Aging Well Working Session Series:
Next Generation Tech

Backgrounder

Most Americans see themselves living an independent and fulfilling life in their own homes and communities as they age. That vision is not an easy reality. Lack of infrastructure, services, tools and resources make maintaining one's lifestyle and remaining in one's home and community difficult today. But if technology based solutions and policies are developed that start with the needs and desires of Americans as they age, great strides are possible.

The Global Social Enterprise Initiative (GSEI) at Georgetown University's McDonough School of Business and the health and well-being company, Philips are engaging stakeholders to take on this challenge. They are bringing together experts in health care, technology, consumer behavior, product innovation, community development and policy to identify and remove barriers to increase technology adoption so older Americans can remain in their homes and communities.

In just six years, an estimated 118 million people will be over the age of 50.[1] Today, despite the rapid development of technological devices, the impact is still minimal when it comes to aging well, primarily due to lack of integration with broader systems. Universal access to broadband Internet is still a dream, and many consumers, service providers, health care professionals and caregivers are untrained and slow to use available technology solutions. Product development is still a bit of the "wild west," with products that are complicated, costly and not interoperable; and these offerings continue to raise concerns around personal privacy. Reimbursement policies and the regulatory environments remain unchanged, and, with the health care system still primarily "offline," there are few standards in place for digital medical records. This environment results in little incentive to incorporate technology into the delivery of health and other services that can improve the lives of older consumers.

Yet there is huge promise for a change in the current state of technology adoption to help Americans live fulfilling lives in the setting of their choice. The aging well tech market, conservatively estimated at $2 billion today, is burgeoning, and, with each new generation, acceptance and utilization of technology increases.[2]

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[1] Holtzman, Jody. "What's Your 50+ Strategy? A New Investment Theme," Venture Capital Review, Issue 29, 2013.

[2] Orlov, Laurie M. Technology for Aging In Place: 2013 Market Overview, July 20, 2013, www.aginginplacetech.com.

Insights from a New Survey of Boomers and Gen Xers

A study conducted in August 2013 by GSEI and Philips bodes well for the future.[3] Findings reveal that Gen X, Younger Baby Boomers and Leading Edge Baby Boomers[4] in almost equal numbers use all types of technology. While they acknowledge that their parents are less inclined to adopt it, Gen X and Boomers see the value of technology as they move into older age themselves. Among the findings:

- Nearly seven out of ten (69%) respondents say they are comfortable or extremely comfortable using technology, but there is some difference among the generations. Gen X is most comfortable (75%), with about two-thirds (68%) of Younger Boomers, and six out of 10 (62%) Leading Edge Boomers indicating this degree of comfort.

- Surprisingly, among all generations surveyed, after email and texting (99%), 83 percent used online sites and apps for online banking, investments and paying bills. Location-based technology to get directions (80%) and social media (76%) were the next most frequently used.

- Boomers and Gen Xers report that their parents are not technology users, with the exception of their use of email (72%). In their opinion, only about one out of ten (10%) are savvy or extremely savvy in using technology.

- The majority (52%) wishes their parents would use technology more.

- Nearly two thirds (63%) of Leading Edge Boomers are happy their parents are using (or wishing they would use) home monitoring systems.

- More than seven in ten (72%) Boomers and Gen Xers want to age in their own home, with only three percent interested in assisted living. Turning the tables, about one-third (35%) wished their parents would move to an assisted living facility even though over two-thirds (68%) thought their parents would want to remain at home.

The survey also found that 95 percent think today's technology could be better developed to help people age in their homes and communities. This shows that up until this point, we haven't cracked the code to overcome barriers to adoption and release the power of technology to enable people to age well.

The businesses that create and market these types of technologies can be an integral part of the equation. In combination with consumer education and government and community initiatives, continuous technological innovation can be the wild card in maintaining well-being, saving scarce resources and ensuring all people have a good quality of life in their chosen surroundings as they move into their later years.

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[3] Global Social Enterprise Initiative, McDonough School of Business, Georgetown University and Philips, Next Generation Tech and Aging Well: An Examination of Boomer and GenX Behaviors, September, 2013.
[4] Gen Xers born 1965-1976; Younger Boomers born 1956-1954; Leading Edge Boomers born 1946-1955.

