Technology for Aging in Place 2016

Market Overview

February 2016

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Aging in Place Technology Watch

2016 Survey of Older Adults Conducted by **Link-age Connect**

WHO SHOULD READ THIS REPORT?

This report was most recently revised in February, 2016, updating products, services, websites, and apps. It serves as a market overview with a single purpose: it is intended to describe the need for, and the current market of, offerings to help aging adults live full lives in their homes of choice. As such, it is relevant to:

- Vendors and entrepreneurs marketing to baby boomers and seniors
- Social networking sites targeting baby boomers or seniors
- Advocacy and tech training groups like AARP TEK, OATS' Senior Planet
- Retirement Communities that serve independent adults
- Assisted Living Facilities (ALFs) and Communities represented by Leading Age and Argentum associations
- Senior housing developers
- Home care agencies
- Home health care agencies
- Geriatricians
- Hospitals and integrated service delivery networks
- Government agencies and policy makers
- Geriatric care managers (NAPGCM, now Aging Care)
- Naturally Occurring Retirement Communities (NORCs)
- Virtual Villages and their national network (VTVNetwork.org)
- Intentional Communities and Co-housing advocates
- Startup incubators
- Investors interested in the boomer/senior market
- Caregivers, seniors, and family members

THE CONTEXT OF AGING – EVERYBODY'S DOING IT, MOSTLY AT HOME

Eighty percent of older adults today live in their own homes – with one-third of the 65+ and more than 46% of the 75+ now living alone.[1] Not surprisingly, the majority of them would like to or may be forced to stay there – and if they move, according to AARP, it will be to another private home.[2] The desire to live at home dominates the minds of the oldest baby boomers; they began turning 70 in January, 2016.

"2015 was the year that tech for older adults 'came of age' in particular with over $100 million in venture funding for caregiving marketplaces." – Stephen Johnston, Aging 2.0

Within that context, aging in place reflects the desire or ability to successfully age and remain in their home of choice, whether it is a private home, condo, apartment, or less likely, a group setting. This business opportunity is further underpinned by the very recent growth of interest in the mature market – like **Aging 2.0**, **Link·age Ventures**, and **StartUp Health** – and Venture Capital investment in tech-enabled home care firms. Why such excitement? Three factors ae driving a wave interest in caregiving and aging in place.

Health costs rise and health policy drives care into the home. As Medicare penalties for hospital readmissions rise, hospitals are looking for ways to better control their destiny in the face of closings.[3] They are providing outpatient clinics and buying rehab facilities (aka skilled nursing facilities, or SNFs), focusing on managing hospital-to-home care transitions. Insurance companies seek ways to lower the cost of readmissions with improved care coordination and care transition programs. Providers are beginning to see Medicare reimbursement for use of telehealth technology, particularly video consultations. But healthcare spending now exceeds Social Security Spending according to the Congressional Budget Office.[4] And out-of-pocket healthcare spending is on the rise as people age, especially for drugs and end-of-life care.

"The average US household spends 20% of the budget on healthcare – for older people the percentage is greater, making it a kitchen table issue for older Americans." – Jane Sarassohn-Kahn, Health economist, Health Populi

Stark consumer economic realities prevent moves to senior housing.... Median net worth of the 75+ age range is now $156,000, inclusive of home equity (see **Figure 1)**.[5] This is deferring moves to assisted living – its move-in age now a mid-80's and frailer demographic.[6] But boomers are right behind them – and even less able to move in. They have simply not saved enough – holding an average retirement savings portfolio of only $136,000 – enough for just two years of a private assisted living community like Brookdale.[7] And worse, the average 65-year-old enters retirement years with an unprecedented level of debt **(see Figure 2)**.[8]

…And life expectancy at age 65 has increased, especially for women. For example, in 2014, the Society of Actuaries updated life expectancy to its highest projected number to date. This is used in pension fund calculations and asserts that women aged 65, on average, can expect to live until they are 88.6; men can expect to live on average to be 86.6.[9] And one in four, according to the Social Security Administration, will live past 90. The combination of financial status and life expectancy raise fears of outliving assets and being unable to afford care.

