always see some of these technologies as especially useful. So again, the Segway. This was "Ginger"; this was going to transform how we all got around. And it does, maybe, for people who are taking tours of cities, but we're not all hopping on Segways as our primary mode of transportation. They have not significantly cut down on greenhouse emissions or anything like that. Then again, the humble iPod many years ago just started out as a music player but has been something that has, in fact, had an impact far beyond what the original vision or hope might have been for that device.

So technologies are a little bit unpredictable. We don't know necessarily whether users are going to adopt them or not, how users will actually end up using them, and what they will use them for, and they're not cure-alls. They don't solve necessarily all of the human problems that we have.

Technology adoption is a process. When we think about this, this is a model from Davis. It's a technology acceptance model that we like to use and think about. Usefulness [of the technology] is incredibly important to users. When we think about which technologies get picked up and why, how useful do people think it is, people are much more likely—older users and younger users—they're much more likely to invest in learning how to use a technology if they can see that it's got some usefulness for them. Even if it looks complicated, if it feels like there's going to be a benefit, the payoff is clear, it's evident I can see how this is going to help me, that is incredibly important for getting people to overcome the barrier of learning to use the technology, wanting to think about adopting the technology. So that's one piece of it. How easy they think it will be to use is another piece of it. So the usefulness and the ease of use [of a technology] are incredibly important, and that drives their attitude toward use, the intentions to use, and ultimately their actual use.

This is one piece of it—the usefulness and how easy people think it is to use. One of my colleagues said that's not really enough; we know that there's more than just how hard or easy I think it will be to use and whether I think it will help me. It's actually a multidimensional concept when we think about [technology] adoption. We've got to think about [these dimensions]. I want to start under technological first. So we've got to think about what's the usability. Again, that's part of that ease of use.

Reliable: Does it work every time? If I open up the screen to my laptop, does the computer go on every time? If I press that button on the bottom of the iPad, does it always turn on?

Value: Am I getting value for what I'm investing in it for the time and the resources that I put into it? Is it giving me what I expect it to be?

Delivery related: This is about what companies do, what they provide. Is there technical support? If I can't figure out how to do something, is there going to be somebody there on the other end who can help me out? Can I access it? Is it in channels where I can go to buy it, where I know where to get it, and is it affordable?

Cost is always a big piece of this, right? If you can't afford to buy it, then it doesn't really matter how fabulous the technology is. You're not going to be able to access it, you're not going

to be able to use it, you won't be able to benefit from it.

The social context in which we use these technologies is also important. Is there social support for using it? Do other people use it? Independence: Is the technology stigmatizing? Is it a giant box on my kitchen countertop or in my bathroom that indicates that I'm ill, that I'm sick, that I'm taking multiple medications? Or is it a subtle vibration of my cellphone that reminds me to take my meds? Does the technology support my independence, or does it instead send a signal and stigmatize me as somebody who's in need of assistance?

What's my emotional connection to the technology? Is it pleasing? Does it make me happy? Again, for the individual factors, does it help me be more confident in how I live my life? Is the technology supporting me? Is it compatible with what I already have in my home and in my lifestyle? Does it fit into how I live? And what's my experience with technology? My experience in using other kinds of technology—does that translate over as well?

So we find [for] that process of thinking about the technology, that usefulness and the ease of use are a piece of it, but these other factors all play into the question of whether people are more or less willing to adopt technologies. Some of these are individual factors. Some of them have to do with the individual him- or herself, his or her experiences, the kind of social context in which they're in, but some of them have to do with companies: How do you design technologies? How do you design—when you're designing them, are you taking these individual and social contextual factors into account? Engineers might be very good at designing for reliability, and there might be human factors teams that design for usability. Are they working together?

Then thinking about the delivery-related channels, are we thinking about accessibility, affordability, and the nature of support, and the ease of accessing support for users? So companies have a big impact on the right side of that diagram. We might think about individuals coming to the technology adoption question on the left side [of the diagram], but as designers of technology and services, I would go beyond technology and think about—especially as we think about technology-enabled services—we want to think about all of these factors. And one of the themes of work for my colleague Dr. Chaiwoo Lee has really been about how can companies start to think about designing products and services with the whole user in mind and all of these factors as a

piece of it.

As I mentioned, technology's not a panacea. One of the things that we've seen about technology and the development of a lot of these wireless technologies is [a set of] issues around privacy and data security. So we did a panel last year where we talked with people about the smart home and technologies in the home, and we have a couple of quotes that we pulled from the discussion panel of their concerns about privacy: "I'm very concerned about something like the Echo that's listening to all your conversations. I don't like the idea of Amazon knowing even more about us." Amazon knows what you buy; they know what you look at. They put up, oh, "You might like this product, this product, that product," and Echo is listening to your conversations. There was also a doll recently—I guess, Cayla; that was out over Christmas—where she would record the children's conversations, and unless you opted out, they would send the conversations to Nuance, which was the language recognition software company, just for the purposes of improving language recognition, but by the same token, the company had access to all of these children's conversations with this doll.

So again, thinking about what's happening with these data—"I'll always be wondering if someone's watching you or listening to our conversation, like baby monitors"—and then thinking about when we think about caregiving, and that's what we've thought about a lot of these kinds of home technologies. Some of these monitoring systems our parents might not want in their house, because they'll feel like they're being spied on. On the plus side, as a caregiver, you might want more control, more confidence that you know what's going on. But by the same token, the humans who were living in that house might not want to feel like every step that they take is being monitored.

