Loneliness and the aging population

How businesses and governments can address a looming crisis

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Improving how older adults engage with the world

For the aging population, loneliness is more than a state of mind — it is an emerging risk factor that has implications for personal, economic and societal well-being. A range of stakeholders, including business leaders, medical professionals, governments, advocacy groups and social service organizations, has a significant interest in preventing, identifying and addressing the root causes of loneliness. Without countermeasures, older adults face continued detachment from the mainstream, even as their numbers grow. Our newest research explores how organizations in many industries can act to help older adults strengthen their social fabric and reconnect to others.

Introduction

Many of us appreciate the occasional opportunity to disconnect, giving our minds and bodies a chance to recharge against the din of the increasingly noisy world. But when solitude becomes long-term and turns into loneliness, the results can be detrimental and potentially devastating, particularly for older adults.

For many, loneliness arises from unmet needs for social interactions. Representing more than just an unwelcome rip in one's social fabric, it's a precursor to a host of poor medical and social outcomes that have economic ripple effects across families, multiple industries, and society as a whole. Although everyone has a different threshold for the level of social interaction they need, the risk of loneliness as a harbinger for future decline seems unavoidable in later life.

The increase in the aging population is well-known and well-documented. By 2050, it is expected that Japan, Singapore, Germany and Italy will have almost 40 percent or more of their population over the age of 60.[1] Even the United States, Canada, Brazil and the United Kingdom will have approximately 30 percent at this level. With this increase in older citizens comes the potential for an increasing lonely population, wrestling with the need to rebuild and reclaim its social capital, but without the means or wherewithal to do so.

The popular press has recognized the importance of loneliness growing among older adults. Media sources ranging from *The Washington Post, The New York Times,* National Public Radio, *The Japan Times* and *The Guardian* have all recently addressed its impact on society.[2] The topic has relevance not only to individuals and families, but also to medical professionals, corporations, advocacy groups and governments that are affected by its consequences. Now, many diverse stakeholders have the opportunity to help mitigate the impact.

The **hidden costs of loneliness represent a public health conundrum** that can worsen as the older adult population grows

The invisibility of healthy, active older adults in popular culture **fuels a sense of isolation and loss of recognition** as valued society members

Barriers to addressing loneliness can be grouped into two types: **Obstacles to taking action** and **lack of effective solutions**

To better understand the magnitude of this issue, current interventions and ideas for future solutions, we conducted 50 interviews with experts from six countries and representing a variety of disciplines. We gained unique insights from this global group of medical professionals, social workers, academic researchers, technologists, consumer and device manufacturing experts, software startups focused on the aging market, advocacy groups and government officials.

This report focuses on five important questions:

- Why must organizations understand loneliness and aging?
- What precipitates loneliness?
- Why is loneliness so difficult to mitigate?
- How is loneliness in the aging population being alleviated today?
- What are guidelines for future solutions?

Why must organizations understand loneliness and aging?

From our research and discussions, it is becoming increasingly clear that loneliness in older adults places stress on their health, along with the clinical and social infrastructure needed to support them. As John T. Cacioppo and William Patrick state in their book, *Loneliness: Human Nature and the Need for Social Connection*, "…chronic feelings of isolation can drive a cascade of physiological events that actually accelerates the aging process."[3]

Medical literature supports this overall linkage between loneliness in older adults and declining health. Multiple research studies cite poor health outcomes, including:

- 29 percent increased risk of coronary heart disease and 32 percent increased risk of stroke[4]
- 64 percent increase in developing dementia[5]
- 26 percent increased likelihood of death.[6]

Risk factors have the potential to affect a wide swath of the older adult population. One study found 43 percent of the population reported feeling lonely at least some of the time, 32 percent lacking companionship, 25 percent feeling left out and 18 percent feeling isolated at least some of the time.[7]

