

## Technology and the Future of Aging

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Good morning. I have organized my talk this morning in the shape of an “Oreo.” That is, in the beginning, I would like essentially to set up the drivers. These are not necessarily the demographic numbers, because you are painfully familiar with those, but the drivers of qualitative, as well as quantitative, differences of an aging population. The cookie center, if you will, will be discussing the technology. This is not so much a demonstration of “gee whiz widgets” but rather a direction and perhaps an agenda as to where that direction might go. Finally, the other side of that sandwich cookie, if you will, will be some initiatives to think about as you break into your work groups to discuss policy directions, barriers, and opportunities in our thinking of the future for technology for an aging population.

*Fortune Magazine*, about a year ago, had a very interesting article that basically said, much to its chagrin, the funeral industry seems to be losing money. It seems that we are not dying quite fast enough. This was illustrated for humor, but it has real implications. We are living longer, but we are not prepared. This is not just about the aging of the baby boomers or about the older population today. We are going to see a sustained aging of the U.S. population. This is going to be a permanent part of the American landscape and, I daresay, other countries, as well.

I have coined this phenomenon “the longevity paradox.” Billions of dollars have been invested to enable us to live longer. We have better health. We have better health delivery. We have better nutrition. Many of us are more physically fit. Some of us are even eating better. However, we are not prepared, because we did not expect all of that investment, be it public or private, to actually work. Now that we are living longer, we have not even begun to think about the physical infrastructure of an aging society. Perhaps today will be the beginning.

How will we get around? Where will we live? How will we provide care? How will we continue to learn? I agree with a previous speaker that education may be something far greater than just the degrees between 1 and 25 years old. The half-life of a PhD, as many of us painfully know, is a lot shorter than it once was. If you think about it, at age 50, you still have more than half of your adult life still ahead of you. What are you going to do during that time?

If we have a mission for this day’s discussion, it is: “How can we craft a policy or set of policies that would put into place technologies that enable people to maintain their health and allow them to do things?” It is simple, but to the point. To reiterate what Secretary Shalala had been describing earlier, the definition of what is old is changing, and it definitely is evolving. Thirty or forty years ago, an aging agenda would center largely on health, some housing, and poverty. Certainly, there is a large population that still fills those categories. However, an aging population today is not necessarily disabled, not necessarily in poor health, and certainly not institutionalized. In both the United States and Japan, the majority of older adults live alone or with a spouse. They may have many visitors as caregivers, but they live alone and, in general, they are in fairly good shape.

This translates into a population that has better health, better education, and greater income.

There is a qualitative difference emerging in aging. In envisioning an aging society, we must consider “active aging.” This population will feel like doing something because of better health: they will have a greater breadth of interests because of education, things they will want to pursue, and frankly, a little more income to be able to pursue those things. So when we set an agenda, we need to consider this.

Policy is about managing perception and managing expectations. I will submit to you that today’s older population and those of us right behind them are going to have far greater expectations as to what the technologies out there are going to do.

A WSJ-NBC poll shows that the next wave of retirees seems to want to have it all. Eighty-nine percent will devote time to learning, study, and travel. Seventy-nine percent will devote time to volunteer activities. Sixty-two percent say they will seek part-time work.

This is the good news. We should not deceive ourselves, though. As Carol Levine elucidated earlier, the fastest growing part of the aging population is the 80+ group, and they do require care. Today, more than one in four families provide care to an older adult. It is projected that by 2005 more than 40 percent of U.S. families will be more concerned with caring for an adult family member than caring for a child.

I would suggest an approach toward setting policy that implements system versus individual approaches. We need to move away from thinking that if we simply improve cars or make homes more accessible, the problems will be fixed. We need to start thinking about how to creatively exploit technology and infrastructure so that we have a seamless movement between all the environments in which we live. These environments will make life easier not only for older adults but also for all of us. Then, we need to keep in mind that aging is a multidisciplinary activity. Instead of tackling the medical issues and the engineering issues separately, we should start thinking along the lines of the Ford Motor Company’s product development teams—engaging engineering, design, health delivery, gerontology, and family members. We need to cross disciplines and cross institutions. Finally, we must maintain a consumer focus, incorporating both the older adult and caregivers.

To work with infrastructure over individual gadget, we should think in platforms. For instance, the home does more than just protect us from the rain. We need to start thinking of the home as a platform where we provide care, where we increasingly receive care, and where we might receive education, work productively, and the like. How do we integrate technologies into the home and thereby into our new lifestyles? Current emergency response systems work fine if you fall in the house. If you fall while outside watering your tomatoes, you may have a bit of a problem. We need to incorporate these practical lifestyle considerations into our next-generation models. Today’s technology can facilitate a checkup a day for older chronically ill patients at home, so why not use an aging population as an opportunity to provide a health station in every private home and public housing complex?

What is the platform for personal communications? The greatest risk of aging is not necessarily disease. It is loss of social contact. How can innovative information technologies help us maintain social connectivity? How do we reengineer the workplace for a multigenerational environment that is productive? How can information technology assist with lifelong learning? Can speech-recognition systems move us away from keyboards, and help us drive longer and more safely too?

Good technology is not just about making something better; it is about doing something different. For instance, Tokyo Power and Electric is already experimenting with the possibility of providing eldercare services through

the electric line. It is possible that in the next 10 to 20 years, we will be buying access to healthcare not from the local HMO, maybe not from the government, but from the cable company. This may be a potentially scary example, but it shows how our notion about where ideas and services will be coming from is changing.

In setting policy, we should also consider the area of human factors. This is an opportunity for that field to really blossom and to become an even far greater, more appropriate, and relevant course of study. We should think not only of making things more comfortable and accessible but also of creating technology that is more desirable.

We also must apply current technology to new situations. For instance, handheld technologies designed for busy executives could be configured into the paratransit systems that Carol Levine mentioned earlier. These systems were developed as an alternative for nondrivers, but they are not reliable. Existing technology could accommodate this situation. At the Age Lab, we are prototyping an application to combine paratransit dispatch with access to a local cable station to keep users easily updated on schedules and delays.

Finally, we must transition from assistive technology to *lifestyle technology*. There is a lot of development going on, and many see it as technology for the poor person who cannot walk or cannot hear. None of us can run 60 miles an hour—so we drive a car. Is an automobile assistive technology? We do not see it as such, but it assists us in maintaining a lifestyle. As more technologies are seen as useful and mainstream, it will be easier to integrate them into society. So in sounding the call for technology for successful aging, we need to think about technology for all society. And we need to consider how this technology will be used, maintained, and integrated into our daily lives as individuals, families and, oftentimes, as caregivers.