We also talked to [people about smart homes as] part of this conversation as well. One woman said, "I lived in a smart home in Florida for a while. You walk in, and everything's voice activated. After a while, it was a little annoying, because sometimes you want to be alone, and you don't want to have the fellow in the background talking to you." Then some person said smart homes would be a "great way to tell me where I don't want to live. I'm not the kind of person who wants to be monetized and consumerized and otherwise invaded every ounce of their privacy—

those of us who want to still try to imagine life is not a set of routines every day.” In terms of caregiving, it comes down [for him] to the question of dignity, and he was talking about his mother, who had Alzheimer’s disease: “If I were in her place, I’d be taking a hammer and banging the crap out of those things, and I think that’s a really hard line to find, the line between health and some semblance of preserving human dignity.” So as we think about technologies again, just because we can develop them, just because we can do it, we also really need to balance the human needs against human desires and the importance of dignity, independence for people against what the technology can do.

I mentioned technology-enabled service innovations. We’re seeing obviously a lot of growth around these kinds of services. One of the things has—people thought that these might be ways to help older adults maintain their mobility and independence longer. Again, we talked to our Lifestyle Leaders group about these, and they had some concerns about the quality and reliability of these services—issues around the physical and the financial threats that services may pose, concerns about giving your financial information to an unknown provider. And then older adults may be relying on some of these tasks to structure their days and maintain their physical fitness and activities. One woman talked about laundry folding is something I get to do: “I have to get up, I’ve got to go to the machine, I’ve got to move things in and out, then I have to fold it, and that’s physical activity to me.” I would be delighted to outsource my laundry, but she was not so interested in it, because it helps provide structure to her days, and again the same things for grocery shopping and having other kinds of products delivered to the home. Part of it was “As long as I can do something, I will do something.”

One of my colleagues did a thought paper where she looked at certain markets, [and] she [created] a basket of sharing-economy services, so building on things like TaskRabbit, Uber, Blue Apron, Honor—which is the service that provides in-home caregiving—and Peapod, basically looking at if you use these services, what would it cost you in a month to get, basically to provide all of these kinds of, all of your meals, housecleaning, so forth and so on. They were less expensive than assisted living in the Boston market, especially as people grew more frail.

Again, there are issues around access to these services. They’re not available everywhere,

and even if they are, people may not be aware of them. There's cost involved. These services are not free, and they rely on having a smartphone to access them. Again, there are still some issues of reliability. [For example,] I used this slide last fall to give a talk, and I had Washio up here, and somebody said at the end of it, "It looks like that company's gone out of business." So some of these companies we expect will be around, have been around. Uber seems like they're going to be around for a while, but again, until some of these companies are more established or they have other companies behind them, people may be reluctant to engage with them.

Just to go back to these three *Gs* of gender, generations, and growth of technologies, they [represent] both challenges and opportunities for businesses to innovate. So around gender, again, more women living longer; they need to make less money last a longer life span. [There are] changes in women's roles as, again, the driver of consumer and household purchases, women's roles in the workplace. So there are opportunities around gender. Women are still an underserved market, if you will, especially when we think about retirement planning and preparedness—financial planning for a longer life span.

Think about generations—the size of the millennial generation, this group aging into the market. At the same time, we have boomers, who as Tim noted may not be financially—may not have the financial resources to retire, and frankly, many of them may not want to retire. They still want to be working, they still want to be active, and some of them can't afford to retire. So we've got more generations sharing common spaces, so workplaces, homes, public spaces. What does this mean in terms of how we're designing them?

When we think about workplace policies to fit the needs and demands of multiple generations, how do we then work with older employees who may need some retraining, or younger employees managing older employees, or older employees managing generations who maybe are the same age as their grandchildren? So how do we manage and think about some of those kinds of challenges in the workplace? How do we think, too, about the growth in the millennial generation and their growing cost of education generally? Frankly, the changes in how we may be thinking about college and higher education—how do those things affect intergenerational wealth transfer and accumulation? How do those costs get distributed within

families?

Then finally, around the growth of technologies, we have to think always about what are the problems that we want technologies to solve, and what are the kinds of problems that they in turn create. When we think about technology adoption, the different technology adoption factors are a map to use for designing products and services for an aging and for a changing population. So again, thinking about how can businesses and service providers use those technology adoption factors to think about how they design things. Then, of course, issues around human dignity, privacy, data security, cost, and equity. As more personal technologies become available and more home technologies become available, this Internet of things, as we integrate it into our lives, there are costs involved. Is technology simply going to, again, reinforce a digital and economic divide, or is it something we can use to work across that divide?

So I think [there are] a bunch of questions here, but also opportunities for companies to think about. So thank you very much for your time and attention this afternoon. [*Applause*]

JODI OLSHEVSKI: Good afternoon. I am Jodi Olshevski and very happy to be here. I want to thank Lisa and Tim. I think they have cued up a lot of the bigger-picture issues and questions, and I'm going to be talking through a very practical description of how, at the Hartford, we really applied a lot of the kind of issues that you've heard talked about to an actual customer base that's primarily within our business unit over the age of 50. So I'm going to talk through a little bit about what our center does, some of how we apply our knowledge of the aging population to create innovative business solutions for our customers per se.