The health impacts of loneliness are not limited to older adults — they also affect the families and caregivers who spend significant time and attention caring for these individuals (see Figure 1). Loneliness places a heavy burden on caregivers already overwhelmed from trying to fill social gaps and address the medical needs of the older population, with 56 percent of caregivers reporting that their work was affected by their caregiving responsibilities and 22 percent reporting a decline in their own health as a result of caregiving.[8] The costs are substantial and growing — the American Association of Retired Persons (AARP) estimated that in 2013, the value of unpaid family caregiving in the United States was USD 470 billion, up USD 20 billion from 2009.[9]

Figure 1

Four key areas impacted by loneliness in older adults

Negative medical outcomes from chronic age-related illnesses linked to loneliness are expensive to treat, contributing to the growth of overall health costs. Frequent visits by older adults to their physicians for social interaction also strains limited healthcare resources by diverting them from other acute needs. As George Crooks, Medical Director at NHS24 said, “People will somaticize (convert anxiety into physical symptoms), which is their ticket to get in to see the family doctor. They actually don’t have an underlying physical problem — they just want social contact.”

Lastly, the hidden costs of loneliness in the older adult population have economic and social consequences. From businesses with employees struggling as caregivers, communities losing the contribution of older adults in civic activities, to governments trying to manage their overall social care budgets, the lack of social cohesion has ripple effects going far beyond health impacts. In combination, they represent a public health conundrum that has the potential to worsen as the older adult population continues to grow.

"The root of loneliness for most people is some form of loss."

Kevin Mochrie, former Head of Communications, The Silver Line

What precipitates loneliness?

Loneliness in older adults is almost always triggered by some form of loss, whether at a personal and/or societal level (see Figure 2 on page 7). Physical losses, including mobility problems, as well as visual and hearing impairments, can lead to a striking increase in social isolation and diminished social interactions. And over time, many older adults experience the social loss of family and friends to old age or physical distance while seeing their own roles in society reduced or ignored.

Age-related changes affect everyone's visual, sensory, motor and cognitive abilities. After age 65, almost 40 percent of adults will experience an impairment or loss.[10] These disabilities can have a domino effect and a profound impact on social interaction. In discussing hearing loss among older adults, Uwe Hermann, Senior Director of Eriksholm Research Centre notes, "When sound cues are missing, the brain starts to degenerate, so you get into a negative circle…. Hearing loss is known to contribute to loneliness and social isolation."

Loss of mobility and limited transportation options are strong contributors to physical and social isolation. For example, many older adults continue to rely on cars for their daily activities like shopping, errands, appointments, visiting friends and family, and involvement in community activities. The day they give up driving becomes a dreaded milestone, representing a loss of freedom and control which can quickly lead to loneliness and depression.

Social networks can naturally shrink over time, due to a combination of physical distance, illness and death. Many older adults struggle to adjust to these changes and make new connections. Often reluctant to burden their adult children, or living far from family members, they risk becoming "elder orphans."[11]

Many older adults also underestimate the impact of retirement on their social lives and psychological well-being. According to Kevin Mochrie, former Head of Communications at The Silver Line, "People forget just how much of their social network is actually dependent upon their job and their work colleagues." Retirement can represent a double loss — not only in social interaction, but in a person's identity, which is often tightly linked to a past profession.

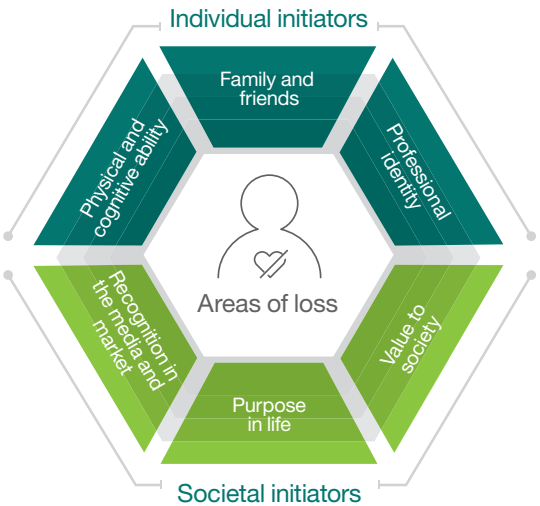
Media and cultural stereotypes can further erode the self-esteem of older adults and skew perceptions about their role in society. Paul Irving, Director of Milken Institute Center for the Future of Aging, said that many view the aging population as "as a wasting asset that's had its utility in society and is now fundamentally a burden." For instance, in advertising or popular media, older adults are often portrayed in ways that highlight deterioration or decline.