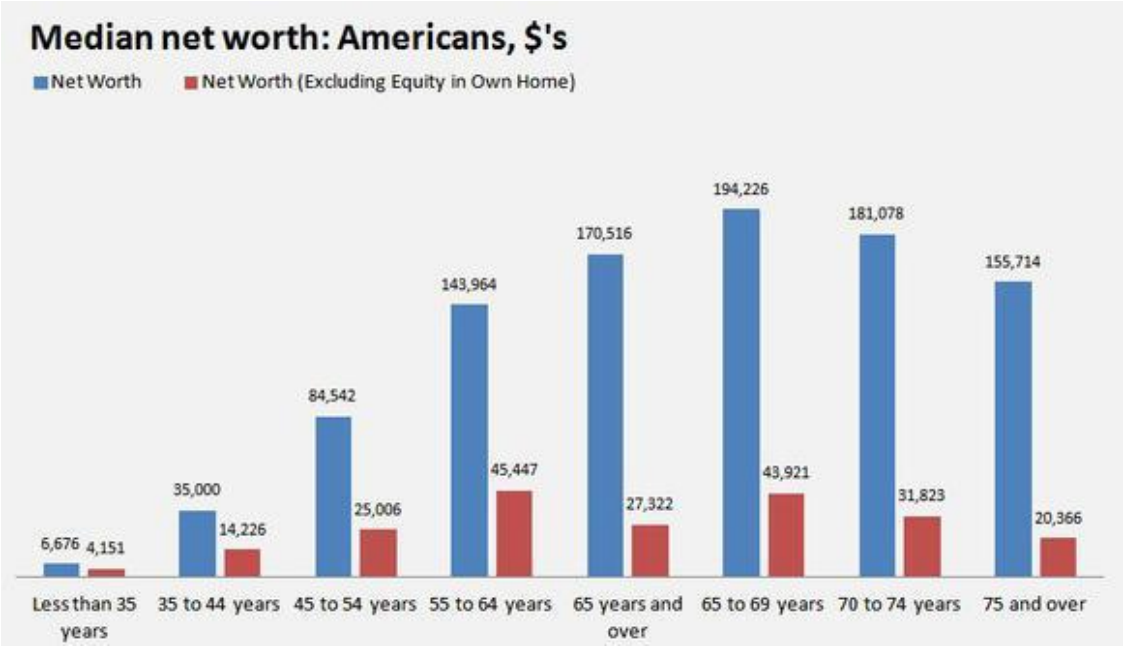


Figure 1 Americans Net Worth by Age, 2015 Source: US Census

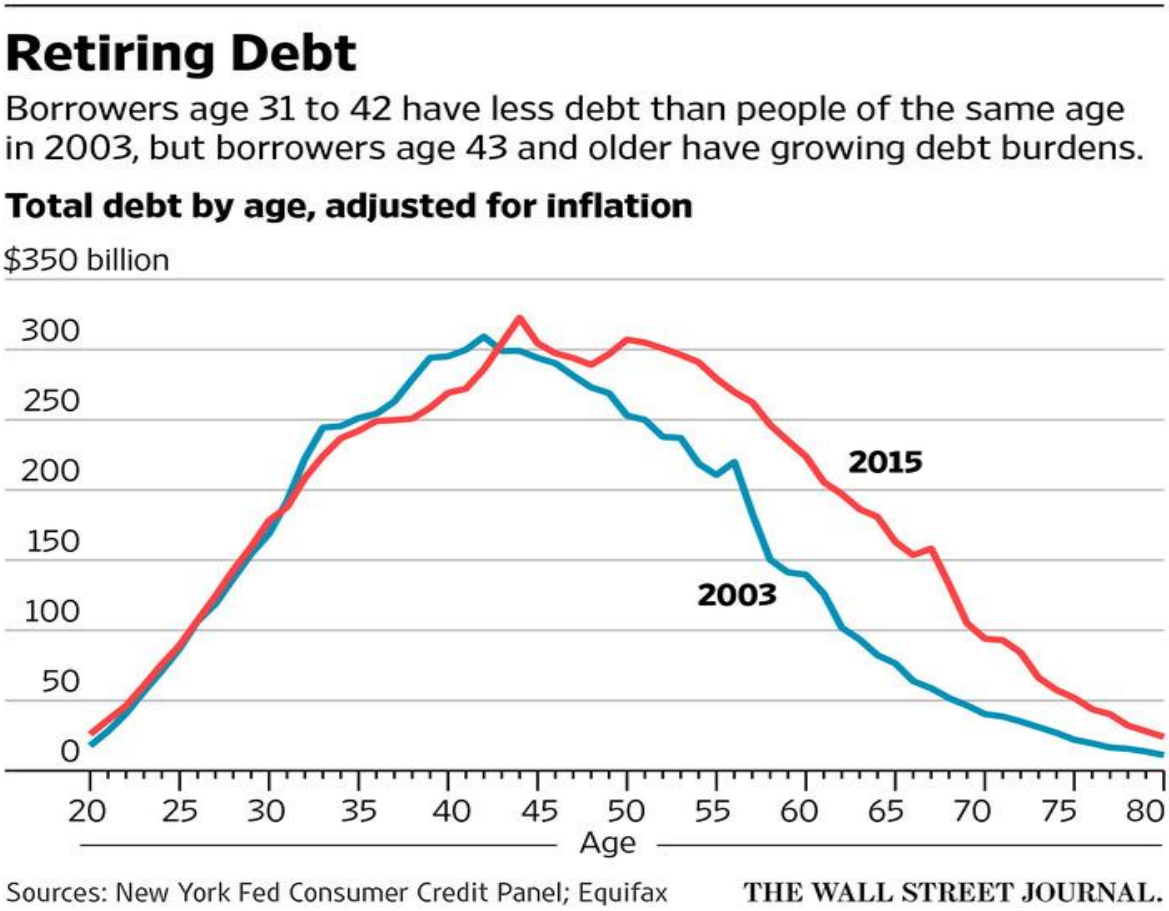


Figure 2 Total debt by age as of 2015

In 2015 Investors Began to Care More about Home Care

Besides further cementing consumer commitment to support aging at home, 2015 presented a virtuous cycle of interest, hype, and investment in caregiving, culminating in National Caregiver's Month in November.[10]

Caregiving demands of an aging population create a problem and opportunity. According to AARP's January, 2016 Caregiver Innovation Frontiers Report, 117 million Americans are expected to need assistance of some kind by 2020.[11] However, according to a 2013 AARP policy report, there will simply not be enough family members or even paid workers in the right place at the right time – the caregiver support ratio – to oversee care requirements (See **Figure 3)**.[12] And in fact, the gap has already been reached in numerous counties across the US.[13]

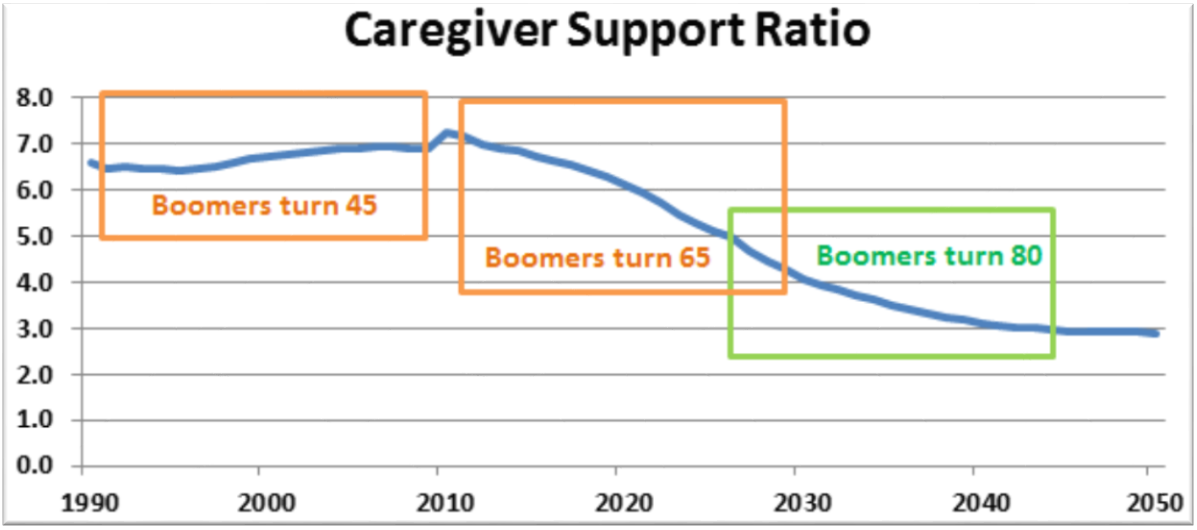


Figure 3 – AARP "Aging of the Baby Boom and the Growing Care Gap, 2013"

Paid home care picks up where families and senior housing leave off. On average, home care fills a care gap of 20-27 hours per week at a lower cost (for families, $18-20/hour) than a move to assisted living. Home care work (or personal care aide) has been one of the fastest growing job categories in the US, according to the Bureau of Labor Statistics, but pay to the worker averages around $10/hour – and for much of the industry, turnover of 40-65% is typical.[14]

Tech-enabled home care startups receive more than $80 million of funding in 2015. Whether it was a coincidence or imitation, three young men formed three different startups in 2015, all funded by Venture Capital investment – **Honor** (San Francisco), **Home Hero** (Los Angeles), and **Hometeam** (New York/New Jersey). Home Hero is a matching service, dubbing itself "The Match.com for Senior Home Care).[15] The other two startups hire and manage labor directly. So what is the 'tech-enabled' element? It's still early, but the founders describe an app or logistics algorithm as the difference in their offerings.[16] Or in the case of Hometeam, the tablet will power the worker in improved background checking, matching, or oversight of the worker, plus better communication to families.[17]

Caregiving apps multiply like weeds. During 2015, more caregiving apps emerged, were collated online, won buzz, mention or awards at Live Pitches, including those for caregivers wanting status updates on the well-being of a care recipient. Some are like **CareAngel** and deploy avatars and automated check-in calls; others are like **Care/Mind** to combine a wearable like **Fitbit** to alert to inactivity or decline, or **CareSync,** which recently received $18 million in funding for chronic care management, particularly of Medicare patients.[18]

IN 2016, WHAT TECHNOLOGY DO THE REAL SENIORS USE?

Pew Research has long-tracked Internet usage through its Internet and American Life project – the survey has been running for the past 15 years and including the population aged 75+.

From 93% non-use down to 50%. What was the context? Over 15 years, browsers and carrier speeds improved – and content the Web became more valuable. Note that the percentage of non-Internet users has dropped during that period from an nearly-all 93% in 2000 down to 50% in 2015 (see **Figure 4**). What will it take to shrink it further?

- **Lower cost Internet service.** At an average cost of $60/month, in-home Internet access is out of reach to the elderly on fixed incomes.

- **Smartphone adoption by the oldest segment.** Most likely smartphones will be overtaking cell phones among the oldest – a natural outcome of dwindling availability of clamshell/feature phones.

