



Research Insights

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Loneliness and aging

Navigating how business
and government can address
an enduring crisis

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Key takeaways

Loneliness in the face of a crisis

For any age, loneliness is more than a state of mind—it's a risk factor that has implications for personal, economic and societal well-being. And during a crisis such as the COVID-19 pandemic where governments implement self-isolation and social distancing guidance, the issue of loneliness will be further exacerbated.

What's to be done?

The last few years have seen considerable efforts being put into addressing this issue, including the appointment of the world's first minister for loneliness in the UK. Experts in aging that we recently interviewed confirm that these efforts are paying off with stakeholders, from governments to advocacy groups, crisis-ready and rapidly ramping up support for the most vulnerable in our society.

Technology complements face-to-face solutions

The COVID-19 pandemic only heightened the need for technology as a key part of the support mechanisms. Technology platforms can be used to match volunteers to help older adults experiencing loneliness. Data can combine with the professional and lived experience of retired individuals in customized and personalized solutions that help combat loneliness and isolation with interaction and inclusion. And technology can help deliver these solutions at scale.

Social distancing escalates the spread of loneliness

Since the launch of our original version of this report, we have continued our discussions with experts, including Campaign to End Loneliness.¹ This group is among many that, in light of the COVID-19 pandemic, are offering some specific advice on keeping engaged with friends, family and neighbors.

The theme of our original research centered on keeping older individuals better connected with their communities and each other. But now, in early 2020, the same threat of isolation and loneliness looms for a wide swath of the world's population. It stems from the sudden, widespread need for unprecedented physical and social distancing—even quarantines—all intended to slow the near-term transmission of a disease for the greater good of society.

In times of uncertainty, such as the COVID-19 pandemic, loneliness, becomes almost ubiquitous, especially when connections unexpectedly need to be virtual, rather than physical. Potential sources of support for those of any age who now feel isolated are of necessity, technology centered.

So, for the benefit of all age groups, we revisit those earlier truths along with new ideas as together, we battle loneliness on a larger scale and seek to keep mitigating it in the future.

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.



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**

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. According to recent United Nations data, by 2050, one in six people in the world will be over age 65 (16 percent), up from one in 11 in 2019 (9 percent). At that time, one in four persons living in Europe and Northern America could be aged 65 or over. And the number of persons aged 80 years or over is projected to triple, from 143 million in 2019 to 426 million in 2050.² 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.

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, and *The Guardian* have all recently addressed its impact on society.³ 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. Indeed, in January 2018, the UK appointed the world's first Minister for Loneliness.⁴

Now, many diverse stakeholders have the opportunity to help mitigate the impact.

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.

Potential sources of support for those of any age who now feel isolated are technology-centered.

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.”⁵

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 stroke⁶
- 64 percent increase in developing dementia⁷
- 26 percent increased mortality (the likelihood of death over a given time.)⁸

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.⁹

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).

Figure 1

Four key areas impacted by loneliness in older adults



Individual

Lonely individuals have increased physical and cognitive health risks that can decrease quality of life



Caregiver

Caregivers provide formal and informal support to older adults but will soon be outnumbered and unable to meet the needs of the growing demographic shift



Medical

Health systems experience pressure on limited resources due to high influx of individuals with physical and somaticized health conditions linked to loneliness



Public and societal

Older adults are treated as an invisible population and whose neglect decreases the overall potential of society

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

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.¹⁰

And this is before any potential impacts from the COVID-19 pandemic. 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 2009.¹¹

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—primarily for social interaction and not medical needs—also strains limited healthcare resources by diverting them from other patients' acute needs. As George Crooks, Chief Executive of the Digital Health and Care Institute in Scotland, 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."

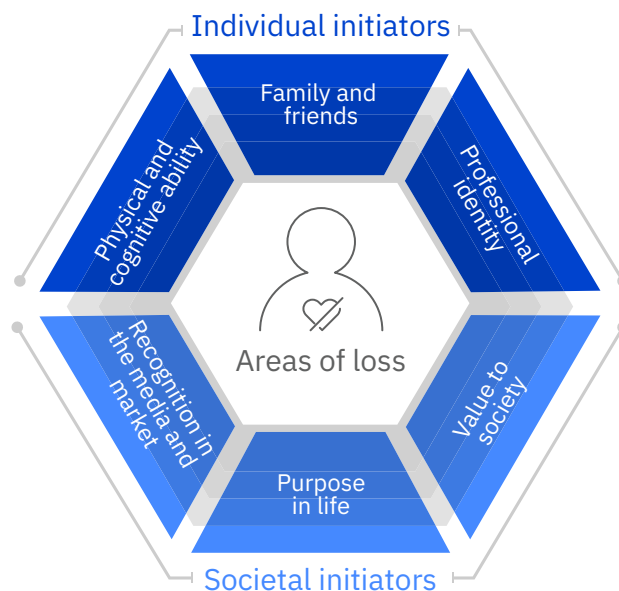
Lastly, the hidden costs of loneliness in the older adult population have economic and social consequences. From businesses with employees struggling as caregivers, communities losing the contribution of older adults in civic activities, to governments trying to manage their overall social care budgets, 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.