There is some urgency to make this happen in the next few years. Will all stakeholders be able to move the dial so the promise of technology becomes a reality, not a dream? What are the barriers that impede progress now and into the future, and what steps can be taken to initiate change?

Getting There (Soon): Six Barriers to Strike Down

1. Access

Although technology is developing at a fast pace, new generations of seniors will have different attitudes and behaviors than today's senior cohort. Growing numbers of consumers age 65 plus are using email and cell phones, but they generally do not incorporate mobile devices into their lives. For example:
- While 91% of adults 18 and over own a cell phone, 76% of those aged 65+ do.
- The majority of cell phone owners have smartphones – 58%. However, those aged 55+ are using them the least (39% age 55-64, 18% age 65+).
- 35-54 year-olds own more tablets than any other age group, and those aged 65+ own the fewest. 30-64 year-olds are also the fasting growing segment of tablet ownership.
- Only 56% of those 65+ use the Internet compared to 83% of those ages 50-64 and 92% for those ages 30-49.[5]

In addition, there are infrastructure difficulties that impede access. Only 70 percent of those 18 and older have high-speed broadband at home, making interconnectivity difficult.[6] Rural and urban divides, as well as income, continue to be barriers to infrastructure availability that would enable universal access to broadband nationwide.

Improving infrastructure and easing access to devices can help enable income generation and financial transactions; monitoring and management of personal health needs; management of the home environment, energy use and home safety; tapping educational opportunities; staying informed of daily news; carrying out daily tasks and shopping; communicating with friends and family; staying active in the community; or simply be entertained.

Points of Discussion: *What are the barriers that impede access to technology? What are the infrastructure needs and solutions to create universal adoption? What strategies can be used to reach older consumers, family members and service providers? What policies need to be changed or adopted to ensure access by all?*

2. Cost

The issue of cost is both a real and an attitudinal barrier. For all age groups, those with low income and assets are less likely to be able to purchase most technologies. While 85

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[5] Pew Research Center's Internet and American Life Project Spring Tracking Survey, April 17-May 19, 2013, http://pewinternet.org/Reports/2013/Smartphone-Ownership-2013/Findings.aspx; http://www.pewinternet.org/Reports/2013/Tablet-Ownership-2013/Findings.aspx; http://pewinternet.org/~/media//Files/Reports/2013/PIP_Offline%20adults_092513_PDF.pdf
[6] Zickuhr, Kathryn and Aaron Smith, Home Broadband 2013. Pew Internet and American Life Project, August 26, 2013, http://www.pewinternet.org/Press-Releases/2013/Home-Broadband-2013.aspx.

percent of all adults are Internet users, at incomes of $30K or less, the percentage drops to 73 percent. Only 47 percent of those in this lower income group have broadband at home.[7] However, among this segment of Americans, cell phone use is at 85 percent, providing a better channel with higher potential for delivery of needed services. Since many older consumers live on a fixed income,[8] and Medicare and health plans generally don't reimburse for technology, the "double whammy" of age and income can price out many consumers from access to technological solutions.

The good news is that as technologies evolve and competing models penetrate the market, prices drop. While the average price of a cell phone is $20, the average price of a smartphone was $443 in 2011, is $372 today, and is predicted to drop to $302 by 2017 according to International Data Corporation (IDC). But phone plans can be costly. Basic smartphone plans from major national carriers such as AT&T, Verizon, T-Mobile and Sprint start at $60 per month for voice, text and data and offer carrier subsidies averaging $200 for devices.[9] These subsidies, however, may soon be in jeopardy today.[10]

Consumer attitudes play a role as well. Even those who can afford it appear to be resistant to paying out-of-pocket to buy a device and also pay monthly fees, especially for health-related technology or monitoring devices. That being said, there may be a bright spot in the future. In the GSEI-Philips study, one-third (33%) of the Boomers and Gen Xers said they would be willing to pay $100-$499 per month if it meant they could stay at home rather than move to a care facility when they got older. Another third (34%) said they would pay $25-$99 per month.[11]

Points of Discussion: What are the cost barriers and how do they impede adoption of technology? How can cost and consumer expectation meet to make technology more affordable? What can be done to help those who can't afford it? What strategies can be used to change attitudes about technology's value for those who can pay? What policies need to be instituted to incentivize technology use?