I'll start by telling you just a little bit about the center. We started looking at this issue in 1984, so I like to say that before it was cool to look at the older population, before boomers turned 50, we actually, The Hartford hired their first gerontologist, and social gerontologist—we're not physicians—to really apply our knowledge of the aging to business issues to create strategies. And part of why we did that is that we sit within the personal lines business, so the P&C side of The Hartford, and in 1984 we had the start of our relationship with AARP, and so we sell auto and homeowners insurance to AARP members. It's a big part—I would say 70 to 80 percent—of our personal lines business, and so that necessitated the focus on aging—again, way before a lot of

companies were thinking about looking at this segment.

So we've been doing it for a number of years. Clearly the population has changed significantly over the years, and we have tried to evolve as we've come up with ways to engage with these customers.

Really, our focus is in five different areas, and I'm going to talk through each of these. We really try to influence the customer experience. So if you think about all of our customers are over the age of 50 that our representatives are interacting with, what does that mean? What does it mean in terms of how we engage with those customers? A lot of our time we spend on research. We were a founding sponsor of MIT AgeLab, and so we've been conducting research with you all, I want to say, for about eighteen years now, coming up on, so we've got a lot of history on how do you actually learn things with an academic partner in the private sector together and then translate that in a way that actually makes sense to customers and also benefits the business in the long run. We spend a lot of our time, too, trying to enhance our product, creating benefits, features, things that we think are unique for this segment, and that's the real practical application of the research that we conduct. And then content is king these days, right, so we've been creating content for a number of years, I think particularly within the last few. That content is pushed out in different ways. We used to do it all in print guidebooks. Now a lot of it is pushed out through social media. So I'll talk through a little more detail on each of those issues.

So on the customer experience front, I think one of the things that we realized early on is that we needed to really equip our representatives in the sale centers, and in our service centers, and in our claim interactions to understand how to interact with people over the age of 50. And I like to say that if we all didn't have an element of ageism in us, right, we wouldn't need to do these programs, because sensibly you would think, "Well, you serve people over the age of 50 like you would everybody else," but I think we know that it doesn't play out quite that easily, particularly if you have a staff person who doesn't have much experience with this older segment. Or the other issue that we found is that oftentimes—and I think we all do this—we rely on our own personal experience, so "My grandmother was XYZ, and so this person I'm talking to or interacting with reminds me of my grandmother, and I'm going to treat them that way." And you can create some

pretty negative business experiences if you do that, because that person, they might be the same age, but we know with the diversity of this marketplace, they could be completely different on so many fronts. So I would say a big part of what we spend our time doing in our education programs is helping our staff really understand the importance of recognizing the bias that they might have, coming to those interactions with the 50-plus population, being able to identify those, and then also moving beyond that and ultimately providing individualized service in whatever capacity they're interacting with that customer. So that takes the form of we've identified key competencies that we say are critical for interacting with customers over the age of 50, and those competencies are built into all the programs that we do with our staff. As soon as a new hire joins The Hartford, they get to spend time with us, and so we make sure that we touch every person that comes in. And we do that through online training [and] some facilitated conversations with them to make sure that they have the kind of approach and mind-set to this customer base that we think is helpful in making us successful as a business.

Then we're always helping them build their skills. We're fortunate to have some employees who have been working with our AARP customers since 1984, and so they require ongoing skill building, as well as the awareness that this population is changing. Just like Lisa talked about the different generations, I mean clearly, right, boomers now who are, I guess, turning 71, I think, this year are very different from a 71-year-old 20, 30 years ago, when we first started serving this market. So that's a big part of what we do.

We also try to make sure that we're integrated into any and all business initiatives that are going on—and if any of you are at a big corporation, you know that that's plentiful in most environments. And so we have a new company-wide process improvement program that we're rolling out, and so we make sure that we're built into that, that we're not outside of that. So our gerontologists are in there, in the room, around the table, making sure that as they're building processes, the element of serving this older customer is built right into that—kind of hardwiring it in.

Same thing with sales and service initiatives, and as Lisa described, all the technological issues that are out there: we, like a lot of businesses, are becoming more technologically accessible,

I guess is the best way to say it, doing business through multiple means. And we have the challenge of not only getting our employees to realize that, but also convincing our customers that they should be interacting with us digitally, and of course that varies. If you think about the adoption model, right, it's going to vary per person, but we spend a lot of time helping folks in our digital team think about how to design the technology interactions, interfaces so that it takes into account the unique needs of this population.

That's a quick kind of overview of how we try to influence the customer experience in terms of our older customers.

We also create customer engagement programs. I think I've seen what we call life events; I think I've seen it in a couple of presentations as "shocks," is that right? It's a certain language that's been used here. Same idea: What are the things that you don't anticipate that kind of come into your life and make things kind of—throw things out of whack or change what might be the norm? And we found 20, 30 years ago that one of those big issues, of course, as I'm sure you know, is losing a spouse for people who have been in a married couple situation for a lot of years. So we started with that life event, because we learned that our representatives really didn't know how to respond to those phone calls.

If you've ever lost someone close to you, you know what it's like when you're going down the list and making all the phone calls, right, to report the death of that person. It can be a very challenging and taxing process. And we found that our representatives either just ignored it—right, didn't say anything—because they themselves were uncomfortable with that conversation, and then on the other end of things, we had our representatives who had just had a loss and ended up talking for 20 minutes with the customer about their loss, which really wasn't beneficial to the customer, and certainly not from a business metrics perspective.