In the United States, government records show that adults over age 50 account for 51 percent of all consumer spending.[12] And according to Nielson, that age group also controls 70 percent of the country's wealth.[13] Yet, many companies still believe "…spending, brand preference and the desire to try new things somehow shuts down at 55 years," said Lori Bitter, President of the Business of Aging. In an increasingly media-driven world, this invisibility of healthy active older adults in the popular culture fuels a sense of isolation and loss of recognition as a valued member of society.

In addition to these environmental factors, new studies indicate that there may also be a genetic predisposition to loneliness as well. Researchers at the University of California San Diego (UCSD) School of Medicine and University of Chicago recently conducted a genome-wide association study and found that loneliness has a "modest" genetic component (14 to 27 percent) that also may be linked to depression and neuroticism.[14] Dr. Dilip Jeste, Director of the UCSD Center for Healthy Aging, is leading other studies to identify potential neural biomarkers for loneliness, which may yield new insights on a molecular and biological basis for loneliness and lead to new interventions for those at risk.

Figure 2

Six areas of loss contribute to loneliness in older adults



Why is loneliness so difficult to mitigate?

Loneliness is a multifaceted challenge that requires action from multiple angles for its successful alleviation. Barriers to addressing loneliness can be divided into two key areas: obstacles to taking action and lack of effective solutions (see Figure 3).

Figure 3

Multiple challenges help to explain why loneliness is a persistent and formidable problem

Obstacles to taking action

Loneliness and its connection to various health risks have been highlighted among numerous scientific studies and public media channels. But it remains difficult for the medical and social community to formally act upon due to the inability to efficiently detect its presence. At an individual level, difficulty stems from:

Lack of standard screening application. In the medical and social welfare practice where patient data is individually collected, there is a noticeable lack of consistent collection and/or analysis of psychosocial health components. With the absence of diagnostic tools that fit administrative time and budget constraints, the missing social dimension of a patient's profile results in incomplete screening and missed opportunities. This hinders general practitioners and social workers from detecting whether their patient is at risk for loneliness and suggesting interventions.

Co-morbidity with other health and social conditions. Although statistically independent, loneliness often occurs in correlation with various separate conditions, such as social isolation, depression and poverty. Its frequent co-existence with conditions having similar symptoms and circumstances can further hide it from detection since knowledge overlap in the medical and social sphere is often limited. Even when detected, loneliness is often not recognized as an important health issue deserving immediate attention and action.

Social stigma. Within many cultures, one's independence is highly valued and there's often a negative perception of those who become dependent on others. Older adults, already associated with lost social value, may refuse and deny feelings of loneliness to avoid the sentiment of being a burden on others. As a result, this hesitancy and reluctance to seek support delays loneliness treatment and alleviation.

Rendever: Making travel easier and more accessible

Decline in mobility capability, financial constraint and/or lack of opportunity are common challenges faced by older adults who seek to participate in social events or experience new places. Rendever, a virtual reality experience provider based in Cambridge, Massachusetts, specializes in improving the quality of life of older adults living in senior resident centers experiencing isolation and loneliness from the outside environment. In the comfort of their own living spaces, users can participate in solo or group virtual explorations to places they cannot physically visit. Based on Rendever-administered user surveys using a 1-10 mood scale, older adult facilities using the technology have found a 40 percent increase in resident happiness levels after the virtual reality experience.[15] The ability to "visit" both familiar and new places enables residents and others they encounter to discuss thoughts on common virtual trips, share old memories inspired by recent experiences and feel more connected with each other.

Lack of effective solutions

While there are many efforts underway today to address loneliness, several strategic disconnects remain that deter the design and development of comprehensive solutions. In part, this scarcity of solutions is associated with:

Fragmented and incomplete stakeholder ecosystem. Loneliness is complex, with impacts and consequences that affect stakeholders across the social, medical and economic ecosystem. However, the gaps in understanding its cross-industry implications and the lack of collaboration have resulted in some stakeholders being unaware of their potential roles in addressing it. Scattered efforts by some often fail to leverage each other's insights and perspectives.