Age 75+ non-Internet use since 2000

Year	Percent	Base Count
2015	50%	757
2014	57%	624
2013	60%	1392
2012	62%	2315
2011	65%	804
2010	71%	1873
2009	71%	1033
2008	74%	1762
2007	77%	1304
2006	78%	1739
2005	82%	1450
2004	88%	1127
2003	88%	1157
2002	89%	1482
2001	93%	1370
2000	93%	2771

Figure 4 Source: Pew Research Internet & American Life Survey

- **Access to ongoing training and refreshers.** To be sure, the oldest are likely to use smartphones as feature phones – until they learn about their use, whether in the store, from their family, or in training centers in their communities. But even then, automatic updates and application software changes will push users back to the store or family for refreshers.

Tracking the Older Adult Usage Outside of Pew Research

Besides Pew Research, **Link·Age Connect** has twice fielded a survey of the oldest Americans aged 90 to 100, about their use of smartphones, tablets, and the Internet, examining an oldest-old demographic that marketers typically ignore, lumping them with the 65+. As you can imagine, the tech ownership of 90-year-olds has little in common with that of people 25 years younger.

Who is Link·age Connect and who did they survey? During 2011, LinkAge Connect, an organization that provides services to older adults sponsored a survey of about technology use of individuals aged 65-100 – receiving 1789 responses through its member organizations which

represented 122,000 older adults across 22 states. One of the key findings was identifying very limited use of smartphones (3%), tablets (3%) or even Internet access (33%). Non-users expressed interest, but 51% had incomes under $25K, keeping them, as one responder observed, 'financially unable to take advantage of technology.'[19]

Link·age Connect asks the question again – but technology times have changed. Five years later, in January and February of 2016, **Link·Age Connect** fielded a similar technology survey, this time obtaining completion by 401 online responders. More than half were aged 70+, largely living independently. This time half of responders reported annual incomes higher than $50K and 40% of responders reported owning a smartphone – in comparison to 3% in the 2011 survey (**see Figure 5, Figure 6** and **Figure 7**).

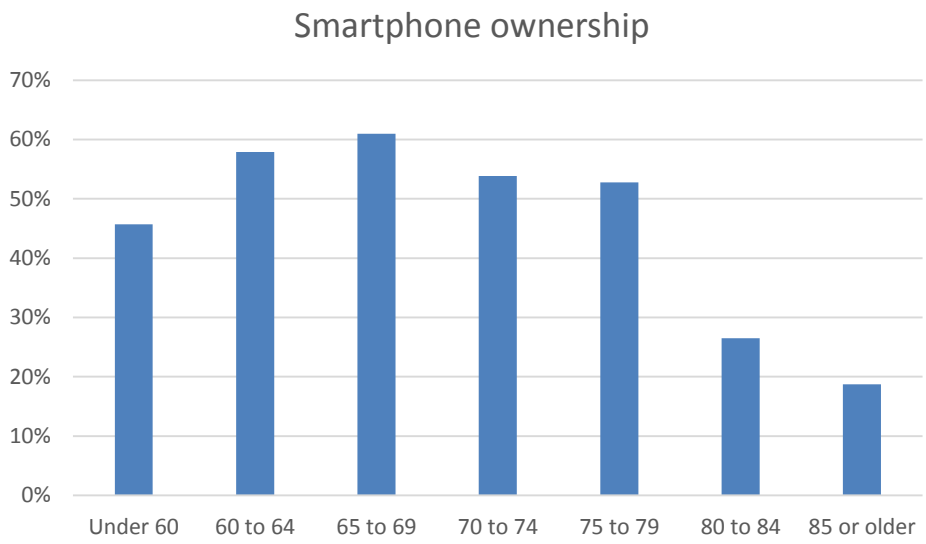


Figure 5 2016 Link·age Connect Survey Smartphone Use

Commenters noted the ubiquity, and both positive and negative aspects of smartphones:

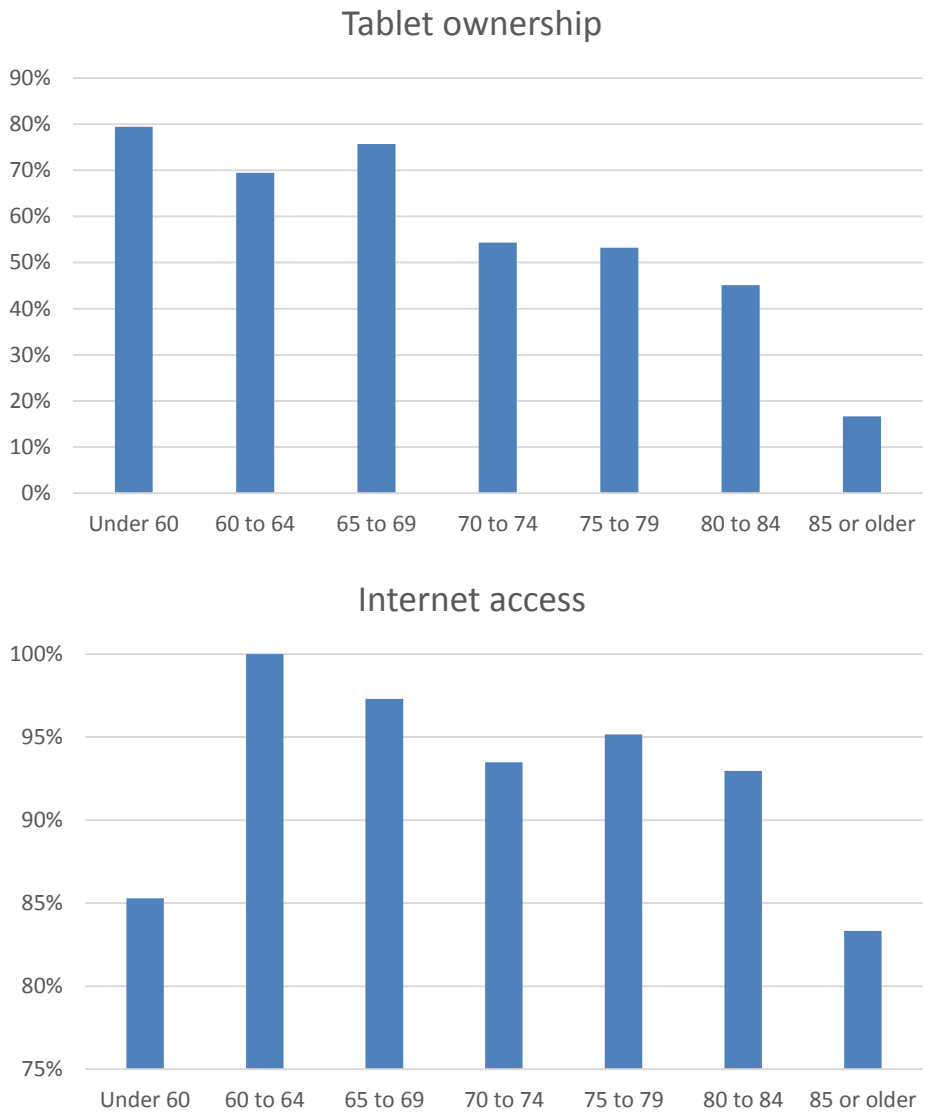
"Life is NOT a constant emergency. With navigation systems, no one has any idea where they are in relation to the world." (Age 80-84)

"I have 2 iPads, an iPhone, a MBP laptop, and two iMacs! Oh, and an iWatch. They are all wonderful when they work." (Age 75-79)

"Our smart phones (she has Galaxy, I have iPhone) give us a great deal of capacity. We're impressed how much can be done out of one hand-held device." (Age 75-79)