So what we've done over the years is created sort of a specialized approach that all of our staff are trained in from day one that involves an acknowledgment of that loss, and then we kind of give them the skills to transition to the business at hand, and we also then make available to them resources. So we have, you can see up here, a booklet called "Living With Loss" that used to be an AARP booklet that we sort of—they kind of gave over to us. And we will make that

available to every person who calls and reports the loss of a spouse, and it's really chock full of great, really helpful information—not really about your insurance, but about how do you adjust to all of this. Not surprisingly, we found that this is huge. You talk about “It’s great for the customer, it’s what we should be doing, it’s kind of the human response to these changes,” but then on the business side, the beauty of it is usually what works for the customer also helps the business. And so, as you can imagine, our older customers who experience this response stay with us, because when you have that kind of a positive interaction at a critical, difficult time in your life, you remember it, and so it’s been a great retention tool for us.

It’s pretty simple to do, and then we’ve expanded that program, those life events programs, to events. We could probably have 30 events. We’ve chosen three other events that we know customers get in touch with us on. If they’re adding a teen driver—I recently did that a few years ago—that can be a shock on a lot of different levels, so we try to help our customers through that. Getting married, whether for the first time or you’re getting remarried; we know that that happens a lot in this older segment, and so we have information for them. And then divorce—which, of course, can be one of those difficult life events, very complicated from an insurance perspective. Those conversations are hard and complicated, and so we put our life events response and then information—we make that available to customers.

This is just an example of one of the customer engagement programs. I think if you marry together what we know about aging—and certainly, we have life events throughout our life, but we know that that can increase as you grow older, and the significance of those life events certainly can also increase—and so this is an example of how we match that together with something that’s beneficial from a business perspective.

Research: We have a wonderful partnership with Lisa and the team at MIT AgeLab. I think when we joined together at the start of the AgeLab, there was a really deliberate effort made that not only did we want to do research that is academically sound, that’s credible, that could be published in journal articles, which we’ve done through the years, but we also wanted to be able to translate it out into a way that made a difference for people in their daily lives, and particularly for our customers and also for the public. What can we do to translate those results into helpful

information and guides for individuals?

We started, I think, with one of the most difficult issues—and that is Alzheimer's disease and driving—a number of years ago and put together a guide that I think still is in the hands of millions of families every year [who] access this information to help them through that transition. So driving safety is a big area of focus of our research. Of course, that matches to being an auto insurer, and so it makes complete sense, pretty logical. We moved from Alzheimer's and dementia through just general driving decisions for people who don't have dementia but maybe aren't safe on the road: What should we be thinking about? How do we help families navigate through that difficult transition?

We did some research around driving evaluations that are completed by occupational therapists as a great resource for not only helping to reduce risk from a driving safety perspective, from an auto insurance perspective, but also we know our key to help for public safety, and for also families as well. So we did the research, we translated it into helpful guides for families, and we've been pushing that out now for a number of years.

Most recently, we've had a real focus since 2012 on vehicle technologies. If you've bought or leased a vehicle lately, you probably have some of the greatest technologies in there, and we knew that that was happening. And the beauty of working with MIT is we were looking at this back in 2010 and knew that it would be happening more, and so we kind of got in it early in terms of this research we were interested in, and so that's great. What do we know? How do we apply what we know about aging and driving to the fact that now these vehicles have all these technologies? Are there some technologies that could be helpful for people, given the normal aging-related changes, normal aging processes? Are there some that maybe could be more of a distraction? So we've done a lot of research in that space.

One of the outcomes from this research is brand and public relations. You can see here just two examples of more recent coverage we've got. There continues to be more and more interest in the autonomous vehicle and self-driving vehicle. So the fact that we've been working on this issue within this older segment means that there's been a lot of interest from a media perspective in a lot of the research that we've done.

Then we've also done a lot of research on home safety. So we started with disaster preparedness. This was post-Katrina, of course, because that was top of mind for everybody, and then we've done everything from housing decisions to housing design. Some of you might be familiar with the universal design concepts, and we've done work around that and remodeling, because we know that people in their 50s and some in their 60s, and really any age, are interested in staying in their homes, and they might be more likely to remodel rather than move. So the idea being, when you're remodeling, why not build in universal design features, and then that way your home won't become a barrier for you, should you have any health issues or functional difficulties that come up down the line?

We just released—actually, I guess, a month or so ago—a new study on smart-home technologies. So we're really looking into what are the smart-home technologies that we think could be useful for people over the age of 50, and I anticipate we'll be doing some research in this space for some years to come.

We also have a smaller partnership with University of Southern California, and that has been particularly around some of the universal-design work we've done with our claim customers. And I'll talk about that a little bit when I get to the product piece of things.

So that's research and thought leadership. It sort of is in addition to the—. We have the internal focus with customer experience and customer engagement, and this is more externally focused.

So product enhancements and features: We try really hard to apply what we know in a way that makes a difference for our customers. So one of the features that we added a number of years ago that's pretty unique, and I don't think any other auto insurance has it that we know of, is something called RecoverCare, and we didn't actually need research to come up with this idea, because we just knew, of course, as gerontologists, that as you grow older, if you're in a car accident, your ability to recover from that accident is going to take longer. And we also know that health insurance has limitations. It doesn't pay for custodial help. So if you need help after an accident—you're laid up, you need someone to clean your house, you need someone to walk the dog or to take you to that doctor's appointment—that's not covered. So if you have our auto

insurance coverage, you will get RecoverCare, which basically gives you access to a pool of \$2,500. If you are in an accident, and you're injured, and you need help recovering, you can tap into that money to pay for any and all of those things that you need. So that's a unique feature that we think is beneficial. Actually, our marketers found, no surprise, that people of every age like that feature. So we do have a small amount of our book of business that's younger, and everybody likes that idea, and I think that's true. When you talk about innovative business solutions for this market, usually what you come up with is going to really work across the generations. It's sort of designed for all in the truest sense.