Disconnection among operations of multiple-point solutions and interventions. Current solutions and interventions targeting loneliness alleviation in older adults consist of a diverse range of offerings that operate independently of each other. This lack of collaboration limits the opportunity to share and convert data insights into useful actions that can benefit all.

The myth that older adults won't use technology. The perception that older adults will not or are incapable of using technology is a common stereotype that drives the design of today's efforts targeting loneliness alleviation. However, technology oversimplification can introduce unintentional stigma associated with its use. Failure to recognize the importance of personalization and customization in solution design limits user incentive to invest their time and effort in something that does not cater to their specific needs and preferences.

How is loneliness in the aging population being alleviated today?

Like other challenges, there is more than one way to address loneliness among the older adult population. From our analysis of current solutions, we've identified three main intervention levels — individual, community and national — that define how and with whom a solution engages to alleviate loneliness. Within each intervention level and solution also lies a spectrum of technology complexity that ranges from *minimal*, such as communal living arrangements, to *advanced,* such as cognitive analytics.

Individual

Solutions at this level are characterized by designs geared toward improving an individual's personal experience. Such interventions attempted to create emotional attachments when users project their own interpretations onto the product or service. Solutions at the individual level can range from relatively simple personal interactions to complex virtual reality trips (see Rendever example on page 10). Each sparks feelings of connection and bonding felt by older adult users and encourages social interaction among each other to discuss their shared experiences.

Community

Solutions at the community level are characterized by methodologies bringing together groups of people in a social setting. Interventions at this level focus on concepts such as intergenerational living, age-friendly environments and collaborative social platforms. Technology in community-level solutions ranges from the redesign of societal infrastructure to permit greater resource and transportation accessibility for older adults, to the use of websites to encourage knowledge sharing and connection (see Kashiwa example on page 11 and PRISM example on page 12). Online systems facilitate greater social interaction in the community, such as the service-based "time bank" linkAges, where community members can sign up to exchange acts of service with each other.[16]

Kashiwa: A redesign of society

By 2030, one out of three people in Japan is expected to be over the age of 65. To address the emerging need to redefine social norms in Japan's aging society, a social experiment was conducted in Kashiwa to explore the construction of a senior-friendly community where residents can age in place. Elements added to the infrastructure of Kashiwa include workplaces for the elderly, apartment houses that facilitate single living and a communal dining hall shared among all residents. Still underway, Kashiwa's social experiment aims to redesign societies to adapt to the shifting demographic trends in Japan's population.[17]
By including specific aspects that encourage continued inclusion in the older adult population (such as post-retirement work or intergenerational community areas), Kashiwa serves as a societal model that is conducive to healthy aging.

PRISM: Studying how technology affects social well-being in older adults

Traditional aging stereotypes often portray older adults as inept or having difficulty in actively engaging with technology. The Personal Reminder Information and Social Management System (PRISM) was developed at the University of Miami to evaluate and quantify the potential value older adults can gain from technology systems in areas such as social isolation, connectivity and social support.[18] Designed with a user-centered approach that includes online tools supporting social communication, knowledge sharing and leisure activities, the PRISM software was compared against a hard-copy binder equivalent that provided similar information and resources. Researchers conducted a clinical trial involving 300 older adults identified at risk for social isolation. Preliminary results show that the PRISM participants had increases in social support and well-being and decreases in perceived loneliness. They also had increases in positive attitudes towards technology and computer proficiency. This key finding suggests that technology can be beneficial in improving the social quality of life for older adults.[19]

National

Solutions at the national level are characterized by large-scale efforts that target and address loneliness for residents living within the same country border. Solutions studied use existing infrastructure, such as postal systems or telephone landlines, to provide and facilitate interventions on a mass scale. The repurposing of service infrastructure to meet the social needs of older residents showcases the various innovative ways solutions can be scaled up to reach a larger demographic (see Jersey Post example on page 12 and The Silver Line example on page 15).