"In spite of all of the advances and advantages out there, it is virtually ruining our youths' manners. They always have their noses deep in their "smartphones." (Age 80-85)

"I feel that with all the technology there is, it is still very important that we have land line telephones that still work even when the power goes out. Many people especially in a retirement community need to be able to stay connected, especially in an emergency." (Age 70-74)



2016 Figure 6 and 7 Link·age Connect Survey Tablet Ownership, Internet

"The internet is not safe for financial transactions. I am tired of getting unwanted emails on a service that I pay for and therefore put anything like that on permanent block." (Age 75-79)

***"**My only concern is that since my savings will soon be depleted, I won't be able to update my technology instruments in the future as I have in the past." (Age 80-84)*

***"**I wanted music on an iPod but the fad came and went. I would like to download specific music that I like on a device, but don't know how. So, I enjoy satellite music in my car." (Age 60-64)*

TECHNOLOGY UNDERPINS, DOES NOT REPLACE SERVICE OR FAMILY ROLES

The categories of technology offerings required to age successfully are comprised of four market segments – each useful in itself, but together, they complete a puzzle of maintaining connections, safety, health, and a more fulfilling and engaged life as we age (see **Figure 8)**:

Communication and engagement. For baby boomers and younger, life is unthinkable without e-mail, chat, web surfing, Facebook, Smartphones, video games, Skype, and texting. Yet the majority of seniors age 75+ may be unaware or less familiar with these 24x7 ways to be in touch and in the know.[20] Many may find their devices too complex, in constant need of patches and upgrades – and they rightly worry about data security and protecting themselves from fraud and identity theft. Simplified tech (for aged 75+) can provide modified tablet interfaces – but as the AARP **RealPad** proved, specialty versions for the elderly have limited long-term potential. Newer, brighter, faster smartphones will replace tablets, and easier-to-use smartphones or smartphone interfaces will dovetail with market disappearance of the traditional clamshell phone. For seniors to keep up, training is critical – including refreshers from the carrier or company that provided the device.[21] Once online, seniors and long-distance grandchildren can text, chat, read books together, share a project or a visit using Skype on a tablet.

Safety and security. The ability to remain at home depends on whether the home is free from obstacles and dangers – and how risks are addressed. Beyond retrofitting the home and activating home alarm systems, seniors are served by security systems companies and PERS vendors that get recurring revenue from PERS and associated call center business. The market for mobile PERS continues to grow – reaching past 20% of the PERS market in 2015. Firms include **Nortek/Numera EverThere, ADT, GreatCall** and its FiveStar Responder service with its 2015 fall detection partnership with **BioSensics** and acquisition of **Lively**; **Tunstall**'s entry into the US market with QMedic, and passive fall detection offered by **MobileHelp** or **Biosensics**,

"From connected light bulbs to smart locks, smart home tech is evolving rapidly, which makes "aging in place" for more a reality. The growth potential this year is massive as home automation devices become easier to use – Terry Bradwell, EVP, AARP

Health and Wellness. The risks associated with obesity and lack of exercise only worsen with age. In this year's list: **Quell** for pain relief, **MedMinder** for medication dispensing, and **Thrive365** for pre-diabetes. But some technologies have undergone public questioning – **Fitbit** become the target of a class action suit in January.[22] And cognitive fitness technology efficacy claims have been questioned by the FTC.[23] Online weight loss tools have proven popular – **MyFitnessPal** and its 120 million users were acquired by **UnderArmour** in 2015 and **WeightWatchers** has been on a fitness/workout tech buying spree in 2015. For chronic disease management, vendors like **Medtronic** or **AliveCor** offer systems for tracking chronic diseases like diabetes or congestive heart failure. However, remote patient monitoring technology has not benefited from studies that indicate little difference in outcomes.[24]

"In 2016 we will see expansion of telehealth solutions driven by technology – and expanded scenarios for reimbursement. But remote patient monitoring will continue to be stuck in pilot mode." – David Inns, CEO, GreatCall

Learning and Contribution. In 2006, Joseph Coughlin of MIT's AgeLab applied "Maslow's Hierarchy of Needs" to Aging in Place.[25] This seminal document noted that once the basic needs of communication, safety, and health are addressed, people have both the need and capacity to continue to learn, stay active in and knowledgeable about society, contribute to it through volunteering and continued work, leaving a legacy of stories, not just money, for those who love them. Seniors can sort among online programs and auditable courses found through sites like **SeniorNet.org, Osher Lifelong Learning Institutes, AARP TEK, OATS** or **WorkReimagined.AARP.org**.[26]

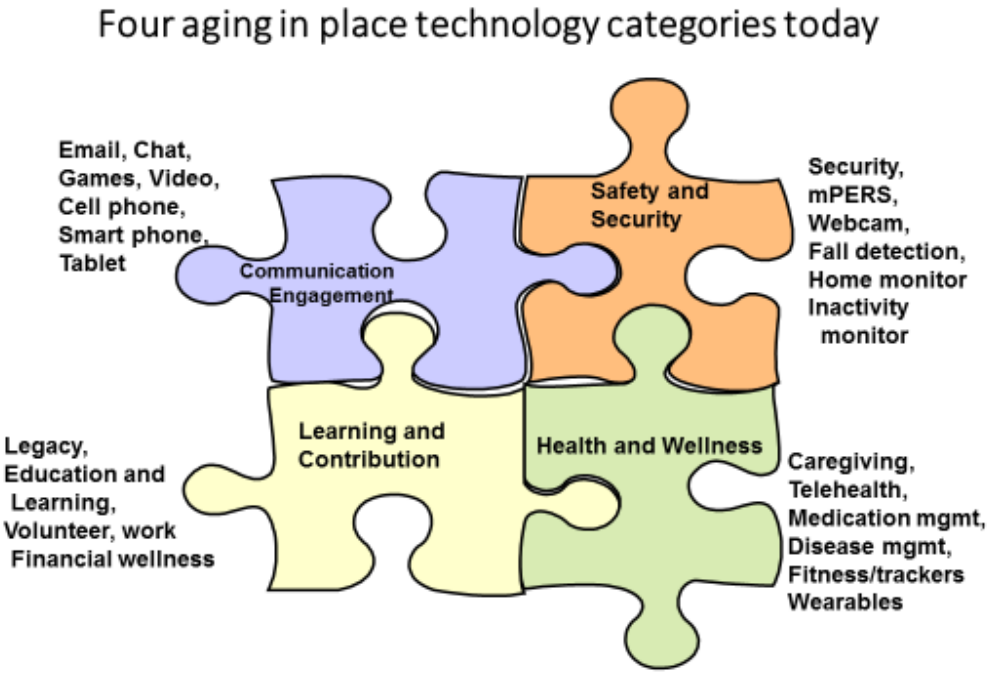


Figure 8 Four categories of technology for older adults

How Is A Complex Market Best Served and Actually Reached?

As this 2015 Pew Survey shows, 39% of the 65+ market is not online (see **Figure 9)**. If that population were the target market user of a technology or service, Facebook, Google and Twitter may not be the way to get their attention. Instead, new entrants must form partnership early – at the pilot stage, with channels that understand the market and can resell, refer, recommend. And the caregivers of older adults are a largely untapped market – recent AARP/Parks projects a "$72 billion market opportunity by 2020, a growth of 13% from 2016. As caregivers, professionals, and families seek alternatives to help better serve older adults at home, what are the requirements for making technologies useful?

