

Five Reasons Robots Have a Role to Play in Eldercare

Reason 1: Demand is Outpacing Supply

The good news is we are living longer. The bad news is we are living longer, and society isn't prepared to handle it. The core problem is an issue of supply and demand. Our aging population is growing at a faster pace than the population of people to care for them. This is a global issue impacting not only the US but other countries with Japan, China, Germany and Italy sighted as those leading the pack¹. According to a United Nations report, the number of persons aged 60 or above is expected to grow to 2.1 billion by 2050 a growth factor of 22%.

Bringing it back to the US, Pew Research is projecting that the number of Americans age 65 and older will more than double to over 98 million in 2060. The 65-and-older age group will represent 24% of total population. The problem is further compounded by the growing costs associated with eldercare.

The size of the problem is of such a magnitude that is spawning new markets and terminology. We now have what is known as the Longevity Economy, which represents all economic activity serving the needs of Americans over 50. According to Oxford Economics, this is expected to top \$13.5 trillion by 2032. We also have the Silver Economy, a new name given to the Seniors Market aka those 60 years of age and older. It covers "All products and services that are expected to improve disability-free life expectancy or to help dependent elderly people and their caregivers on a day-to-day basis"². The size of the Total Available Market has not been lost on savvy entrepreneurs. The number of new companies innovating to serve this market is growing daily. Investment funds are being established with this specific market focus. More mature companies and governments are also investing to address the needs of the market.

Reason 2: Loneliness and the Need for Companionship

One of the biggest challenges faced by seniors and those that care about them is loneliness and isolation. As people get older the chances of living alone naturally goes up. This is not a new problem for the elderly, but it has been amplified by the inability of family members to stay home - be that for economic reasons or geo location - as well as more and more older adults not having had children. Now interestingly, a study from UCSF found that loneliness doesn't necessarily correlate with living alone. 43% of all seniors in the study reported that they felt lonely, yet only 18% of those lived alone with the remaining 25% living in eldercare facilities or received in-home care.

¹ Aging Japan: Robots may have role in future of elder care

² What is the Silver Economy

The consequences linked to loneliness include cognitive decline and a higher death rate. With the projected growth of the senior population and more limited access to caregivers, it is anticipated this will only increase.

Reason 3: Memory Challenges

The problem of caring for our older population is amplified by the relative increase we are seeing in dementia and Alzheimer patients. Dementia is one of the major causes of disability and dependency among older people worldwide. According to the World Health Organization, around 50 million people worldwide have dementia, and there are nearly 10 million new cases every year.

Alzheimer's is the most common cause of dementia among older adults. By 2050, the number of Alzheimer's patients as a proportion of the total is set to triple to over 15 million. In this same report, it was highlighted that while the average Alzheimer patient is disabled for 9 to 20 years today, this will increase to 40 to 50 years as medical advances continue and life expectancy continues to grow³.

From a caregiver perspective, dementia and Alzheimer's adds a unique dimension to the individual's demeanor. It is a phenomenon called "sundowners syndrome". It causes the individual to show increased agitation, confusion and anxiety as late afternoon transitions to evening. This can turn an otherwise friendly person into someone that is combative and even violent, adding stress to the caregivers involved.

Reason 4: Problem of Falling

The normal changes of aging, like poor eyesight or poor hearing, can make older people more likely to fall and this leads to both personal and economic challenges for the individual. Falls are the leading cause of fatal and non-fatal injuries for older Americans. According to NCOA one in four Americans aged 65+ falls each year. Every 11 seconds, an older adult is treated in the emergency room for a fall; every 19 minutes, an older adult dies from a fall. In 2015, the total cost of fall injuries was \$50 billion. Medicare and Medicaid shouldered 75% of these costs.

In addition to the risk of injury, falls impact quality of life. As a result of the fear of falling, the elderly will limit their activities and social interactions, which can result in physical decline, social isolation and loneliness, as noted above.

Reason 5: Caregiver Needs and Challenges

Mercer estimates that US providers by 2025 will face a severe shortage of caregiver talent. Specifically, they see a shortage of about 500,000 home health aides, 100,000 nursing assistants, and 29,000 nurse practitioners. Assisted living leaders generally agree that getting good staff at all levels is a difficult challenge. The eldercare sector is often perceived by doctors and nurses as a less rewarding field in terms of compensation and in other ways. For assistant, aides and other staff, pay can be low and the hours long. You couple this with the challenges faced by caregivers such as

³ The Major Business Challenges of Senior Care/ Assisted Living Organizations

sundowner's syndrome it is not hard to understand why turnover rates can be high and why there is a need to look towards solutions that support the caregiver.

Enter Stage Right: Robots and AI

The concept of eldercare robotics has been around for a fair number of years. Its importance though is becoming increasingly understood, as the gap between the number of caregivers and our aging population has widened. To date, studies have shown that while common technologies/devices such as a computer or smart phone can seem foreign to the elderly, there is positive response to interaction with robots.

Robots are seen as a vehicle for augmenting the caregiver team. Studies in social robotics – robots that can interact and communicate with humans – have shown how robots could address issues of care and social interaction. As robots have become more capable of interacting and the world has become more accustomed with using voice as an interface, a wealth of new use cases is opening up. As Conor McGinn, a roboticist and assistant professor at Trinity College Dublin noted, “Robotics has the potential to play a huge role in elder care facilities and hospitals to enable people to do more with less.”

Robots can play a role in...

- Enabling people to live at home longer
- Helping to reduce loneliness
- Reducing anxiety
- Addressing the challenges of memory loss, dementia and Alzheimer's
- The problem of falling
- Expanding caregiver capacity
- Assisting the caregiver and alleviate stress

Robots in the field of eldercare fall under three classifications: emotional support, communication and serving and fetching robots. Their prices range from \$99 for Hasbro's emotional support cat to \$25,000 for Softbank's Pepper. In total there are well over a dozen different robots making their way into eldercare, each purposed to a specific use case. Misty Robotics out of Boulder, Co has introduced Misty II, a platform robot, which enables developers and their companies to build for the specific use cases needed in the category of communications robots.

Most will agree, it is not a matter of IF but WHEN robots will be put to meaningful work in eldercare.

(-)-MISTYROBOTICS

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