Call&Check by Jersey Post: Redesigning services provided by post workers

The Call&Check program by Jersey Post, the primary mail provider in Jersey, UK, is a novel use of the postal system and its existing infrastructure. The program supports community health via everyday interactions with local residents.[20] Postal workers can provide daily, weekly or other specified regular friendly visits by request to residents. Workers check on residents' well-being based on a five-question checklist covering personal and social health, such as current mood, medical concerns and social needs. Resulting issues or requests can then be escalated to the appropriate designated party to address, whether family members, general practitioners or other provided contacts. Currently in its pilot phase, Call&Check has about 150 postal workers covering Jersey's 100,000 residents. The augmentation of the postal delivery system with a quick and simple health check is a cost-efficient service redesign that helps connect socially isolated and lonely older residents with the community on a personal level.

What are guidelines for future solutions?

Loneliness in older adults is a relatively new societal issue because of the significant number of people now living longer and the continued dispersion of the extended family. Whereas a person born in 1900 had an average life expectancy of 50, most people in industrialized countries today can expect to live to 80 and beyond, with the "oldest of the old" — those over 85 — growing at the fastest pace.[22] Future solutions will require innovative thinking, disruptive organizational and business models, and the support of new technologies to adapt to the needs of a changing society (see Figure 4 and sidebar, "Solutions to foster greater connection among older adults should incorporate these core principles").

Figure 4

Three facets of future solutions to help address loneliness in older adults

Solutions to foster greater connection among older adults should incorporate these core principles

No one organization can solve this issue on its own. Solutions designed to keep people connected need to engage and integrate many stakeholders, including infrastructure providers, government agencies, healthcare and advocacy organizations.

Customized, relevant content and services are essential. To successfully build and enhance social capital, solutions need to be tailored to the interests of the individual and adapted to their communities.

Personalization takes priority over simplification. Solutions should be able to adapt to the wide variation of technical fluency within the aging community.

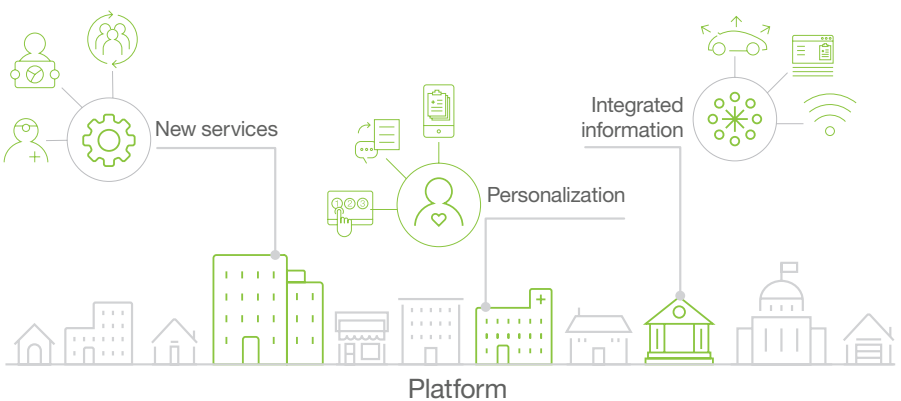
And ultimately, *scalability is the brass ring*. While there are many successful pilots and programs in place today, they operate in relative isolation and require a high degree of customization, which limits their ability to expand. Future solutions need to offer both ease of customization and cost-effective scalability.

Similar to treating physical illness such as heart disease and diabetes, the most effective approach to addressing loneliness entails identification and taking preventative action. Knowing when people are at risk, organizations can proactively help them build and maintain their "social capital," as well as mitigate the physical and social losses that naturally occur as one ages.

Jane Barratt, Secretary General of the International Federation of Ageing raises the question "…the loss of family, loss of role, loss of identity…how can a solution actually respond to such profound losses by introducing, compensating or building out what that person has lost?" In other words, how do we encourage people to start forming new social connections when they begin to lose others? The power of a host of new technologies, such as cognitive and IoT platforms, can enable new services, personalization and integrated information (see Figure 5).