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). 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.

Figure 2

Six areas of loss contribute to loneliness in older adults



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.¹² 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."¹³

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, Chairman 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 US, government records show that adults over age 50 account for 51 percent of all consumer spending.¹⁴ And according to Nielson, that age group also controls 70 percent of the country's wealth.¹⁵ 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.¹⁶ 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.

The COVID-19 pandemic poses a further challenge to addressing loneliness—social distancing.

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).

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:

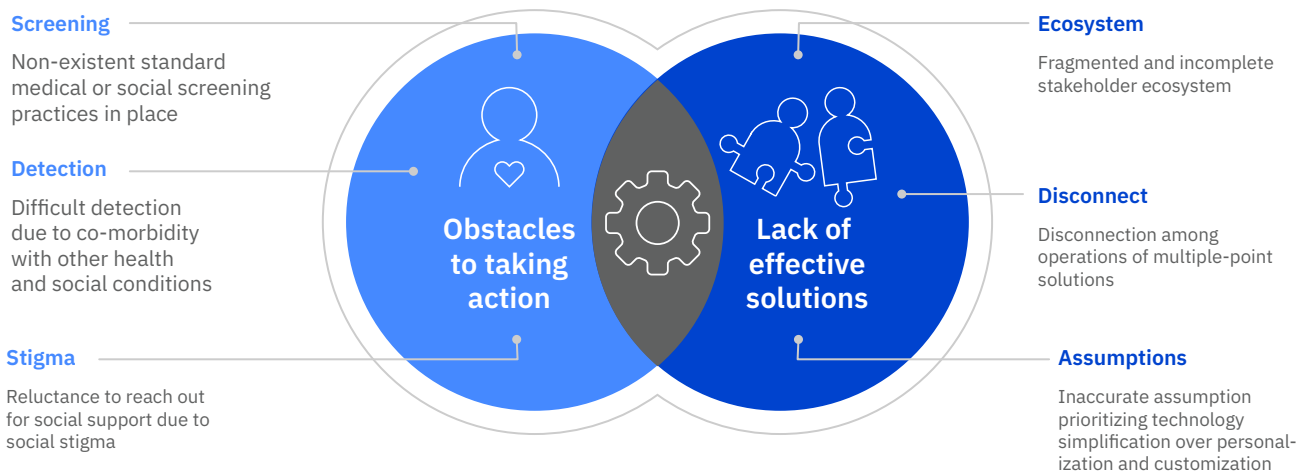
Lack of standard screening application. In the medical and social welfare practice where patient data is individually collected, there is a noticeable lack of consistent

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.

Figure 3

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



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.

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.

Call & Check: Redesigning services provided by postal workers

UK-based Call & Check is a digital platform supporting community health and social care. It uses the national postal services to cover a population of around 105,000, with the aim of keeping people in their homes, as opposed to other care facilities, for as long as possible.¹⁷

It's a system for people who are isolated at home, whose only regular interaction is with the local person delivering their mail. The postal worker asks a series of simple questions and the answers appear in real-time on a dashboard. Families can have permission granted by the individual to review the dashboard. Packages, such as groceries and prescription deliveries, can be added.

During the pandemic, Call & Check is helping older adults who are self-isolating or social distancing. Rather than the postal service, the telephone is the interface with perhaps two virtual visits a day. And the service is as much for the caregivers as the clients since the get data to verify the wellness of their isolated relative. There is an app that caregivers can use to see the records once necessary permissions are obtained.

Many experts noted frustration with the general lack of shared data, which is often locked within organizational or industry silos.

University College London and IBM Watson: Reducing isolation during the COVID-19 pandemic

As part of University College London's Industry Exchange Network, students are developing a 3D Unity engine connected to IBM Watson technology on immersive social experiences. The Franklin Immersive Social Engagement (FISE) Project conceived of by IBM Senior Inventor, John McNamara, has been designed to be used in a range of social integration applications to help those living alone, like our elderly, feel less socially isolated.