Technologies must be well-supported and intuitive. Most people have a laundry list of frustrations with technology. The AARP/Catalyst Fitness tracker survey of people aged 65+ revealed that packaging and device purpose must be (and was not) intuitive.[27] The 2015 failure of Lively's direct-to-consumer approach further underscores the fallacy of a inventor-centric thinking that 'if we create it, they will buy.'[28] Remote configuration and support partners must be a major part of the offering – or doom the user and family to frustration and the product to failure. As the 2014 AARP report, **Challenging Innovators**, noted, focus groups and home trials can reveal greater technology resistance than 'if we build it, would you use' approaches.[29]

Device vendors must be capable of integration and extension. Despite standards initiatives like the Continua Health Alliance, many of today's gadgets still don't communicate – into or out of the home, but especially with each other. So mHealth devices, apps or medication reminders are useful, but touch a tiny aspect of the whole person. To provide valuable integrated solutions, device software will create and use common standards to communicate to caregivers and providers and feed analytics and decision tools.

Costs to consumers must be affordable. As tech becomes more usable and useful, consumers will look for ways to acquire it. This may occur through payers, but is more likely through adult children and family. Higher income consumers will come to realize that in-home bandwidth for their aging parents enable Skype/ webcams as well as chronic disease monitors that provide value, just as essential as the cell phone plans, GPS services, cable TV and many other monthly fees that are now part of their technology vocabulary.

Upgrades must be more seamless than today. Consumers already gravitate towards applications that work with ones they already use, including Gmail, Facebook, FaceTime, YouTube or Skype – regardless of device. In the future, let's hope for upgrade processes less painful than today's 'No Going Back, You Must Upgrade or Else!' approach. Tech vendors will make it easier to use personalized user interfaces (like Amazon and Netflix) that are recognizable across multiple devices, coined in an AARP report as **Design for All**.[30] Perhaps one day a single device like a tablet, smart phone or TV will drive interaction and content, and other devices in the home will simply act as displays.

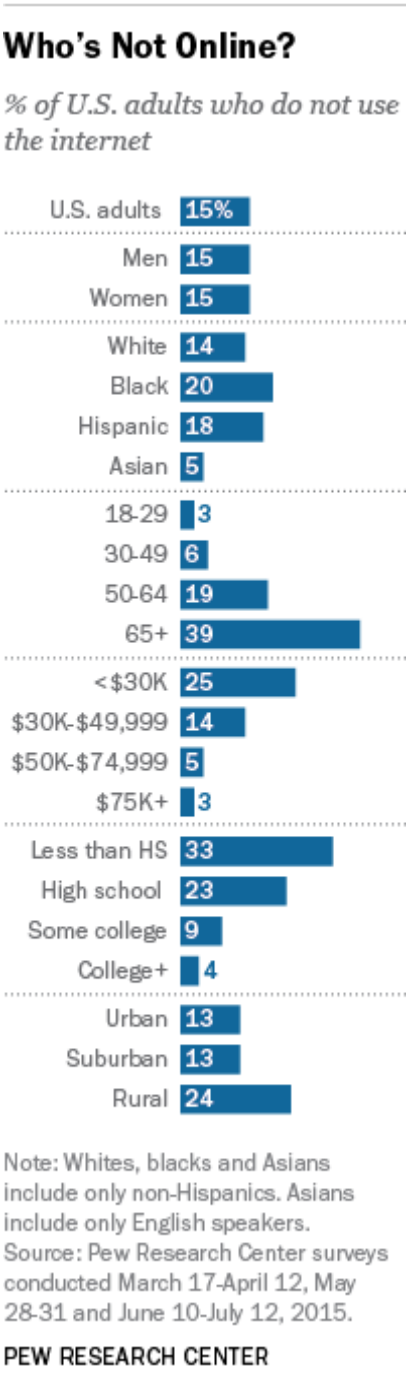


Figure 9 Who is not online?

COMPETING PLATFORMS FOR AGING IN PLACE TECHNOLOGY

Technology platform alternatives are narrowing in 2016 – vendors are deploying among:

Devices connected to smart phones apps grow. In today's market, expect wireless devices to augment or serve both in-home and out-and-about needs. Good market penetration and simple operation is attractive, especially for reminders, alerts, simple Internet search, texting, and even GPS location applications. For baby boomers and their smart phones and tablets, health and safety apps are multiplying for the iPhone **(SugarTracker** and **BPBuddy),** Android **(MyFitnessPal** and **Absolute Fitness**) on the one hand and on the other, safety and emergency apps like **SwiftAlarm! Gold** or **Philips Lifeline Response App**.

Wearables are ubiquitous. Meanwhile wearables like **Microsoft Band**, **Wisewear** emergency jewelry, or any of a myriad of PERS offerings will penetrate the older adult market – by 2019, one out of five boomers/seniors will have some type of wearable on their body, whether it is smart clothing, a pendant or a band on their wrist. Recognizing that combinations of capabilities are becoming more relevant to older adults and families, by 2019, most PERS resellers will offer more subtle mobile devices, including watches, combine the transactional PERS activity with predictive analytics – helping to prevent future injury and the penalty of re-hospitalization.

US Adult Wearable User Penetration, by Age, 2014-2019

% of internet users

	2014	2015	2016	2017	2018	2019
18-24	11.8%	21.9%	35.5%	41.8%	44.9%	46.5%
25-34	19.1%	25.1%	40.0%	46.6%	49.9%	51.6%
35-44	16.8%	23.1%	37.4%	43.8%	47.0%	48.7%
45-54	12.0%	17.1%	25.9%	28.7%	31.0%	33.3%
55-64	7.0%	13.5%	20.8%	23.6%	25.7%	27.8%
65+	3.0%	9.7%	15.1%	17.2%	19.0%	20.7%
Total	**12.2%**	**18.7%**	**29.5%**	**33.9%**	**36.5%**	**38.3%**

Note: individuals who wear accessories or clothing at least once per month that is embedded with electronics, software or sensors with the ability to connect to the internet (via built-in connectivity or tethering) and exchange data with a manufacturer, operator or other connected devices
Source: eMarketer, Oct 2015

198644 www.eMarketer.com

Figure 10

"Devices and apps that do not tie into the broader picture of patient health simply don't make it long term. If I have a device that notes I walked 6 miles, compares to the previous week or year, and helps me address the goals my physician set for exercise related to my pre-diabetes diagnosis, that kind of device has staying power." – Rob Flippo, CEO, MobileHelp

Computer- smartphone- and tablet-based access to the cloud dwindle. The PC, iPad and Android tablets – with unfettered access to the Internet and multiple app formats – offer the broadest device access to help seniors in their homes, whether it's searching for health information from **MayoClinic**, home retrofitting tips from **AARP**, or caregiving tips from **Caring.com**. However, outside of the home their use will increasingly be supplanted by ever-larger (and very portable) smartphones. The closing of physical locations like Social Security offices or bank branches should accelerate urgency of helping offline seniors to move online. Seniors and their families should be cautious, however, as 2015 also turned out to be the worst year yet for identity theft, credit card fraud, and scams.[31]

ADVICE TO VENDORS TODAY: TECH-ENABLED SERVICES, NOT PRODUCTS

Probably the biggest issue that keeps more of today's technology out of the homes of seniors is the difficulty of marketing to both them ("We are not old!") and to their afraid-to-interfere adult children, while selling through knowledgeable channels, appropriate websites AND pricing right for resale and white labeling. Vendors must find:

The right customer – baby boomers and their roles. Direct-to-consumer marketing of products and services takes deep pockets for just the advertising**.** Sometimes to find the field testers and/or early validation of concept they need, companies turn to Kickstarter and Indiegogo for visibility. For example, **GreatCall** did just that with an Indiegogo campaign intended to surface field testers for its new Lively Wearable.[32]

The real need – a service problem solved. Despite market hype, seniors and their adult children will not imagine on their own what to do with sensor networks, web cams, or set top boxes. Someone with expertise needs to be able explain the benefits, for example, of care coordination, when selling to a home health agency. Instead of offering point products out of context, vendors should fit solution descriptions, service provider stories, and senior support processes along the continuum of needed care. This necessitates a thorough grasp of the decision points that spike need and interest (see **Figure 11)**.

