

Investing for the longevity dividend

Realizing an engaged
aging strategy



Building a better
working world

We need to help society change from a mindset and behavior of disease management to disease prevention.

– Pamela Spence

EY Global Life Sciences Industry Leader and organizer of EY's Engaged Aging initiative





In 1913, the average global life expectancy was 34 years; in 2001, it was almost 67.¹ Despite a growing array of tools and technologies designed to stretch our life span and connect and enhance how individuals age, the current aging narrative remains unchanged. The characterization of those later years as a period of retirement and slow, inexorable decline has prevented us from having the needed conversations about living a life of purpose in these later years.

There is a critical need to confront - and change - this narrative. This insight was one of several to emerge from a May 2017 event, the Engaged Aging Summit, convened by EY to actively stimulate and shape the larger global debate about healthy aging and help companies build engaged aging strategies. "We need to help society change from a mindset and behavior of disease management to disease prevention," said Pamela Spence, EY Global Life Sciences Industry Leader and organizer of EY's Engaged Aging initiative.

New business opportunities

Today, roughly 10% of the global population is 60 or older; over the next four decades that percentage is expected to increase to 25%.² As discussed in the EY paper, "How will we disrupt aging before aging disrupts economic growth?" this demographic shift requires investment and the development of a new social contract to fully realize the potential of this increasingly prominent life stage. Indeed, Baroness Sally Greengross, CEO of the International Longevity Centre-UK and a member of Britain's House of Lords, reminded Engaged Aging Summit participants that even much lauded institutions like the UK's National Health Service were designed to provide care for a different demographic with very different health needs.

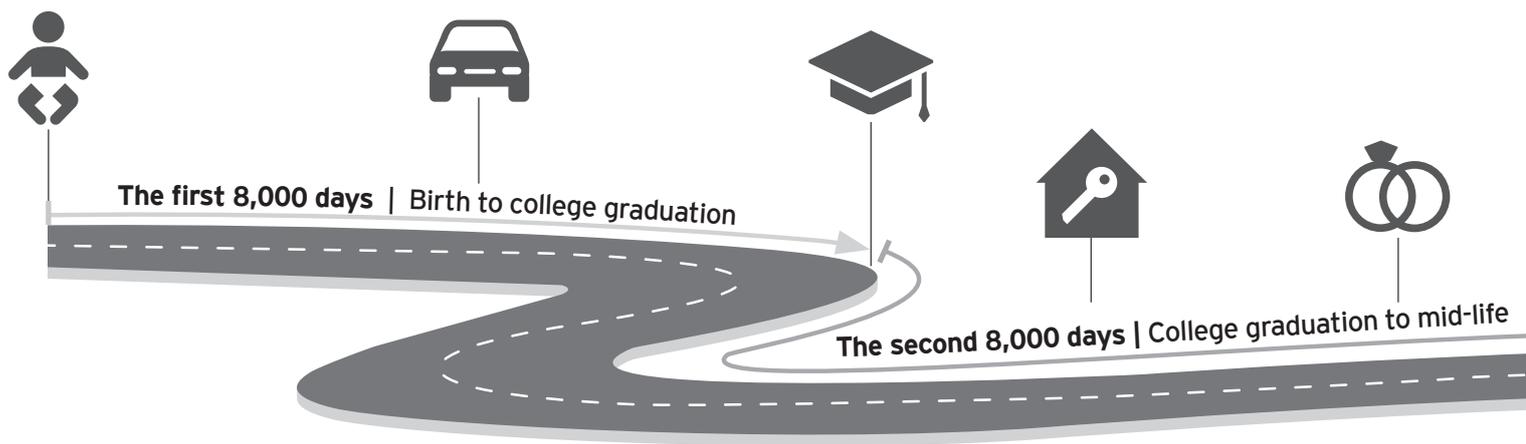
"We haven't come to terms with how technologies can improve care and wellness for our elderly. We have a window of opportunity for investments, but it is closing fast," she said. Indeed, absent that investment, the global "we" is losing out on an important and untapped resource, what Joseph Coughlin, Director of MIT AgeLab, calls "our own longevity dividend."

Coughlin, Greengross and others believe it is time to rethink the traditional life arc: education (from birth to college), early career (college graduation to mid-life), later career (mid-life to retirement) and retirement (retirement to end of life). As Coughlin points out, each of these stages is about the same length of time - roughly 8,000 days (or approximately 22 years).³

While there is a clearly defined narrative - and numerous products and solutions - for the early development, education and working phases, fun, engaging opportunities for the period between retirement and the end of life are lacking (see Figure 1). This need for services aimed at seniors spans far beyond traditional retirement planning where the "happy retiree, perennially tanned and youthful, is sometimes mixed with equally happy grandchildren, at a resort or on a theme cruise."⁴



Figure 1: The 8k "walk of life"



To seize the upsides of aging, businesses and communities must jettison preconceived ideas about aging and develop engaging solutions that optimize individuals' wellness regardless of personal health status.