The platform is the first of several targeting readily available consumer hardware from entry level Android and iOS tablets all the way through to Virtual Reality (VR) systems. The first proof of concept simulates socially engaging 3D scenes, providing those who feel isolated with the opportunity to create a social environment where they can connect, play and talk to their family members and friends. Examples of the simulations include connecting with others in a park, a buzzing street, and a restaurant where those vulnerable to the impact of social isolation—such as the elderly—can connect safely with family and friends while the challenges of COVID-19 continue.¹⁸

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 University College London and IBM Watson example). 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 and VOICE examples). Online systems facilitate greater social interaction in the community, such as OnHand, an "Uber for volunteers" set up by leading UK charities to match requests for help and support from elderly or their caregivers.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 The Silver Line example on page 12).

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.²⁰ 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, “Insight: Principles to foster greater connection among older adults”).

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.

Kashiwa: A redesign of society

By 2030, one out of three people in Japan is expected to be over the age of 65. This fact underlies the emerging need to redefine social norms in its aging society.

A social experiment was conducted in Kashiwa, Japan 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 Japan’s shifting demographic trends.²¹ 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.

VOICE: Professionals give back

Valuing Our Experience (VOICE) is an international network of “innovation-ready citizens” based at the UK National Innovation Centre for Ageing Intelligence (NICA) in Newcastle Upon Tyne.²² Funded in 2010, VOICE harnesses the professional and lived experience of older people, identifying unmet needs and wants, priorities, market gaps, opportunities, and barriers.

Its unique system of digital and physical engagement works seamlessly to gather intelligence and insights from end-users and their stakeholders, as well as involving them to proactively combat loneliness and isolation with interaction and inclusion. For example, VOICE enables retired architects to bring a lifetime of professional and lived experience to designing age-friendly spaces, homes and communities; retired designers working on consumer products, or carers developing new technology to support older relatives.

VOICE is a core component of the Ageing Intelligence™ approach of NICA which aims to leverage the experience and expertise of older adults while harnessing big data. It has worked in hundreds of engagements with businesses in all sectors and across different countries. The network enables the design and the go-to-market of products and services which people need—and importantly, aspire to—so they can live better, healthier, purposeful lives.

Insight: Principles to foster greater connection among older adults

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

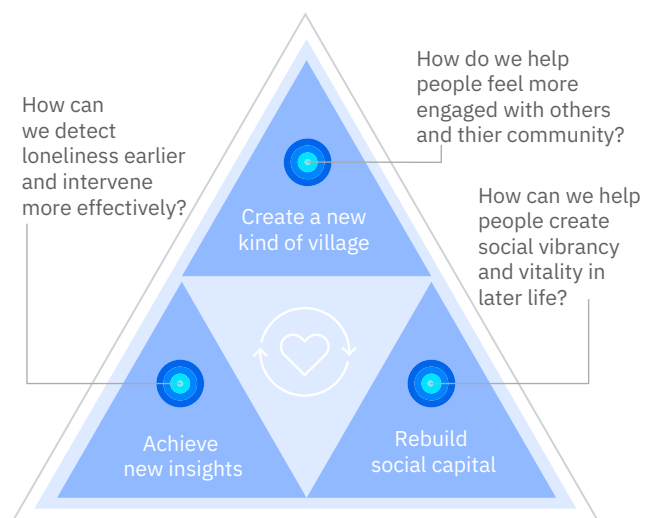
Customized, relevant content and services are essential. To successfully build and enhance social capital, tailor solutions to the interests of the individual and align them with communities.

Personalization takes priority over simplification. Accommodate the wide variation of technical fluency within the aging community.

Scalability is the brass ring. While many successful pilots and programs exist, they operate in relative isolation and require such extensive customization that their ability to expand is limited. Future solutions need both ease of customization and cost-effective scalability.

Figure 4

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



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).