Identify the right channel – it's about an ecosystem and indirect selling. The right channel

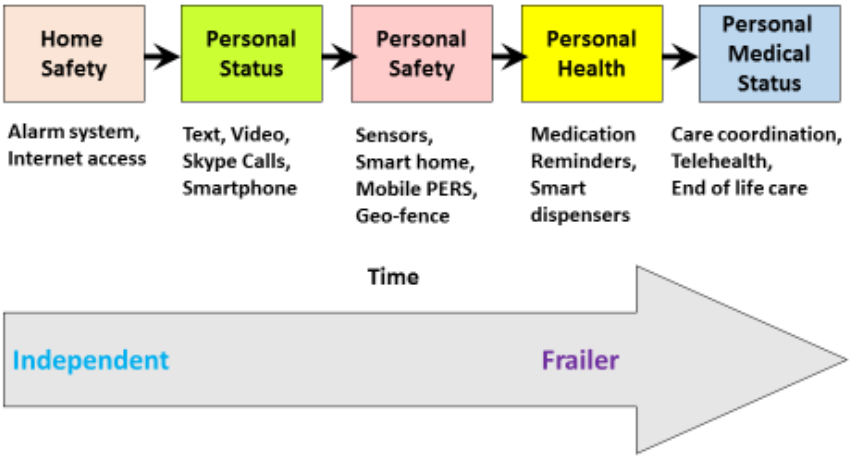


Figure 11

depends on the complexity of the product and the target user. And less is more – remembering that 20% of channel partners typically contribute 80% of revenues. Channel utilization should primarily be indirect – resellers offer reach extension, configuration or geography-specific service needs. For example, PERS vendors may market through multiple regional service providers, but the price varies for local markets/resellers. Others will gravitate to a larger and branded ecosystem enhanced with white-labeled offerings for home care agencies, pharmacies, senior housing organizations or insurance partnerships.

HOW DOES THE AGING IN PLACE TECHNOLOGY MARKET EVOLVE?

The marketplace of products and services today is still fragmented with an ever-shifting cottage industry comprised largely of startups, challenged by both channel complexity and end user resistance. But with fragments assembled into an overall puzzle, this business for boomers and beyond has been estimated by some to grow to $20 billion by 2020 or even $30 billion by 2017.[33] The larger market will be based on growing boomer awareness and their own aging and be strikingly different from today – fueled the growing availability of in-car technology, mobile PERS integration with health status, wearable fitness and health devices, in-home IoT hubs and smart phone apps. And by 2020, the broader technology market will support software-based customizations and voice activation for all people, regardless of age (see **Figure 11)**: [34]

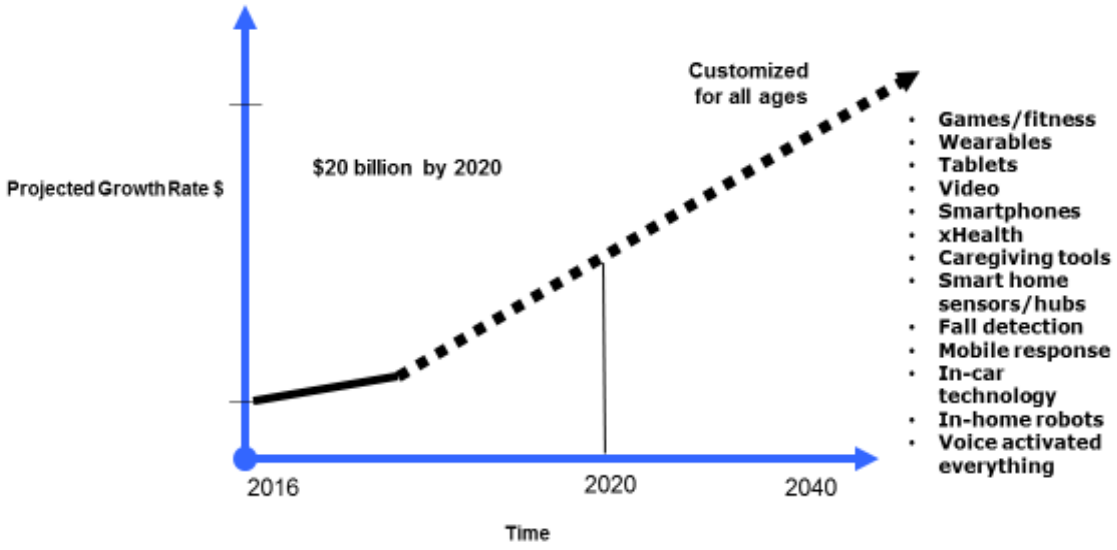


Figure 11 As of 2016 where is the market headed?

What are the key trends to watch in 2016?

As 2016 began, a number of trends that became apparent in 2015 showed staying power into 2016 and likely beyond – experts interviewed agreed that:

Apps are dead, long live services. We are still downloading apps, but the ones with staying power are personal assistants which act as mini service providers – find a car, a ride, a restaurant, a hotel, an airplane – though not necessarily find a caregiver. Survivors may be behavior modification apps, which currently seem to come and go with the tides of marketing hype – stop smoking, eat better, get moving, avoid too much sun, drink more water. Maybe your doctor will prescribe an app – many Silicon Valley startups folk believe (or hope) this will happen – but doctors are not quite convinced.[35]

Niche hardware will fade away – long live software and training. In 2016, will senior-focused hardware survive accelerating technology change? Yes, if it mitigates a health-related condition (hearing or vision loss). Otherwise, we will see software that will make hardware platform choices hidden or irrelevant. Will senior phones and tablets survive or will users choose Easy Mode or custom configurations on a standard phone? Or will service providers select standard software for a commercial device? It's likely that none of the above will last – instead, seniors will be trained in the store or at workshops to learn how to use standard off-the-shelf products.[36]

Tech-enabled home care pressures traditional homecare providers – or does it? Can $80 million of VC investment be wrong – or premature? 2015 saw investors swoon for tech-enabled home care providers.[37] In January, 2016, AARP/Parks Associates sized the caregiving innovation frontier at $279 billion.[38] Both of these together will push self-scrutiny in the home care agencies and franchises, those that rely mostly on people to do background checking, staff to match need with worker, and managers to track work. These other successful home care providers may wonder and fret – is 2016 the year that they need to offer 'tech-enabled' care? What exactly is tech-enabled care now? And what will it be moving forward?

"Health Tech" replaces "Digital Health," begins acknowledging aging. In a recent MobiHealth News webinar, founder Brian Dolan observed that Digital Health as a category is being replaced in 2016 with the term Health Tech. This change reflects the disappearance of investment money for mobile health this-and-that in favor of institutional technology (and budgets) for hospital/health systems, medical practices, and related IT departments. Note that HIMSS does have a Long-term Care Roundtable that focuses on IT for the post-acute and (someday soon) tech-enabled world of Medicare patients.

"Interest in this sector is becoming real not just a curiosity. Investors are talking about their commitment to this segment and starting to make more meaningful investments. While it's still a complex field to navigate, particularly how to distribute to such a large, diverse group, there is far more interest in figuring it out." – Lisa Suennen, Venture Valkyrie

The PERS market remains strong – but changes slowly emerge. Already at least 20% of the total $1.5+ billion (and thirty-year-old) PERS market has become mobile-enabled. The pendant is increasingly likely to be disguised as a piece of jewelry, watch, or wearable. Others are moving past standalone device offerings and linking the pendant to predictive analytics, telehealth, activity tracking and fall detection. Even with their flaws and limitations, smartphone and smart watch are growing threats to this market, so new versions must be capable of extending the features and service connections that have made PERS compelling.