To be most effective, these services will be technology-independent, community-driven and focused on the whole person. In the short term, these aging solutions will be more heavily weighted toward helping individuals and caregivers manage complex, chronic diseases. Longer term, there is an opportunity to advance investments in precision medicine that will one day lead to precision health. Such offerings will promote preventive interventions long before any signs of disease manifest.

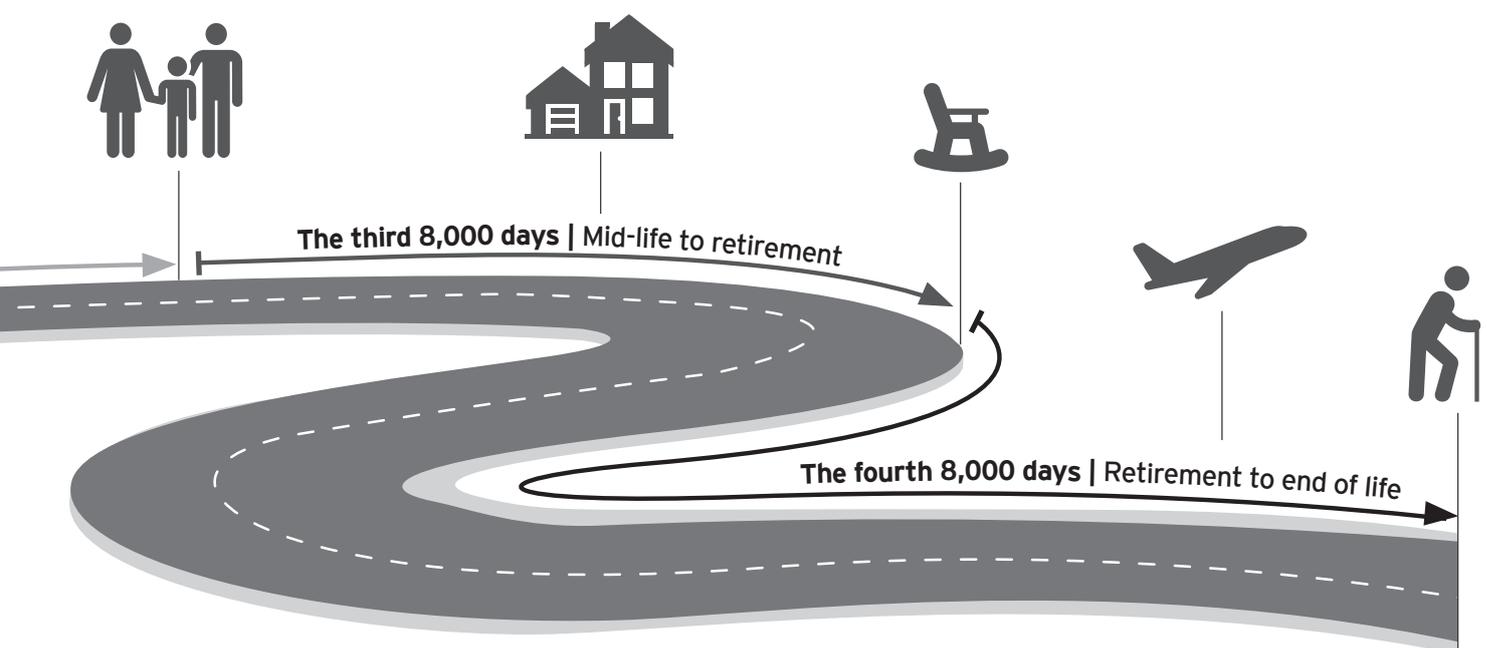
This shift to precision health will spark changes to the businesses of both health delivery and life sciences companies. Life sciences companies, in particular, will need to consider committing greater resources to the creation of beyond-the-product services that accelerate efficacy as a first step. Going forward, they will also need to weigh the strategic merits of expanding these services to promote overall wellness.

Delivering medical care to optimize physical and cognitive wellness will be an important component of any overarching solution, but

ultimately only a piece of a larger offering. What the marketplace most needs are platforms that simultaneously enable solutions for all aspects of health: physical, social and financial. To date, solutions for personalized financial and social wellness have been lacking.

To be effective, these offerings must break down existing siloes between health care and social care to create more holistic solutions that, historically at least, have been funded by different organizations or separate branches of the government. New incentives that encourage insurance companies and physician groups to invest in the creation of effortless health delivery infrastructure will be a key enabler.