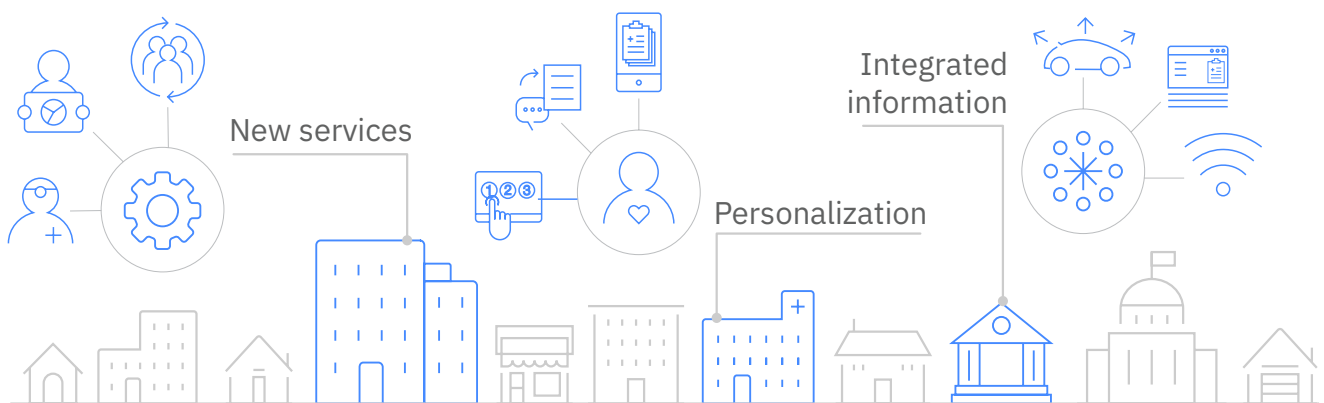
It’s going to take a new kind of village

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.

Building social capital is equally as important for the older adult as preparing finances for retirement.

Figure 5

Cognitive-based solutions offer three major benefits



Examples include:

- *Intergenerational living*—Co-housing programs with shared living areas and home sharing schemes such as Nesterly can contribute to the exchange of support and companionship between older adults and younger generations.²³
- *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.”

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

The Silver Line: Making sure no lonely voice goes unheard

The Silver Line is a UK charity that runs a national helpline whose goals and services are tailored to help support the growing social needs of the aging population.²⁴ 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.

Since its official launch in 2013, The Silver Line has received more than 2.5 million calls from older citizens across the UK—approximately 10,000 calls per week. Around two-thirds of these come overnight and on weekends, when other services are unavailable.

The Silver Line helps connect the nation’s lonely adults to local services, and reduces the stigma of social isolation. And when face-to-face services may not be available, such in the case of the COVID-19 pandemic, a phone call that is always answered can help older adults feel less cut off, acknowledged, and better informed.

Insight: 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.²⁵

personal and effective connections that are relevant and meaningful to older adults (see sidebar, “Insight: 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.

Action guide

Loneliness and aging

1. For solution providers:

- Evaluate the branding and positioning of your solutions. Avoid stereotypes about aging and be sensitive to the stigma that surrounds loneliness.
- Build solutions that flexibly address the different levels of technical fluency within the aging population.
- Apply cognitive technologies to more easily personalize offerings based on an individual's personal preferences. Connect individuals to relevant content and interests.
- Expand your partner ecosystem to include providers that older adults know and trust.

2. For business organizations, employers, and educational institutions:

- Provide opportunities for flexible work to tap into the expertise of the burgeoning population of older people.
- Connect individuals to lifelong learning experiences and opportunities. Enable their intellectual engagement so they remain vital in the workplace.
- Establish volunteer opportunities that benefit retirees, older adults and society as a whole. Learn about existing needs and target volunteer demographics to create mutually beneficial interactions.
- Extend alumni outreach to maintain connections after employees leave your workforce.

3. For government agencies, healthcare providers and advocacy groups:

- Work together to assess loneliness criteria during routine medical screenings and social outreach programs.
- Investigate the use of cognitive systems that can aggregate data, then connect organizations to match and manage individual social and medical needs to pertinent community programs and resources.
- Establish more flexible retirement programs that encourage individuals to remain in the workforce.
- Consider how existing network infrastructures (for example, postal systems and emergency responder networks) could help mitigate loneliness in our 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?

About the authors



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Professor Nicola Palmarini is the Director of UK's National Innovation Centre for Ageing. Before that, he was research manager at the MIT-IBM Watson AI Lab, an academic-industry partnership for the responsible advancement of artificial intelligence, and head of the AI for Healthy Aging team in IBM Research. Nicola is a researcher, teacher and writer focusing on the impact of technologies and their application in the society at large scale, and in the life of aging population. He holds a decade of experience in bridging academic and industrial research with real-world applications to deliver return-on-society and return-on-business with a specific focus on longevity and the coming effects and opportunities of the demographic revolution. He was solution architect for aging in place and ambient assisted living solutions and led the team of a first-of-a-kind IBM project for the Aging Population in the city of Bolzano, Italy in 2010.



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"How digital therapy benefits patients, providers, and the health ecosystem—Evidence-based, personalized treatment can increase engagement and improve outcomes." IBM Institute for Business Value. April 2019. <https://ibm.co/digital-therapy>

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Marc Wortmann, Executive Director, Alzheimer's Disease International

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