Then out of the research we did with Lisa and her team around these comprehensive driving evaluations, we learned that there's a real supply-and-demand issue out there, because occupational therapists provide this evaluation, but guess what, it's not covered by health insurance. So not a lot of people know about the evaluation, at least in the vein that we think it would be beneficial—which is just, if you're older, and you aren't sure about your driving, and you just had a medical issue, and you want to see if you're safe on the road, right—that doesn't often come up. If it does, you have to pay out of pocket, and it's several hundred dollars to do that. We build that into our auto insurance program, too. So if you are in a car accident and you're a little bit unsure about your driving skills, you have access to a comprehensive driving evaluation. We will pay for it. We do not see the results. We made sure that we built in there that kind of firewall from a privacy perspective, and this is another example where obviously it helps us from a risk perspective, but it's also kind of an added value. It's public safety, and it's also quality of life for older drivers, and also for their families.

Then our most recent product, and this is a feature. It's an endorsement that you can purchase if you have our homeowners insurance, is something that's called replacement-plus coverage. And it's built on a lot of the research we did with MIT, and then more recently, we did some research with USC on this issue, and it's basically that you can buy this coverage so that if you have a loss in your kitchen or your bathroom and you're rebuilding it, you will have access to a pool of money to actually build in universal design when you're making those changes. So, for example, if you had a kitchen fire, and you know you're actually quite active, and you're fine,

you're 57, you're healthy, you don't really have any difficulty getting around, but you know you're going to be living in that home for a while, when you're rebuilding that kitchen, you can use that money to widen the doorway. You can use it to buy a side-by-side fridge, right, which is considered more universally designed. You can use it to move your microwave above the stove—which I don't think works for people of any age, actually—and put it under the counter. So that's an example. There are different coverage amounts that you can add in. That's another example of how we try to create unique offerings for our customer base that will help them prepare for their future. This is a first-to-market, patent-pending coverage. It's just fairly new on the market. We're not really sure how it's going to do, we'll find out, but I think you do—when you're trying to serve this market, you have to take a little bit of—you have to be a little innovative and be a little bit willing to work outside of what's the norm.

So when we worked with our product team to create this—right, and thank goodness they're pretty flexible—we really didn't know. We kind of made up, really, what the coverages should be and how much, and all of that, because no one has ever done it before. So we'll learn as we go, and I think the best possible scenario would be that actually it's copied, because I think that this coverage is something that should be available. It's the kind of innovative thinking that we need more of to figure out with this aging population how do we build into our products into the marketplace offerings that we know can help people prepare for their future, and educate them in the process. Like, you might not even think about doing that, but we can be an educator as insurer as well in helping people think about their future and plan for their aging years.

Then just to kind of wrap everything up, this is just another example of how we translate our research results to educational content. You can see at the top, these are just covers of our guidebooks, which you can download on our website. We send out millions of these every year in hard copy as well. We have an e-magazine, social media that we push out through Facebook and social-media channels, and you can see here: It's probably too small for you to read, but it's an example of what we just send around with smart-home technologies. You don't have to be a customer to get this.

Then in the website, you can see we created a digital interactive home that actually is

universally designed. And it also demonstrates the smart-home technologies that we found are the top 10 for people over the age of 50, [for] homeowners to think about.

So that kind of wraps up, I think, an overview of how at The Hartford we try to apply what we know about this aging population and translate it into practical ways of doing business. I think I'll turn it back to you, Tim, for questions.

TIMOTHY HARRIS: Okay, thank you. We wanted to make this session a little more interactive, and also since we're focused primarily on U.S. topics, what I'd like to do is rather than just see who has questions, I'd like to see if anybody else has anything that they're doing with their company or in their country. And you don't have to get up and walk to the mike; raise your hand, and I'll bring the mike to you. So anybody want to ask a question or add something? Really? Hear from Canada then.

ROB BROWN: Two things I've been working on. One is what I call enhanced annuities, which are very common in the U.K. but don't seem to exist in North America. My motivation is that, at the moment, about half the population can't get a market value annuity. If you're less educated, if you're poor, if you're blue collar, if you're obese, if you smoke, the price for the life annuity is not going to attract you, and I wouldn't even advise you to buy it. The price is not actuarially fair.

The second one I'm working on, which is more recent, is to come up with an actuarial approach to tie the eligibility age of social security to life expectancy, but not one to one. The criteria in the model say that society will spend a consistent percentage of their adult life in retirement, and so, as life expectancy goes up, the age of eligibility rises to hold that ratio constant. So there's two little things.

TIMOTHY HARRIS: Thank you. Anybody else?

JEAN-MARC FIX: We hear a lot about self-driving cars. I saw a couple of slides in there. I didn't hear any comments from you. What do you guys think is the impact of technology on aging, at least in the U.S., which is still a very car-driven society?

LISA D'AMBROSIO: So we've been thinking a little bit about it, and first of all, there are still questions about the technology coming to the larger marketplace. Obviously, there are demonstration projects in place, and vehicles on the road, but it's not all the way there yet, and one

of the things that we've been thinking about is what that transition from the world now to a world with all autonomous vehicles looks like. And the consensus in our group seems to be that it looks like it's going to be kind of messy, and what's really tough is when you have a number of vehicles that are human operated and a number of vehicles that are autonomously operated: How are they going to be interacting with each other?