It will also be necessary to combine multiple tools developed by multiple stakeholders into a single fluid network of services. Businesses, governments and non-governmental organizations that partner to create these integrated healthy aging offerings will tap into a positive feedback loop that pays multiple dividends, including providing improved wellness for seniors and their caregivers. As a result, there will be both new and increased revenue opportunities that allow companies to move beyond seizing the upsides of aging to realizing actual benefits.



Source: EY rendition of material developed by Joseph Coughlin, Director, MIT AgeLab

Most of today's health and fitness solutions are designed with active young people in mind. The exclusive focus on youth is shortsighted. Today's millennial is tomorrow's senior; interventions adopted early on – for instance, weight loss to avoid childhood obesity – can have profound lifelong consequences for an individual's health status.

All individuals have their own aging story. Holistic solutions that emphasize optimal performance as a path to lifelong wellness regardless of chronological age reposition aging from a condition of debilitation to one of empowerment – regardless of where individuals fall on the health spectrum. "That's a message many more individuals are open to," says Colin Milner, CEO of the International Council on Active Aging.

Because of this, emerging solutions should recast healthy aging from a difficult-to-reach moonshot to a state every individual could attain via stepwise changes in behavior and mindset. Individually, each of these small steps might only have an incremental benefit; taken together, however, those tiny changes could result in major

breakthroughs in function across the social, material, physical and cognitive dimensions of wellness.

By rewarding incremental improvements and demonstrating to users an obvious near-term benefit, technology developers can purposefully incorporate behavioral science into their designs. Such features could promote sustained behavior change over a lifetime, despite our built-in tendency to choose more immediate rewards over future gains, even when, logically, the future gain is greater.

Advances in gene sequencing, computational biology and analytics have brought us nearer to precision medicine and the delivery of the right drug to the right individual at the right time. As the scientific understanding of the aging process grows and it becomes possible to integrate clinical, behavioral and environmental data in real time, precision medicine's boundaries will expand. Indeed, increasing investment in precision medicine today will yield real future benefits: it will help enable the creation of precision health services that are preventive and predictive.

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These precision health approaches are most likely to be successful if they follow four core principles:

1 The right platform for the person – it's really tool agnostic

As noted, to promote lasting behavior change, the technology must work for the end user. Thus, how individuals access and respond to a given technology, whether it is artificial intelligence (AI) or an Internet of Things-enabled device, matters as much - if not more - than what the tool actually does. Increasingly, that means combining a suite of technologies into a common platform that consumers can use in multiple ways via a single interface.

Moreover, these solutions must link to the larger purpose-driven “why” discussed in “How can new partnerships close the gap between healthy aging and growing old?” Only by understanding the parts of life that are meaningful to an individual – whether it is to dance at a grandson’s wedding, hike nearby nature trails, practice daily tai chi or develop a new hobby such as digital photography or woodworking – can companies help people adopt healthier behaviors that persist over time.

Case studies from the consumer product space provide compelling examples of person-centric platform solutions. For example, Google’s Nest combines research from AI, psychology and neuroscience to create a smart home thermostat that is both easy to use and energy efficient. According to Yoky Matsuoka, Chief Technology Officer of Nest, the device to date has saved roughly 1.3 billion kilowatts of energy, which is equivalent to the power required to light all homes in New York City for four years.

Amazon’s virtual assistant Alexa and Lyft’s mobility platform are two other examples worth noting. Neither was designed specifically to serve a senior population. Yet both are flexible enough to accommodate emerging needs: voice-activated services for seniors with limited vision and dexterity in the case of Alexa; transportation to non-emergent health care appointments in the case of Lyft. In the same way that Tesla’s electric vehicles have redefined the automotive space because of cool, customer-centric designs, similarly original person-centered platforms can change current perceptions of aging.



2 Flexibility and personalization are paramount

To promote lasting behavior change, solutions need to be flexible enough to be customized to individual needs. Solutions for seniors in Singapore will be different from solutions for millennials in London, for instance. That's one reason IBM and Apple thought carefully about where to deploy their digital Watch-Over service, which connects seniors to loved ones via cloud-connected tablets, with postal workers serving as regular points of contact to assist with technological questions.⁶