3. Privacy Concerns

Survey results show that privacy is a collective concern when it comes to monitoring, tracking and reporting. However, Gen Xers more than Baby Boomers considered privacy as the top barrier to technology use. Rapid technological development by both known and unknown manufacturers, tacit and complex permissions in apps and social media, recent revelations in the media about government monitoring of internet and phone activity, the mining of personal data and lack of regulation all make for wary consumers.

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[7] Madden, Mary. Technology Use by Different Income Groups, Presentation at the Annual Welfare Research and Evaluation Conference, US Department of Health and Human Services, May 29, 2013. Pew Internet and American Life Project, http://www.pewinternet.org/Presentations/2013/May/Technology-use-by-different-income-groups.asp.

[8] The median income for individuals 65+ is at $19,939 and $33,118 for household income. Pension Rights Center, Income of Today's Older Adults, www.pensionrights.org/publications/statistics.

[9] Lopez, Brad. The Total Price of Smartphone Ownership, April 30, 2013. TmoNews. http://www.tmonews.com/2013/04/the-total-price-of-smartphone-ownership/.

[10] http://www.fool.com/investing/general/2013/07/19/the-next-battle-in-the-smartphone-wars-phone-subsi.aspx.

[11] Global Social Enterprise Initiative, McDonough School of Business, Georgetown University and Philips, Next Generation Tech and Aging Well: An Examination of Boomer and GenX Behaviors, September, 2013.

The GSEI-Philips survey reinforces this unease. When asked, "How do you feel about using technologies that track and report your location," 54 percent were concerned or extremely concerned. Of this group, 88 percent cited privacy and a "big brother" feeling as the reason why.

These findings are reinforced by a study issued by the American Medical Informatics Association indicating that nearly one in eight Americans has withheld health care information about themselves due to concerns about security and privacy.[12] The advent of electronic health records reporting along with general mistrust of this type of technology is an obstacle to overcome.

Points of Discussion: *How can consumers' privacy concerns be alleviated? Has the "wild west" of technology development created this problem, and should something be done (or not) to rein it in? What steps need to be taken and by whom to earn consumer trust?*

4. Ease of Use

As the open frontier of product development continues, opportunities for innovation and barriers to use emerge. Technology companies and entrepreneurs are now aware of the potential of the 50+ market. This market segment is estimated to grow to at least $20 billion by 2020 and by all counts will radically change the availability and use of in-car technology, mobile emergency response systems (PERS), health devices and smart phones.[13] Most products are stand-alone gadgets and are not intuitive for use in the day-to-day life of consumers. Products that require multiple steps to activate or use can leave the consumer confused and unsatisfied. Gen X and Baby Boomer survey respondents, as they considered themselves in retirement, will continue to use products and services that are helpful and informative. The majority desire products that:
- Help them communicate by voice, video or text and social media
- Keep them informed and entertained
- Help them make transactions
- Monitor and inform them about their health and well-being
- Get them where they want to go

Additionally, for many consumers, the time involved learning how to use a technological device or the knowledge to fix bugs and glitches is a disincentive to use. Instructions are often obtuse and difficult to understand. Fonts are often too small for the older consumers' eyes and design elements (such as adjustable touch levels) are lacking. System shutdowns cause disruptions and anxiety. For busy caregivers, the lack of easy-to-use devices and interfaces to input data and, in some cases, their own or loved ones' lower levels of literacy, are real barriers.

One-third (31%) of Boomers and Gen Xers reported that a key barrier for them is the potential for problems or "bugs" that may have to be fixed. When asked why their parents

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[12] Conn, Joseph. Many Withhold Medical Information Over Privacy Fears, Study Finds. Vital Signs: The Healthcare Business Blog, www.ModernHealthcare.com/article/20130906.
[13] Orlov, Laurie M. Technology for Aging In Place: 2013 Market Overview, July 20, 2013, www.aginginplacetech.com.

didn't use technology, about half (53%) said that it was too hard for them to learn to use it.[14]

Points of Discussion: What are the pros and cons of the rapid development of technology for aging well? What issues have caused certain industry, product or service launches to succeed or fail in the past? How can proactive, intuitive products be developed that are responsive to older consumers and integrated with other products the consumers use in their home and daily life? What barriers are there to product integration? What steps can be taken to make products more useful, affordable and utilized? Who can assist consumers, service providers and health care workers to help them understand how to use products and services more effectively?