Figure 5

Cognitive-based solutions offer three major benefits



It's going to take a new kind of village

Professor Hiroko Akiyama of the Institute of Gerontology at University of Tokyo said, "We need to redesign the whole society. Because of its existing structure, we don't currently meet the needs of an aging society." There is tremendous potential to engage with new and existing industries, organizations and agencies to create more holistic solutions that better support the aging population and help them maintain social connections. Examples include:

- *Intergenerational living* — Co-housing programs with shared living areas for older adults and younger generations can contribute to the exchange of support and companionship between residents.
- *Post-retirement careers and education opportunities* — New partnerships among employers, universities and government agencies can create new work options, in addition to the opportunity to build new skills and associations.
- *Autonomous transportation* — Older adults may be the most enthusiastic early adopters of self-driving vehicles. This mobility option can restore their independence and re-open social engagement with the community.

Knowledge will power new solutions

From our discussions, many experts noted frustration with the general lack of shared data, which is often locked within organizational or industry silos. They also identified disconnections among caregiving resources that inhibit the development of meaningful interventions and new solutions. Kari Olson, Chief Innovation and Technology Officer, Front Porch said, "We need an aggregator in the middle of all of this to provide meaningful information without requiring participants to be technologists."

The Silver Line: Making sure no lonely voice goes unheard

The Silver Line is a U.K. charity that runs a national helpline whose goals and services are tailored to help support the growing social needs of the aging population.[21] It is the only national free and confidential helpline that is available 24/7, 365 days a year for those aged 60 and older to call in moments of loneliness. It offers callers friendship, information and advice. Other services include weekly friendship calls, facilitated group calls and pen pal letter correspondence. In less than three years since its official launch in 2013, The Silver Line has received over 1.3 million calls from older citizens across the U.K., with approximately 10,000 calls received each week. Around two-thirds of these come overnight and on weekends when other services are unavailable. By addressing the nation's lonely with social support, The Silver Line helps connect callers to local services, and reduces the stigma of loneliness and social isolation.

Building social resilience in later life

Looking to the future, organizations such as the UCSD Center for Healthy Aging, the University of Tokyo, AARP and others are actively studying a new cohort – older adults who have maintained and enhanced their physical, psychological and social health well into older age. Examining the inherent traits and capabilities of these "resilient seniors" could provide a basis for innovative strategies and interventions to help more of us age with vibrant social connections.[23]

Aggregation, analysis and integration of individual, stakeholder, research and other information sources can yield greater insights that lead to enhanced predictive abilities for earlier identification of people at risk, such as detecting physical or psychological changes known to play a role in loneliness. Better and earlier insights also enable organizations to create solutions that lead to more personal and effective connections that are relevant and meaningful to older adults (see page 16 sidebar, "Building social resilience in later life").

Scalability and customization need to coexist

It may seem contradictory, but both scale and customization are essential to delivering solutions that target and mitigate loneliness. An experience that is frictionless and adaptable is key to long-term user engagement. To support this, voice-activated interaction is quickly becoming a design standard.

By leveraging a cognitive platform with standard application program interfaces including natural language, vision recognition, data integration and more, any number of entities such as cities, agencies, hospital networks, telecommunication vendors and others can quickly build cost-effective, community-based solutions with capabilities that are personalized and adaptable to meet individual needs. Partners could easily "plug-in" their services and offerings to create a customized, scalable and extensible experience that can help older adults connect with their loved ones, engage with their community and build new social connections.

Suggested actions

For solution providers:

- Evaluate the branding and positioning of your solutions; avoid aging stereotypes and be sensitive to the stigma that surrounds loneliness.
- Build solutions that are flexible enough to address the different levels of technical fluency within the aging population.
- Leverage the use of cognitive technologies that make it easier to personalize offerings based on an individual's personal preferences; connect individuals to relevant content and interests.
- Expand your partner ecosystem and network to include providers that older adults know and trust.