I think ultimately the dream or the expectation is that having autonomous vehicles is going to make living and aging in place easier, that people will be able to access these vehicles in order to be able to get around, to do grocery shopping, to socialize, to get to medical appointments on demand, as opposed to having to call two days in advance for the bus to pick them up or meet some other unrealistic time schedule. The hope and the expectation is that that will happen, but I think that transition period is going to be a challenge. And although the Department of Transportation has basically opened up the books to sort of say, "Hey, we're ready to have companies come in and talk about what kinds of policies and regulations should be governing these vehicles," there're still lots of questions from a policy perspective and, I think, insurance perspectives about liability. There are going to be errors; there are going to be crashes. Who's going to be responsible for those?

So I think there are a whole host of policy questions that haven't been asked, and then I think further to tack on to that is what does the ownership model look like. So are we all going to be owning autonomous vehicles? Are we all just going to be replacing the vehicles in our garage, or are they going to be more like things that you call up on demand? So I think that there're certainly companies out there—I think companies like Uber are looking ahead, and I know places at MIT like in the Media Lab have been looking ahead and thinking about vehicles that are shared vehicles that you use within a certain period of time: It takes you someplace, and then while you're off shopping, it goes and it drives itself, and it runs another errand, or it drops off packages, or it picks up somebody else for another trip that they have to do before it comes and gets you.

But I think we don't have all of those kinds of questions worked out yet. So ultimately, the goal and the expectation is that it will make aging in place easier, but I think that there are a lot of questions that we don't know the answers to yet.

JODI OLSHEVSKI: I just want to throw in my two cents here. I'll just add that I think, to me, the question that needs to be figured out, too, is this reality which is we know that most older people, when they transition from driver to passenger, it's usually because of a health or a functional issue. And so this idea of an autonomous vehicle solving that—I don't think it's quite going to be that panacea, because that person, if they have functional difficulties, is still not going to be able to just walk out of the house and get into this autonomous vehicle. So I think, to me, the question is, So who will benefit most, and who is the group of people? Is it older drivers who are starting to self-regulate, who are starting to feel unsafe driving at night, so they want to have a vehicle that they can drive on their own around town, but then at night, they want to have the vehicle drive them around? That might be, versus someone who is on the opposite end, who has given up driving completely and has functional difficulties. So I think the who in the population still also has to be figured out.

JEAN-MARC FIX: And a follow-up question on that: In your focus group, has psychological acceptance of the concept gathered any traction, in what is really not a technology-oriented group?

LISA D'AMBROSIO: Actually, work that we did with Jodi's team, we did—as part of the vehicle technology work that we did. We were asking about autonomous vehicles, and we found men were on average more interested than women in the vehicles. We actually just did a national survey looking at questions around technology acceptance. We did find, again, there's a little bit of a gender divide. Men were more interested than women. Technology experience was an incredibly strong predictor of interest and a sort of acceptance or willingness to use autonomous vehicles. So people who felt more comfortable with technology, felt more comfortable playing around if they don't know how to do something, even controlling for age—that was an incredibly strong predictor of interest in the vehicles.

There's not universal acceptance by any stretch of the imagination, and we also asked people, "Who would you be willing to use [self-driving cars] for?" We weren't looking necessarily at the older ages, but you know, "Would you let a five-year-old ride in an autonomous vehicle unattended? If you programmed it in, it's going to take the child to school; would you let the child go by him- or herself?" No. Twelve- to 17-year-olds, okay, that's all right, but under 12, people

weren't really comfortable. So I think there're still a lot of questions around.

I think in part there are a lot of questions because people don't necessarily know exactly what that vehicle's going to look like when it's out there. We have ideas about what this stylized, perfect, autonomous vehicle will be like, and we have, on the other hand, we've got things like Tesla on the road right now. But we don't know what that path is going to look like as it moves out into the mainstream, and without people having direct experience with the technology—. Again, some other research coming out of our lab by some of my colleagues who do more work on the human factor side is that having some of that direct experience with this technology will be incredibly important for people's willingness to accept it and use it.

FAYE ALBERT: Hi. I want to ask you about the aging. What we always hear is that people want to—age in place. They want to stay in their own homes, and these people are unable to deal with it. I mean, even if you have a refrigerator side by side or a wide door so you can use the wheelchair in your house, those are a little bit more convenient for people that are pretty functional, but [for] most people, that in-between stage I don't think lasts very long. And I'm of the opinion that people need to recognize, or that it would be beneficial for people to recognize, that maybe they really can't get along by themselves, but we are encouraging them to age in place, making it more possible. It's not really doing them a favor, because the older they get, the harder it is to change.

JODI OLSHEVKSI: I'll take this easy question. I think it's a million-dollar question. It's a puzzle; it's very complex. I know actually, more recently, there have been a lot of articles out there about that very question. So maybe a better way to say it is "age—and maybe this doesn't address it—in your place of choice." I think that there are needs for alternative living arrangements for people who may be—the built environment does become an obstacle. I mean, the ideal would be that the built environment accommodates that regardless, and so you don't have to reach that crisis point. I think we know, with the housing stock today, that that's not going to happen, right, and so you're right; in some instances, I think that's the case. I would hope that, just like there's the compression of morbidity, that we try, along with that, that the amount of time that you might need to be in a facility is less. So I don't think there's any easy answer to that, but I mean, I think we know all the potential outcomes of people being at home versus in a facility. So it's always a toss-

up, and certainly when you're dealing with it at a practical, personal level, it's complicated, very complicated.