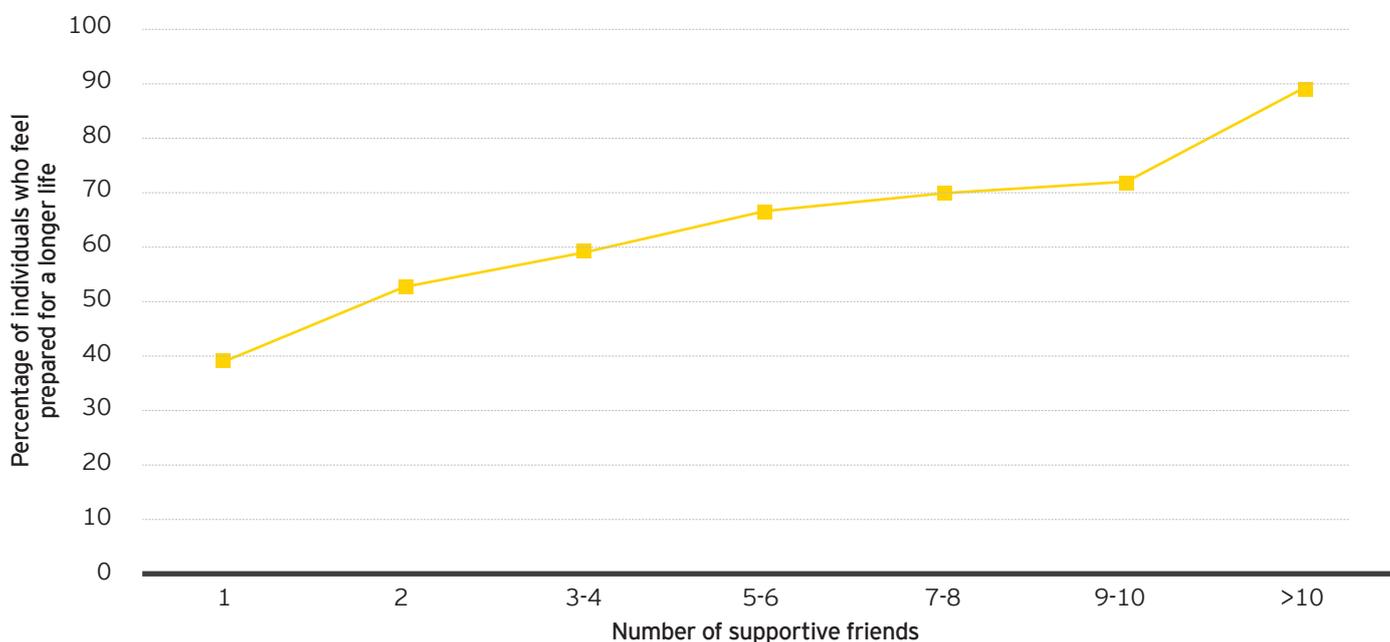
In conjunction with Apple and Japan Post, IBM launched its service in 2015 in Japan because the country's postal workers are well placed to act as trusted liaisons with the local populace. This same approach would not work in the US, however, since most postal workers don't have the same longstanding community-based relationships. That said, other groups working in partnership could meet the US need.

3 Building a bridge not a wall

Data from EY's healthy aging survey clearly show that individuals who are more closely connected to family and friends are less concerned about the long-term effects of aging (see Figure 3). Increasingly, this social connectivity will be fueled by technologies and services that bridge physical distances to connect individuals to each other (e.g., via video streaming, internet communities or mobility services) and to new experiences (e.g., through immersive virtual reality). As noted above, these technologies provide the baseline connection to stimulate the high-touch connections that are an essential component of our humanity.

Figure 3: The importance of social connection to healthy aging

In a EY survey conducted in early 2017, respondents with a larger circle of supportive friends reported feeling more prepared for life in their 60s and beyond.



Source: EY. In conjunction with EY Sweeney, EY conducted a survey of 4,600 respondents aged 18 and older in the US, the UK and Singapore about their attitudes about aging in early 2017.

Figure 4: Brainstorming healthy aging opportunities

Using a whole person approach, Engaged Aging Summit attendees collaborated to create seven platform-based healthy aging initiatives that promote wellness via combining social care and health care.