For business organizations, employers, and educational institutions:

- Provide opportunities for flexible work to leverage the knowledge and expertise of the growing aging population.
- Connect individuals to lifelong learning experiences and opportunities, enabling them to be intellectually engaged and to remain vital in the workplace as they age.
- Establish volunteer opportunities that benefit both retirees/older adults and society as a whole. Learn what needs exist and target volunteer demographics to create mutually beneficial interactions.
- Extend alumni outreach to allow individuals to maintain connections once they have left the organization.

For government agencies, healthcare providers and advocacy groups:

- Work together to incorporate loneliness criteria into routine medical screenings and social outreach programs.
- Investigate the use of cognitive systems that could aggregate data, connect organizations and effectively match and manage individual social and medical needs to programs and resources within the community.
- Address the need for more flexible retirement programs that encourage individuals to remain in the workforce.
- Consider how existing network infrastructures (for example, postal systems, emergency responders) could be leveraged to identify and mitigate loneliness in the aging population.

Is your organization or community ready to meet the challenges and needs of an aging population?

How is loneliness perceived and how does it affect your older adult population, market or audience? How could addressing this issue reduce cost, improve quality of life, open new markets and opportunities and create enrichment for all?

In what ways can you actively engage with older adults and provide them with opportunities to connect or reconnect with others (such as social activities, volunteer opportunities, post-retirement employment and continued learning)?

What existing infrastructure(s) or organizations can be engaged to help older adults build and enhance their social connections?

How are you looking for technologies and platforms to help you aggregate data to build personalized solutions, services or products that better meet the needs and preferences of your aging employees, customers or residents?

For more information

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Related IBM publications

"Outthink Aging: Explore the challenges and opportunities created by an aging society." IBM in collaboration with Consumer Technology Association Foundation. August 2016. ibm.com/able/aging

"Keeping patients at the center: Healthcare rallies for blockchains." IBM Institute for Business Value. December 2016. ibm.biz/blockchainhealth

"Beyond listening: Shifting focus to the business of social." IBM Institute for Business Value. October 2015. ibm.biz/thebusinessofsocial

Acknowledgments

The project team thanks the following people for their contributions to this executive report:

Hiroko Akiyama, Professor, Institute of Gerontology, University of Tokyo
Stuart Arnott, Founder, Mindings
Marion Ball, Senior Advisor, Healthcare Informatics Center for Computational Health, IBM Research
Jane Barratt, Secretary General, International Federation on Ageing
Margaret Beier, Associate Professor, Rice University – Department of Psychology
Lori Bitter, President, The Business of Aging
Andrew Butler, Elder & Volunteer Program Manager, Little Brothers – Friends of the Elderly (San Francisco)
Kenneth Covinsky, Clinician-Researcher, University of California San Francisco School of Medicine
George Crooks, Medical Director, NHS24
Sara Czaja, Scientific Director, Center on Aging at the University of Miami
Joe Dickinson, Call&Check, Jersey Post
Hans Erik Henriksen, CEO, Healthcare DENMARK
Steve Ewell, Executive Director, Consumer Technology Association Foundation
Carol Fenster, Founder and CEO, Baby Abuelita Productions LLC
Teresa Ferguson, Executive Director, AustinUP
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Thomas Goetz, Co-founder and CEO, Iodine
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Martin Kienzle, Electronics Industry Lead, IBM Research
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Dhruv Khullar, Resident Physician, Massachusetts General Hospital
Dennis Lally, Co-Founder and CEO, Rendever Health
James Lubben, Director, University Institute on Aging at Boston College
Cathy Michalec, Executive Director, Little Brothers – Friends of the Elderly (San Francisco)
Kevin Mochrie, former Head of Communication, Silver Line
Michael Muller, Research Staff Member, IBM Research
Jan Mutchler, Professor, University of Massachusetts – Department of Gerontology
Kari Olson, Chief Innovation and Technology Officer, Front Porch
Davis Park, Executive Director, Front Porch Center for Innovation and Wellbeing
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Charlotte Yeh, Chief Medical Officer, AARP Services

Notes and sources

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Produced in the United States of America
May 2017

GBE03834USEN-01