FAYE ALBERT: Well, I guess that the thing that I was kind of saying is that it seems like we are encouraging people to try and stay in their houses and do everything that we can to accommodate them doing that, when maybe that really isn't such a kind thing to be doing, any more than allowing a child to stay home from school. I mean, maybe they need to get into a social environment and adapt to living that way.

JODI OLSHEVSKI: Sure.

FAYE ALBERT: And I think that we can be encouraging that.

JODI OLSHEVSKI: Yeah, I mean, I think there are some instances where you can't stay in your home. I think that that's certainly true. I think what I was talking about in terms of our effort is encouraging people to think about the built environment before they need to make the change, before they have the crisis, so that hopefully, the home doesn't become the barrier, but that's not the only—.

So there's the home, and then I think where you're going is you actually need a person in there to provide the care, right, which is kind of down that—that's that transition from, if your home is organized in a certain fashion. I mean, I take my parents for example. They have the split, raised ranch house. They will probably have a hard time living in that environment maybe even before they need someone to come in and actually provide them with care. And so in that instance, if that built environment were different, they would be able to stay there for a little bit longer in a way that wouldn't be necessarily placing them at risk. So I think it's a matter of degrees, and it really has to be a personal choice, if that makes any sense. I don't know if that helps.

FAYE ALBERT: I do think it needs to be personal choice. I don't disagree with that at all. I mean, I think you're absolutely right. I'm just saying that it seems like the approaches that we're using to discuss it are not encouraging anybody to think about it. Everybody's thinking about how they can manage to stay where they are, even with care, when maybe that isn't the best solution for them. Maybe a more sociable environment could be healthier.

JODI OLSHEVSKI: Yeah. Then you get into the subjective objective, right. I mean, it's a

touchy—. It's not an easy environment. I don't disagree with you. I think we need more—and there's some, as you probably know—alternatives besides the more traditional institutional home. I think, until we change those options, most all of us will be reluctant to want to move out of our home environment and [will] wait probably till it is too late, where it does become a crisis. Yeah, I don't know if you have anything to add to that.

LISA D'AMBROSIO: I would just [add,] in our Lifestyle Leaders group, we have some people who are over 90, and I think, not everybody, but most of the people in our group are living independently in the community, some with almost full-time care. We have a small group who lives within an assisted-living facility. There's one person in particular I'm thinking of who is very frail, has basically full-time care providers, and we had a discussion about it. One of our sessions was around moving, and moving from independent to more assisted-living environments, and he basically said, "This is the place where my wonderful wife and I lived together; I can't possibly move out." You know, "Should I move out?" Probably, but this "I can't," "I won't." We also recently had one of our people move from independent to a more assisted community, and she's really struggling. I think it is that individual piece, and this second person may adjust well to the environment over a little bit more time, but I think it's really hard.

We also have some people—actually, we're in Cambridge, so we've got some cohousing models. We have people who have lived in cohousing where people of all generations live. They're really struggling to find younger people to come into their community right now. I think Jodi's right; there are different kinds of models out there, but we don't see a lot of gravitation toward some of them, and I think for a lot of people, for a variety of reasons, they're not willing to move into some of these more supportive living environments. In part, cost is a barrier for some people. In other cases, some of them have had the experience, or they've visited friends that have had the experience, that they don't get the kinds of social benefits that they thought they would get. They thought they'd move into this community, and they would make all these friends, and it would be great. And it turns out that they move into the community, and they're still sitting in their rooms by themselves, or it turns out it's like junior high, and there are all these cliques, and it's not fun.

So it's tough. I don't think we have a great solution to it, and so I think at least our

perspective has been trying to help support people with technology, with services, with other kinds of innovations to live the kind of life that they want to as long as possible.

TIMOTHY HARRIS: Anybody else? Oh good, more. Okay.

FROM THE FLOOR: There was a particular slide that talked about Uber and Blue Apron and so forth, and how if you added all that up, it was cheaper than assisted living—something like that—and it reminded me of the story of the woman who lived on a cruise ship rather than go to assisted living. I'm wondering if—and we know that long-term care costs a lot of money, and you know—will these technologies and things begin to put pressure or slow down the rise in costs? I guess I'm being hopeful.

LISA D'AMBROSIO: Yeah, I don't know, because the real, the advantage or the difference in assisted living is other humans providing those services. And again, for people who can live independently with those services, as Jodi said, there are going to be people with some functional limitations who would be able to live independently with these services. In other cases, they won't be able to access them or use them. For people with cognitive issues, they may not be able to. You know, they're not going to be able to do it for them, unless they have other humans in the space to help them compensate. So I'm not particularly optimistic about that, in part because I think, again, a lot of the costs—and there're costs in infrastructure and building infrastructure, and then human costs in providing support for other people—they may put some pressure on it. It also depends, again, on what the adoption patterns look like for these services. We're seeing some interest, but by no means are we seeing a mass rush among older adults to use all of these services yet. That may change again as Gen X ages, and they're more likely to have cellphones, more likely to, perhaps, be comfortable using cellphones as the basis for purchases and organizing your life. But again, it really depends on these services themselves being accessible in a wide range of areas and, again, being reliable, delivering a high-quality product or service and so forth. So we'll see. We've seen a few maybe winners in this space, but there's clearly still a lot of room for innovation and opportunity.