"PERS will be wearable – replacing the incarcerated at-home classic PERS; telehealth will link vital signs to chronic disease solutions. All will combine without wires, including the embarrassing, dangling panic button." – Bill Lyon, Former CEO, Visonic North America

LOOKING AHEAD TO 2017 AND BEYOND

Aging in place provider silos will note their overlap (home design, healthcare, services). In the future, hubs will force associations and/or convergence of aging-related categories. For example, Assistive Technology (part of the healthcare market) overlaps with Healthcare – and both markets lack sharp focus on seniors. Service-based providers – like assisted living, nursing homes, and home care all serve the same senior, but in different and unintegrated ways. And markets that should overlap don't: Home care and geriatric care management groups must accelerate their pace in discovering and in deploying technology that could help family members know what's happening with loved ones. The home automation hub and custom installer market – filled with tech experts – could be an aging in place enabler, but often acts like separate niche market (see **Figure 12).**

New developments and remodels will incorporate aging-in-place technologies. Some new higher end senior housing developers are pre-wiring housing with broadband, security monitors, tablets and motion sensors – in addition to wall backing for grab bars, standard wide doorways, and alternative kitchen counter heights. As boomer housing needs grow, other senior housing options will be upgraded or retrofitted with a must-have tech list. Boomers who remain in their homes will add home networks, web cameras, and voice-activated security for personalized emergency response – and aging in place vendors will leverage them to build more sophisticated and connected applications. To reduce energy use, building codes will mandate environmental sensors, users will expect smartphone-controlled reset of temperature as the home is entered or exited. Automatically lit paths from bed to bath can be enabled with inexpensive nightlights.

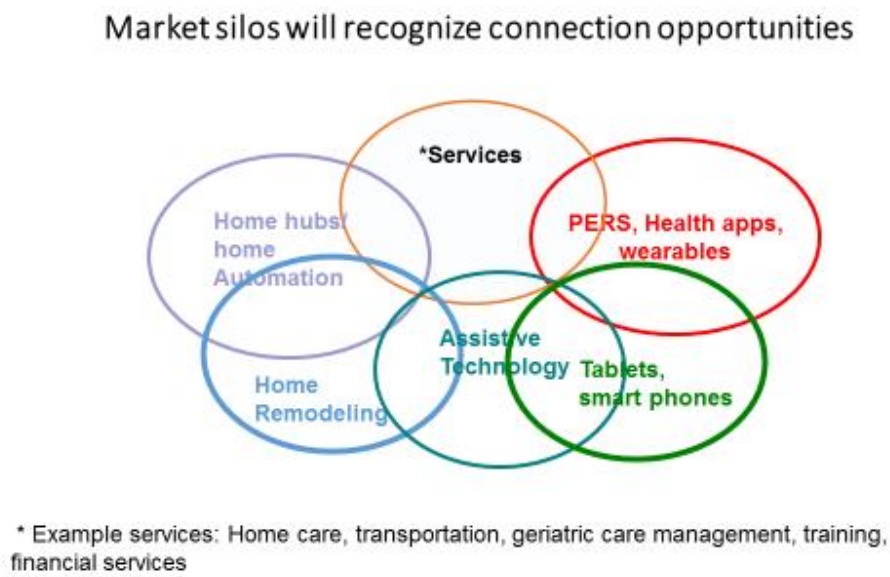


Figure 12

Predictive analytics will become part of the new product introduction lexicon. For technologies that track health, activity, behaviors, emotional status, or any other indicators of wellbeing, offerings will offer to retain **opt-in** information in their own cloud data or that of a partner (like an insurer or healthcare provider). As accuracy of these devices and technologies improves, it will be necessary but insufficient to note that an activity has occurred without placing it in the context of history that is signaling improvement or decline.

"In 2016, we will be able to leverage innovative predictive algorithms to improve our collective ability to keep seniors safe, healthy and connected to their loved ones and communities, while living well at home." – Kimberly O'Loughlin, SVP and GM, Philips Home Monitoring

Standalone offerings will be acquired or disappear. To date one-off innovations produced by well-meaning people ("I designed this for my grandmother) generate press attention, some customers, and typically disappear. Moving forward will be replaced with integrated low-cost solutions. Unique functionality may garner adoption by the most technically adept seniors, but for the majority of the aging population, a consistent underlying platform that is designed for all, not simply for the elderly, will be preferred – and channels of distribution that interact with them will be the preferred sources. Professional caregivers and health providers will begin to use smoothly connected tablet-PC-smart phone platforms to gain visibility, propel solutions into mainstream usage, facilitated by training offered by national efforts like AARPTek.[39] Local integrators, drawn from ex-IT workers, security companies, senior housing, electronics dealers, or remodelers or home care, are the right players to travel the last few feet into the home.

About the Author:

Laurie M. Orlov, a leading tech industry veteran, writer, speaker and elder care advocate, is the founder of **Aging in Place Technology Watch,** a market research firm that provides thought leadership, analysis and guidance about technologies and related services that enable boomers and seniors to remain longer in their home of choice. In addition to her years of technology background and as a leading industry analyst at Forrester Research, Laurie is certified in geriatric care management from the University of Florida, and has served as a long-term care ombudsman in Florida. She is the author of other market reports, including CHCF-sponsored **Baby Steps: Boomers and Mobile Health (2015)**; AARP-sponsored **Challenging Innovators (2014**); **Next Generation Response Systems (2013)**; **Future of Home Care Technology (2012);** and the **Link·age Technology Survey Age 65 to 100 (2011).** She was a member of the Philips Think Tank on Active Aging and speaks regularly on the topic of technology and older adults. Learn more at www.ageinplacetech.com.

About Link·age Connect

Link·age Connect focuses on the aging demographic, a research consultancy with the ability to offer access to this population and their caregivers. We conduct and analyze research in the aging population to help companies capitalize on this rapidly changing demographic, providing distinct benefits to our client. The organization offers ready access to willing research subjects, deep vertical understanding of the market to help clients design programs, experience to provide insights into data collected, ability to move rapidly in deploying a research program and assistance in identifying key influences and decision-makers. Learn more at www.linkageconnect.com.

Aging in Place 2016 Technology Categories and Vendors (Example only vendors)

For inclusion as an example-only technology to facilitate aging in place, the vendor meets two of these criteria (those listed are only examples, not an exhaustive list). Because of the wave of relevant technology announcements during 2015, more startups, including pre-launch, are included than previous versions. In addition, please note that ** entries are new for this publication of the 2016 Market Overview, though they may have been in business prior to its publication. The criteria:

a) Incorporate messaging to and about boomers and/or seniors – or their family or professional caregivers.
b) Is expected to be available across the US, not just in a single region.
c) Addresses one or more categories described in this document.