Person	Tangible opportunity	Key enablers	Stakeholder benefit
 <p>Nicole (28) An art lover experiences panic attacks and struggles to find a purpose-driven career.</p>	<p>The passion project This initiative combines technologies with smart policies to provide customized career and health coaching regardless of age.</p>	<ul style="list-style-type: none"> ▶ Technology: App-based devices enable real-time health and career coaching; easy, on-demand pre-admission testing ▶ School: Multi-generational programs make retraining easy ▶ Policy: Financial incentives to facilitate life-long learning 	<ul style="list-style-type: none"> ▶ Individual: Meaningful career and effective management of chronic condition ▶ Business: Optimally trained workforce with increased productivity ▶ Society: Reduced health care costs; increased productivity
 <p>Vimal (38) Lawyer marries at a young age as a result of an unplanned pregnancy and then later divorces.</p>	<p>Planning for unplanned parenthood This service bundles policy changes and social assistance into an organized support network that helps individuals manage unplanned pregnancies.</p>	<ul style="list-style-type: none"> ▶ Community center: Parenting advice and peer networking ▶ Policy: Dutch-like parental policy with mandated paternity leaves ▶ Policy: Access to birth control and sex education as part of school curriculum 	<ul style="list-style-type: none"> ▶ Individual: Emotional and financial support for parent and child ▶ Business: Employee retention; reduced absenteeism ▶ Society: Greater family well-being, better infant care
 <p>Patricia (47) A single mother and smoker grows isolated and depressed after losing her job.</p>	<p>Breathe easier A mentorship program that is enabled by a technology kit to drive behavior change and encourage a purpose-driven life.</p>	<ul style="list-style-type: none"> ▶ Technology: Wearable devices and mobile apps track smoking habits and provide helpful behavioral nudges when nicotine cravings surface ▶ School: Education on health effects of second-hand smoke in children ▶ Employer: Offers personalized nutrition and mental health coaching plus financial planning 	<ul style="list-style-type: none"> ▶ Individual: Improved long-term health; greater financial security ▶ Business: Reduced worker absenteeism; lower health care costs ▶ Society: Lower health care costs; improved productivity
 <p>Brooke (63) A single mother diagnosed with breast cancer regrets not being able to enjoy retirement due to financial constraints.</p>	<p>Career and health academy An employer-driven multi-dimensional platform that delivers preventive health education and career planning via direct interaction with peer role models.</p>	<ul style="list-style-type: none"> ▶ Technology: App-based games and virtual reality ▶ Community center: Local role models provide high touch support ▶ Employer: Deployment via the human resources department ▶ Policy: Reduced tuition fees for financially strained individuals 	<ul style="list-style-type: none"> ▶ Individual: Medical and emotional support during a life-threatening health event; improved earning potential ▶ Business: Improved employee retention; skilled labor force ▶ Society: Enhanced productivity; wage growth for workers; greater civic engagement
 <p>Tony (66) An overachiever whose hobby is work retires after a heart attack.</p>	<p>Whole life balance This initiative is a precision health offering that combines technology and genetic advances with psychosocial coaching to identify new interests.</p>	<ul style="list-style-type: none"> ▶ Technology: Remote monitoring applications and risk profiling based on genetic and other data; 1:1 coaching ▶ Community center: Virtual and in-person opportunities to learn new skills and develop friendships 	<ul style="list-style-type: none"> ▶ Individual: Lifestyle intervention for preventable medical event ▶ Business: Reduced time away from work ▶ Society: Better understanding of disease risk profiles for care delivery and insurance offerings
 <p>Richard (78) An active senior's health declines as he grows isolated after his wife dies.</p>	<p>Life nest This service creates a technology-enabled community to support transitions common in retirees, including the death of a spouse.</p>	<ul style="list-style-type: none"> ▶ Technology: Apps, health-tracking devices and social media platforms ▶ School: In-person and virtual technology instruction ▶ Community center: Peer coaching ▶ City government: Mobility and education services to promote connections among elderly 	<ul style="list-style-type: none"> ▶ Individual: Longer health span ▶ Business: New opportunity for community-based senior support ▶ Society: Reduced care giving burden; enhanced community participation
 <p>Margaret (92) A widow with Alzheimer's disease and limited mobility grows increasingly isolated in her retirement home.</p>	<p>Living larger This is an "active" community solution that supports social connections via an end-to-end technology platform.</p>	<ul style="list-style-type: none"> ▶ Technology: AI + sensors/wearables provide tracking and predictive health support that is shared with caregivers and health care providers ▶ Mobility services: Ride-sharing organizations connect seniors to their communities ▶ Telcos and internet service providers: Link seniors to distant friends and loved ones ▶ Nongovernmental organization: Help catalyze investment in, and deployment of, service 	<ul style="list-style-type: none"> ▶ Individual: Aging in place; maximizes health potential ▶ Business: New revenue opportunities around safety, connectedness and wellness ▶ Society: Reduced caregiving burden; lower health care costs