PHYLLIS MITZEN: Hi. My question also has to do with that basket of services. I'm frankly intrigued by that. I live in Chicago, and all of my friends use Uber on a fairly regular basis. We

live in an area where there's public transportation, there's cabs, but people choose Uber. I took an Uber to Midway Airport and had a lovely experience. Again there's that personal connection, and I question somewhat the idea of driverless cars for older adults. It seems to me the Uber model with drivers is a good one, and particularly if Uber drivers are sensitive to the needs of older adults. Uber goes into neighborhoods that don't ordinarily get served.

The world is moving so quickly. I ordered a housecleaning service on Amazon which assures that the provider is bonded and insured, and I can then rate them. It's the model that the Villages in the [Village to Village Network](#) are using for their vetted services listings. It seems to me that this kind of crowdsourcing, as people become more familiar with using iPads—which are really easy to use with apps—holds real potential for this kind of help.

JODI OLSHEVSKI: Yeah. I would say, actually, Uber is definitely, I think, out in front of some of this. I know that they are, in some areas, they're starting to train drivers to work specifically with older adults, so that they can go and meet them at the doorway and help them transfer from—you know, so basically providing doorway-to-doorway service, as opposed to curb-to-curb service. So we'll have to see, kind of, how that evolves as time goes on, and how valuable it is to them.

I think your example about buying housecleaning services through Amazon is a great one, because you can certainly imagine doing that. But would you do it if it weren't branded with Amazon, if it weren't Amazon behind it, and you knew that they were bonded and insured? Would you just walk into any place off the street that you'd never heard of? And so places like Angie's List and Village models and companies like Amazon that are willing to basically put their brand behind it, I think, have the power to perhaps push some of the adoption of these kinds of services. And we are aware of companies in our area who are interested—you know, sort of more brick-and-mortar kinds of companies or companies in other lines of business were interested—in putting their brands behind some of those kinds of services that you're talking about.

TIMOTHY HARRIS: Anybody else? Questions, suggestions?

FROM THE FLOOR: As one of the studies out of Chicago showed that loneliness is indicating early death twice as much as obesity does, has loneliness come up as a subject matter, as part of the MIT research? And what are you seeing in terms of business evolution to address that?

Because, as you indicated earlier, just moving into a social living situation doesn't necessarily make you not lonely or make you feel like you're included.

LISA D'AMBROSIO: It's absolutely come up for us, and in fact, one of our recent sessions was specifically focused on loneliness and social isolation, and it's [a topic] that's ongoing. We are trying to do a little bit more around what are some of the kinds of solutions to loneliness and isolation, because obviously, as you mentioned, it's got—there's been attention to it in terms of its terrible impact on mortality and depression. It's related to so many bad things. So it's definitely come up in our group, so we've got that—that we're continuing to work on it. And AARP is one of our sponsors, so our hope is that, if we can come up with some ideas, that maybe we can get AARP to push them out and see if they get any traction.

And then further, I would say we're working with another [sponsor], hopefully this year, to look at the impact of different kinds of exercise programs on isolation, loneliness and health outcomes, because we do recognize that those are very interconnected as well, or that they can be.

FROM THE FLOOR: One thing I read about a while ago, and maybe somebody here knows, because it was another country, but I thought it was a neat idea: They were using the postal service as a way to check in on the elderly, because they're already delivering and get to know people and so forth, and I thought that seemed like an idea there waiting for a good solution. I don't know if anybody's aware of that.

JODI OLSHEVKI: Yeah, there's that, and I think in Japan at some point, they were using cable services, too, as an opportunity or using cable service or the electric company as a way to do that. We've talked with our lab, [which] for a variety of historical reasons sits within the center for transportation and logistics. So we've certainly talked to our colleagues about, you know, "You've got UPS as a sponsor. UPS knows where everybody is, FedEx knows where everybody is, the post office knows where everybody is. How can we leverage that?" And even thinking about companies like The Hartford and other insurance companies that have networks of agents and claims adjusters throughout the country. You've got essentially networks there; can you mobilize them for something? Can they be used for more than the delivery of one kind of service? Because again, they're geographically dispersed, and they're used to going in these places. So I think that's a

really important point, and I think one thing is that, as we continue to—especially in the U.S., where we're geographically dispersed—how can we think about kind of lax network resources that are distributed that might be able to be used for other purposes?

FROM THE FLOOR: Another kind of related idea is kind of—. My wife has Meals on Wheels, and that's another group. Recently I saw, I think it was the Consumer Financial Protection Bureau did some kind of placemat that they distributed through the Meals on Wheels volunteers. I really think there are ideas there.

TIMOTHY HARRIS: Anybody else? Okay. Jodi and Lisa, do you have any closing comments or anything you want to add?

JODI OLSHEVKI: No, nothing other than that these are great questions—I think important questions and great comments—and I think that we have to continue to be creative and innovative to think about how to come up with these solutions and how do we monetize them and build them into the marketplace, in addition to all the great nonprofit resources that are out there. I think that the two sort of need to work together, hand in hand.

LISA D'AMBROSIO: Yeah, I think that's right, to echo Jodi's point, that it's important to think about not just sort of doing good, but from a business perspective, how companies—how new companies—can develop and existing companies can leverage their resources to branch out and provide services or goods in different ways to the changing population.

Thank you all for coming this afternoon, and I encourage you to go to our website at AgeLab/MIT.edu if you're interested, and sign up for our newsletter and read more about the work that we're doing. Thanks.

TIMOTHY HARRIS: Okay, thank you, Lisa and Jodi, and I'd like to thank the audience for being involved in this as well, and we're done for this session. Thank you. [*Applause*]