Category	Sub-category	Purpose	Platform	Contact
Communication and Engagement	Newly released shown with **			
*Amazon Echo***	Cloud-based voice service	Voice-enabled AI access to music, reminders, web	Appliance	Amazon.com
Clarity Life Ensemble	Tablet-telephone	Hearing assistance	Telephone-tablet	Clarityproducts.com
GreatCall Jitterbug Touch3	Smart phone	Added services	Android	GreatCall.com
*Bask Technology***	Remote tech support	For seniors and families (formerly iTOK)	Service	Bask.com
ReSound LiNX	Hearing	Link hearing aid to phone	iPhone	ReSound.com
Breezie	Senior Boomer tablet	7. in, multi-touch	Tablet app	Breezie.com
iPad Air 2	Wi-Fi Tablet	9.7 in, multi- touch	Tablet	Amazon.com
grandPad	Senior tablet	7 in, LTE in USA	Tablet	grandpad.net
*Samsung EasyMode***	Setting – Samsung Galaxy Phones	Simplified start screen	App	AndroidCentral.com
*Big Launcher***	Simplified smartphone app	Large font, low vision and/or seniors	Android	BigLauncher.com
*Comcast Internet Essentials***	Affordable Internet	Pilot for Seniors	ISP	Comcast
*DuckDuckGo***	Search without being tracked	Internet	Search engine	DuckDuckGo.com
Home Safety and Security				
*Philips CareSage***	Predictive Analytics	Combines PERS/Health Status to predict fall risk	Pendant/ analytics	lifelinesys.com
GreatCall 5Star Urgent Response	mPERS	Multiple add-ons	PERS service	GreatCall.com
*GreatCall Lively Wearable***	PERS	Safety wearable	Safety	mylively.com
*UnaliWear***	PERS, health	Voice-activated Wearable	Safety	Unaliwear.com
*Qmedic/Tunstall***	PERS	Notes inactivity	Wearable	Qmedichealth.com
*WiseWear***	Health	Jewelry with emergency alerting	Safety wearable	WiseWear.com
MobileHelp Fall Button	mobile PERS	Includes Honeywell health partnership	Wearable with service	MobileHelp.com
*EverThere Wellness***	Predictive Analytics	Nortek/Numera PERS with activity tracking	Pendant/ analytics	Numera.com
BioSensics	Safety, health	Gait analysis	Multiple sensors	Biosensics.com

Category	Sub-category	Purpose	Platform	Contact
Independa AnyTV Companion	Safety, health	Remote monitoring	Monitor platform	Independa.com
*EarlySense***	Bed exit, vital signs	Predictive Analytics	Sensors	EarlySense.com
*Essence Care @ Home***	Smart home, emergency	Telecare Platform	Monitor platform	Essence.com
*Mybitat***	Safety, health	Remote monitoring	Monitor Platform	Mybitat.com
*SwiftAlarm***	Smartphone Safety App	Safety app	Smartphone App	SwiftAlarm.com
Health and Wellness				
*AliveCor***	Mobile Health	Mobile ECG	Appliance	AliveCor.com
*Quell***	Wearable pain mgmt	Adjustable stimulation intensity	Wearable	QuellRelief.com
PositScience	Cognitive Fitness	Brain fitness programs	PC	Brainhq.com
*Nobo B60***	Hydration band	Tracks too little/too much hydration	Wearable	Nobo.io
*Thrive365***	App for diabetes and pre-diabetes	Portal plus app	Integrates trackers	**Thrive365.com**
*PillPack***	Pharmacy service	Customized reorder		Pillpack.com
Microsoft Band	Fitness tracking device	Wearable on wrist	Email, UV	Microsoft.com
*MedMinder with PillsandBeyond***	Medication management	Consumer	Prefilled Pillbox Internet	Medminder.com
	Medication adherence	Pharma-consumer	Appliance	Adheretech.com
MediSafe	Medication management	Consumer	Appliance	Medisafe.com
MedFolio Wireless pillbox	Medication dispenser	Consumer, dispensing	Appliance	Medfoliopillbox.com
Dementia Care				
Its Never Too Late	Engagement	Personalized content	PC	iN2L.com
*Piper iBeacon***	Tracking	Location tracking	Device	Piper.com
*SingFit***	Engagement	Dementia Music Therapy	Software	Singfit.com
*Linked Senior***	Engagement	Dementia Therapy	Software	LinkedSenior.com
*GPS SmartSole***	Tracking	Location Tracking	Shoe insert	GPSsmartsole.com
Learning and Contribution				
AARP TEK	Train on tech tools	Regional classes	In-person, online	AARP Tek
Grandparents.com	Portal	Discounts	Internet	Grandparents.com

Category	Sub-category	Purpose	Platform	Contact
Stage of Life/Grandparents	Portal	Discounts	Internet	Stageoflife.com
After Steps	End of life documents	Checklist and doc storage	Internet	Aftersteps.com
Ancestry	Legacy	Family tree, history	Internet	Ancestry.com
LifeBio	Legacy	Produce a book based on template	Internet	Lifebio.com
MyHeritage	Legacy	Family tree, history	iOs, Android	MyHeritage.com
FirstStreet Online	Product Catalog	Multiple products	Internet	Firststreetonline.com
CourseTalk	Directory	MOOC reviews/ranking	Internet	Coursetalk.org
SeniorNet.org	Education and Learning	Technology training	Internet	Seniornet.org
*Encore.org***	Education and Learning	Resource to tap skills of mid-life and beyond	Network of resources	Encore.org
RetiredBrains.com	Education and Learning	Directory of online courses	Internet	Retiredbrains.com
*Bluehair Technology Group***	Education and Learning	Senior technology training		Bluehairtech.org
OATS (Older Adult Technology Services)	Education and Learning	Senior Planet Technology Center in NYC	Center/Service	Oats.org
Home Care/ Caregiving Tools				
CareLinx	Find non-agency home care	Family caregivers find/employ caregivers	Portal, directory	CareLinx.com
*Honor***	Find/employ home Care	Home care with staff/family tablet/phone	Tech enabled home care	JoinHonor.com
*Home Hero***	Care plan, find care	For caregivers	Portal	HomeHero.com
Caring.com	Caregiver portal and directory	Family caregivers	Portal, directory	Caring.com
Care.com	Caregiver portal and director	Find care	Portal, directory	Care.com
*Hometeam***	Find/employ home care	Find care	Portal, directory	Hometeam.com
*ClearCare Online***	Care management	For care professionals	Manage work	ClearCareOnline.com
Caremerge	Care management	For care professionals	Manage work	CareMerge.com
*CareSync***	Care coordination	Chronic Care Management	Includes concierge svc	Caresync.com
CareTreeMe	Home Care Management system	For care professionals	Manage work	Caretree.me

Category	Sub-category	Purpose	Platform	Contact
eCaring	Home care Management	For care professionals	Manage work	eCaring.com
*PointClickCare***	Home care Management	For care professionals	Manage work	PointClickCare
Caregiving apps				
*CareAngel***	Caregiving app	Virtual caregiving assistant	App	Careangel.com
Balance: for caregivers	Caregiving coordination	National Alzheimer Center, Inc.	iPad, iPhone	Apple iTunes
Clevermind	Alzheimer's	Consumer, Alzheimer's	iPad	myclevermind.com
*Rise Health Coaching***	Personal Health coaching	Diet, exercise, health personalized coaching	Paid	Rise.com
Healthspek PHR	Personal health record	Opt-in sharing health info with doctors	iPad with iPhone viewer	Healthspek.com
Comfort Zone Check-in	Track Cell phone or wearable device	Alzheimer's Association	iPad, iPhone	Alz.org
Care Partners Mobile	Task organizer	Shared calendar	Multi-device	lifelinesys.com
*Care/Mind***	Care recipient activity	Status & Alerts	Fitbit compatible	Reassureanalytics.com
Personal Caregiver	Caregiver coordination	Medication & refill reminders	iTunes	Personalcaregiver.com
MedCoach	Health and Wellness	GreatCall	Android	GreatCall.com
SingFit for Seniors	Engagement	Music care recipients	iTunes	Singfit.com
CareZone Senior	Care Coordination	Share tasks, manage meds	Android	Carezone.com

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