Source: EY

4 It's not about health care – it's about health

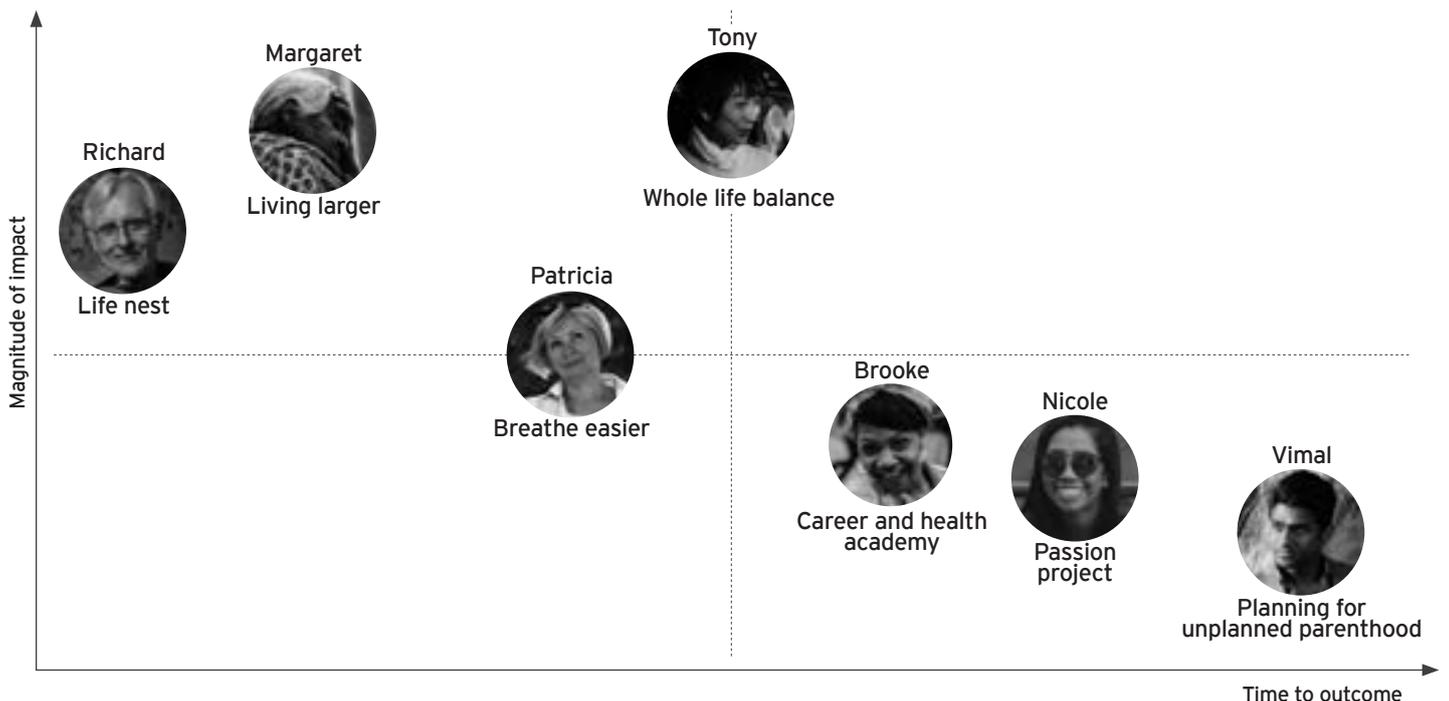
Approximately 50% of the Engaged Aging Summit attendees came from health care or life sciences companies. In a series of hands-on, user-centered design workshops, Summit participants created seven healthy aging solutions. These solutions, outlined in Figures 4 and 5, combine elements of health care and social care to promote a broader definition of wellness that extends beyond traditional medical interventions and so-called “beyond-the-product” solutions.

As one participant noted, “It’s not about the medical issues, but everything else around it.” Indeed, even the titles for the healthy aging opportunities, with names such as “Breathe easier,” “Living larger” and “Whole life balance” exemplify the desire to interweave social connection and traditional health care.

This broadening in scope is reminiscent of a trend already at work in the technology sector, where increasingly every enterprise, from ride-sharing companies to home-sharing businesses, is a tech player because of its use of data and analytics.

In the same vein, there is a health angle for almost every product or service offering. Case in point: the microwave, which offers on-the-go individuals in their 20s, 30s and 40s convenient meals, but also functions as a health device because it supplies vital nutrition to the elderly who no longer want to cook their own meals from scratch.

Figure 5: Defining healthy aging opportunities based on potential impact and time to outcome