5. Interconnectivity and Coordination

"Smart" technology is here. "Smart phones" and tablets not only let us communicate, but are integrating apps and other tools to help us make purchases, scan bar codes to obtain nutritional information, play games, track our daily physical activity and even open our garage doors. "Smart" homes are using integrative technology and automation to create safe and convenient environments. Kitchen appliances, water faucets, lights, home entertainment, security systems and climate controls can all be monitored and managed through a single device, remotely and with the press of a button.

Yet in health care and related settings, technology is available but is not generally integrated into a meaningful patient-care system. Video conferencing, Skype and Facetime are available, yet an immobile patient must still make physical doctor's office visits even for basic needs. Doctors' offices and hospitals are attempting to move to electronic records, but the shift has been slow. When patients are discharged from hospital to home, health monitoring and reporting via technology could make a difference in avoiding readmission, but it is rarely part of the equation. When made available, devices and monitors can be bulky, invasive or difficult to use and maintain. Home care workers, family members and patients themselves could be better trained to use technology when it is available.

When asked to think about their retirement years, more than 90 percent of Gen X and Baby Boomers in the GSEI-Philips survey said that being independent and having access to quality health care was important or extremely important to them. Interestingly, 60 percent of adults say they track their weight, diet and exercise. One-third track health indicators and symptoms such as blood pressure or glucose levels, and one-third of caregivers track a health indicator for the care recipient. But technology isn't central to the equation. Nearly half track "in their heads", another 34 percent track on paper and only 21 percent use technology to track their health indicators.[15]

Removing barriers to more rapid integration of technology into care delivery, care management systems have high potential for many health care providers, home and community based care, families and security firms.

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[14] Global Social Enterprise Initiative, McDonough School of Business, Georgetown University and Philips, Next Generation Tech and Aging Well: An Examination of Boomer and GenX Behaviors, September, 2013.
[15] Fox, Susannah and Maeve Duggan, Tracking for Health, Pew Internet and American Life Project, January 28, 2013, http://www.pewinternet.org/~/media/Files/Reports/2013/PIP_TrackingforHealth%20with%20appendix.pdf.

Points of Discussion: *What are the barriers to better coordination and interconnectivity? Are there examples of programs that are successful or have failed, and what are the key ingredients? How can these problem be solved, and are the action steps best taken at the federal, state or local level?*

6. Policy

Public policy has not kept up with the rapid development of technology. This becomes even more important in an era of scarce resources and a growing population of older people who will ultimately need care.

Consumer protections for use of personal information, hidden fees and online privacy remain concerns. Medicare, Medicaid and insurance reimbursement policies are antiquated, using the prevailing fee-for-service reimbursement system that pays for in-office physician interaction, and volume rather than outcomes or remotely delivered services. There is regulatory uncertainty regarding the convergence of telecommunications and medical devices and other e-care solutions. [16] Despite broad telehealth adoption by the VA, CMS has yet to move reimbursement of technologies beyond the pilot stages. Thus policies are not aligned with technologies that can help in more efficient and cost-effective care delivery. Yet policymakers, including CMS, are looking for innovation, seeking new ways to offer better and more affordable services to older people and make health and community-based services more efficient and cost effective for the government.

Leadership and policy adjustments are needed to realize the full potential of technology.

Points of Discussion: *What policies have been roadblocks to more integrated and appropriate technological development and adoption? What are some policies and programs that can be initiated more quickly to facilitate change? Where should the leadership fall on the Federal, State and local levels?*

From Conversation to Action

A common objective should be to start a discussion that leads to action – to take what is known about how consumers are using technology today and use it to imagine what might be possible for the future. If the goal is to create an environment where all adults can continue active and fulfilled lives in their homes and communities, then all stakeholders need to act now.

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Special Acknowledgements: Laurie Orlov, Kate Morris Stanley, Ladan Manteghi

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[16] Hearings on Aging in Place: The National Broadband Plan and Bringing Technology Home. Hearing before the Special Committee on Aging, US Senate, 111th Congress, April 20, 2010, Serial No. 111-17, US Government Printing Office, http://www.gpo.gov/fdsys/pkg/CHRG-111shrg57982/pdf/CHRG-111shrg57982.pdf.