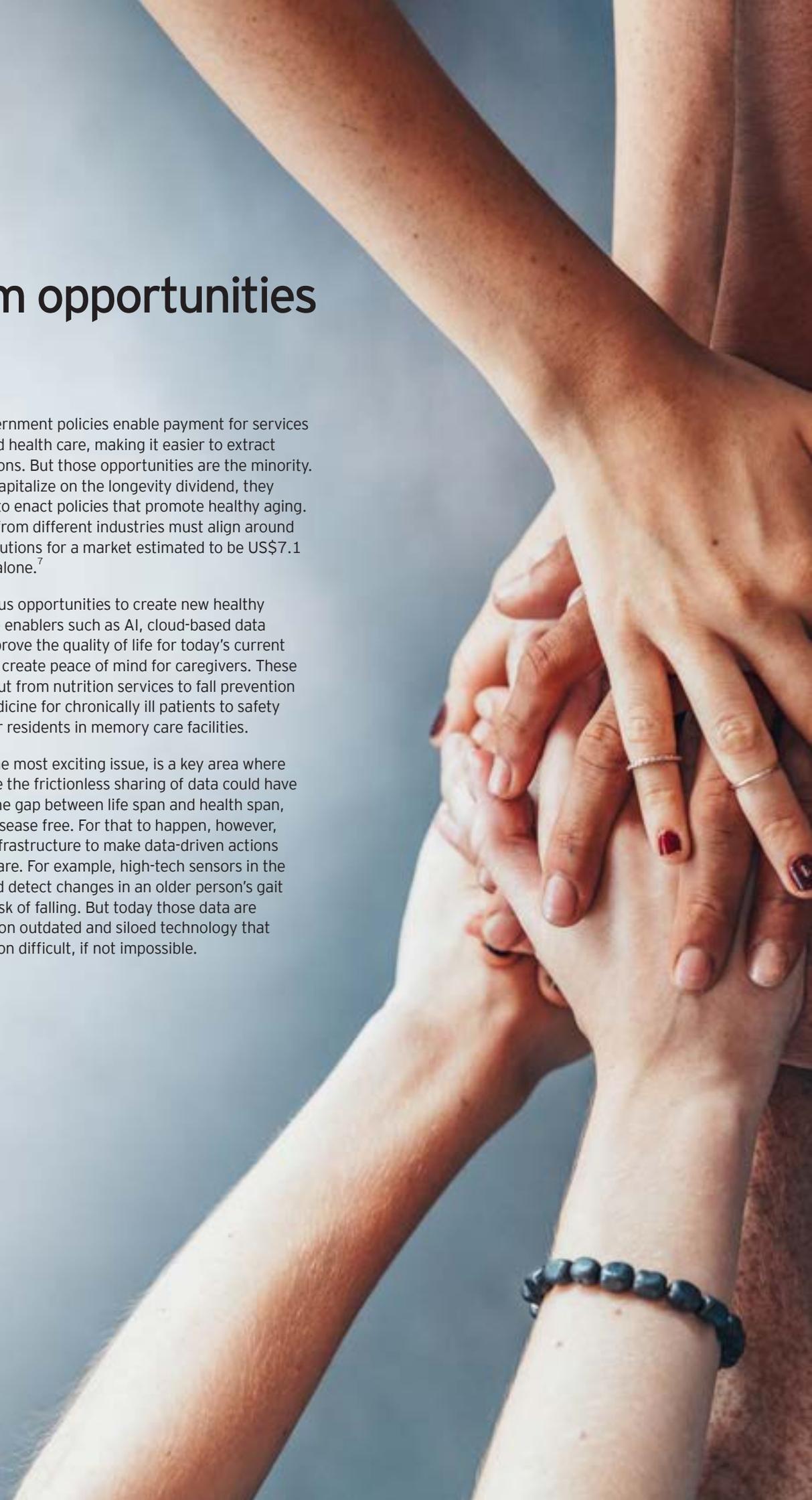
Source: EY

Near-term opportunities

In some cases, existing government policies enable payment for services that combine social care and health care, making it easier to extract value from these new solutions. But those opportunities are the minority. If businesses truly want to capitalize on the longevity dividend, they can't wait for governments to enact policies that promote healthy aging. Instead, innovative leaders from different industries must align around a shared vision to create solutions for a market estimated to be US\$7.1 trillion in the United States alone.⁷

In the short-term, the obvious opportunities to create new healthy aging solutions will leverage enablers such as AI, cloud-based data storage and analytics to improve the quality of life for today's current cohort of seniors, as well as create peace of mind for caregivers. These opportunities span the gamut from nutrition services to fall prevention programs, and from telemedicine for chronically ill patients to safety and monitoring solutions for residents in memory care facilities.

Interoperability, while not the most exciting issue, is a key area where joint initiatives that promote the frictionless sharing of data could have a major impact on closing the gap between life span and health span, the period individuals live disease free. For that to happen, however, businesses must invest in infrastructure to make data-driven actions easy to implement – and share. For example, high-tech sensors in the floor or worn on shoes could detect changes in an older person's gait that might signal a higher risk of falling. But today those data are collated in call centers built on outdated and siloed technology that make taking preventive action difficult, if not impossible.





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Small steps, big changes

While scalability is important, solutions have to be demonstrably effective for some group before growing. And as noted, the “where” is as important as the “what,” with communities playing a critical role in deploying locally based, culturally relevant healthy longevity solutions. A growing number of organizations, from the World Health Organization to the Milken Institute see an opportunity to use cities, neighborhoods and even front porches as a mechanism to create a coalition interested in developing the most promising opportunities for healthy longevity. With small successes, new groups will join these nascent communities, creating positive feedback loops that propel progress and over time change the aging narrative to emphasize the longevity dividend.

Governments willing to make the necessary upfront investments in health infrastructure can play a critical role. These institutions will have an opportunity to create policies that encourage new innovations that marry a return on health with a return on investment. Those direct financial incentives will further enable the scale up of pilot projects, and their subsequent deployment in poorer, marginalized communities that do not have the wealth to invest in concierge-based healthy aging solutions.

As the ancient Greek statesman and orator Demosthenes once wrote, “Small opportunities are often the beginning of great enterprises.” In its own way, the Engaged Aging Summit represented just such an opportunity, providing a forum to connect on, and converge around, healthy aging. After all, it is at the points where different industries intersect that different perspectives emerge and innovation blossoms.

The combination of technological innovation, advances in behavioral economics and increasing health consumerism will rewrite the aging narrative. The urgent conversation isn’t so much about what happens when 90 becomes the new 40. It’s about when 90 becomes the new 90. As solutions emerge to accelerate healthy aging, the emerging chapters are about empowering businesses and individuals alike to collect their longevity dividend.

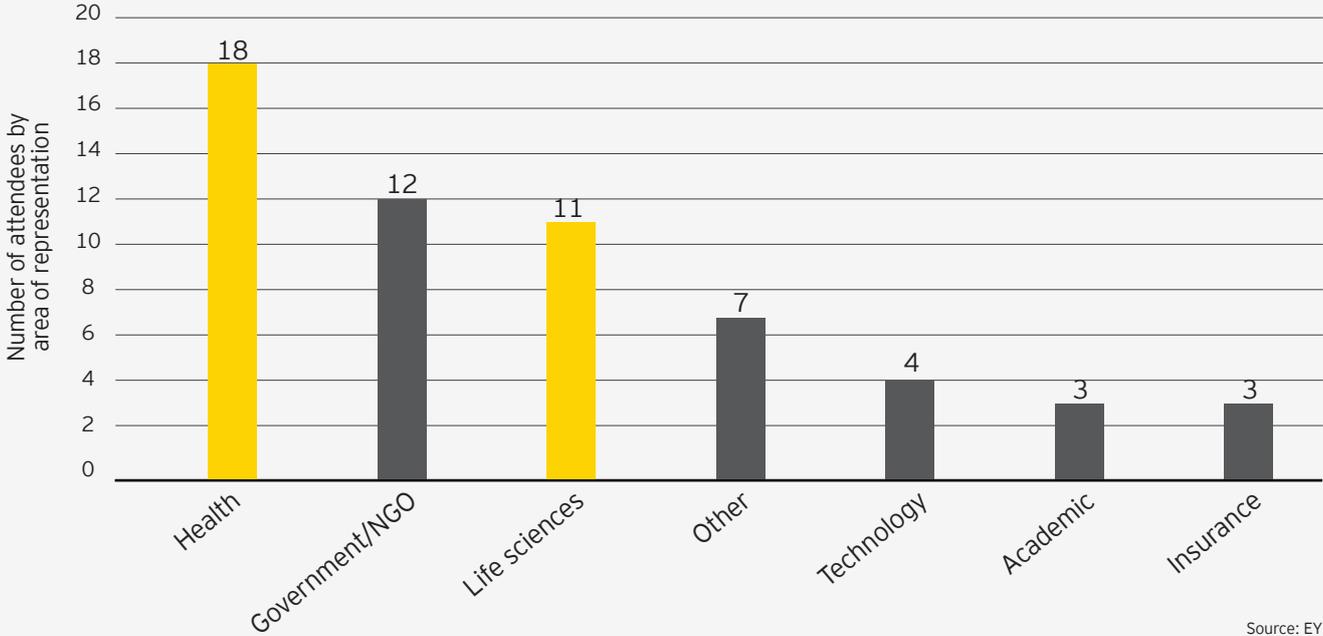
For more from EY on Engaged Aging and our series of papers, please go to ey.com/engagedaging.



The Engaged Aging Summit

On 11 May 2017, executives from the health, life sciences, technology, mobility and insurance industries joined government leaders and academics in Washington, DC to discuss an important question: How can we frame healthy aging as a societal asset worthy of investment?

Roughly 60 leaders attended the inaugural Engaged Aging Summit, a one-day event convened and shaped by EY and designed to foster collaboration and out-of-the-box thinking via interactive workshops and provocative discussions.



The Engaged Aging Summit represents EY’s continued commitment to building a better working world and is an important first step toward seizing opportunities inherent in the global demographic shift.

Businesses must anticipate how customers’ demands will evolve as they age, while also creating internal policies consistent with a talent pool that is growing older. As Mark A. Weinberger, Global Chairman and CEO of EY, told Summit participants, “Every stakeholder brings different resources to the table. Effective solutions will require new partnerships where no common language currently exists. In the end, there won’t be one solution but many – and multi-stakeholder collaborations will be required for their creation and successful deployment.”

EY will continue to engage on this important topic so that companies, governments and individuals can realize their respective engaged aging strategies - and we invite others to step forward as well.

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