



**How will we disrupt aging
before aging disrupts
economic growth?**

Building an engaged aging strategy



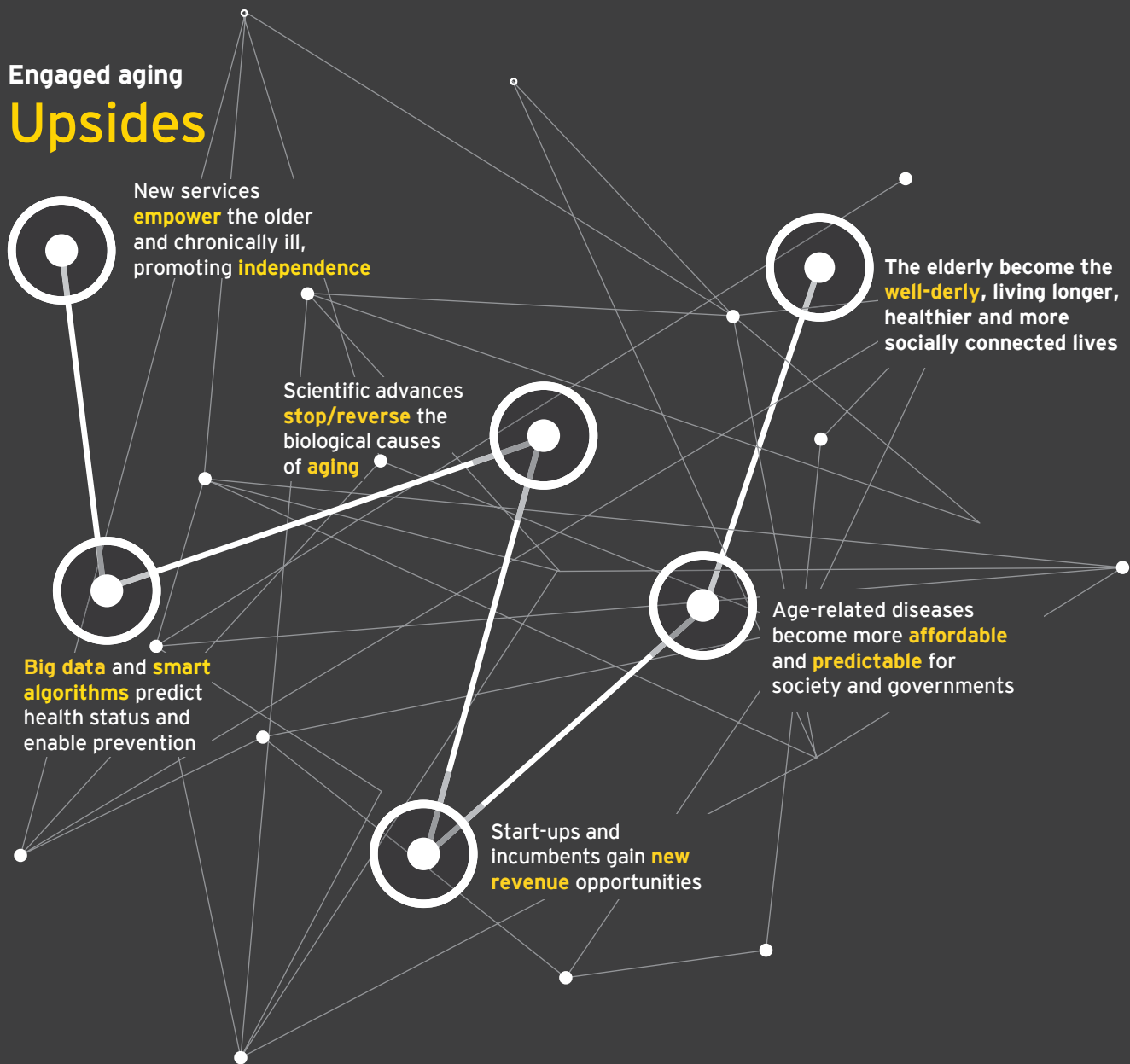
The better the question. The better the answer.
The better the world works.



EY

Building a better
working world

Figure 1: Engaged aging



As EY explores the upsides of engaged aging, it's not enough to question the status quo. Here are better questions that businesses, companies and individuals must ask – and ultimately answer.

Better questions:

- ▶ How will we disrupt aging – before aging disrupts economic growth?
- ▶ Pay for diseases of aging? Invest in longevity?
- ▶ What happens when “older” means better and healthier?
- ▶ Is healthy aging a basic right – or a luxury good?
- ▶ What are the best digital and genetic technologies to enable healthy aging?
- ▶ How can novel partnerships between governments, businesses and seniors promote healthy aging?



It is time to recognize the current demographic shift for the disruptive force that it is, on par with technological dislocations such as artificial intelligence and the Internet of Things. It is not hyperbole to say the costs of treating diseases of aging threaten to overwhelm health systems and the agendas of companies and governments around the globe.

In January 2017, Robert Marchand, a dapper, 105-year-old Frenchman with the aerobic fitness of someone less than half his age, set a new world record for his age bracket, cycling 14 miles in one hour. Marchand, who has vowed to continue his training, is exceptional. Physically fit, socially connected and intellectually engaged, he is a poster child for healthy aging and the repositioning of elderly as “welllderly.”

He is also *still* the exception.

For every Marchand, there are thousands more seniors with serious health problems, from cardiovascular disease to Type 2 diabetes to Alzheimer’s. As societies globally have made great strides in reducing infant mortality and death from infectious disease, we are living longer. But while we have made inroads in preventing heart disease and treating certain cancers, we are not necessarily living better.

The issue is already acute in Asia-Pacific, where a 71% increase in the number of people 65 or older by 2030 is projected.¹ Indeed, in its *Global Risks Report 2017*, the World Economic Forum lists aging populations as one of the top five drivers of global change, alongside growing income and wealth disparity and climate change.²

Aging: a disruptive force

It is time to recognize the current demographic shift for the disruptive force that it is, on par with technological dislocations such as artificial intelligence and the Internet of things. It is not hyperbole to say the costs of treating diseases of aging threaten to swamp health systems and the agendas of companies and governments around the globe. As Paul Irving, Chairman of the Milken Institute Center for the Future of Aging, said in a recent interview with EY, “Every company needs to focus on population aging. Those that don’t have a longevity strategy are missing a key opportunity to serve new customers, enhance the effectiveness of their workforce and improve performance for their shareholders.”

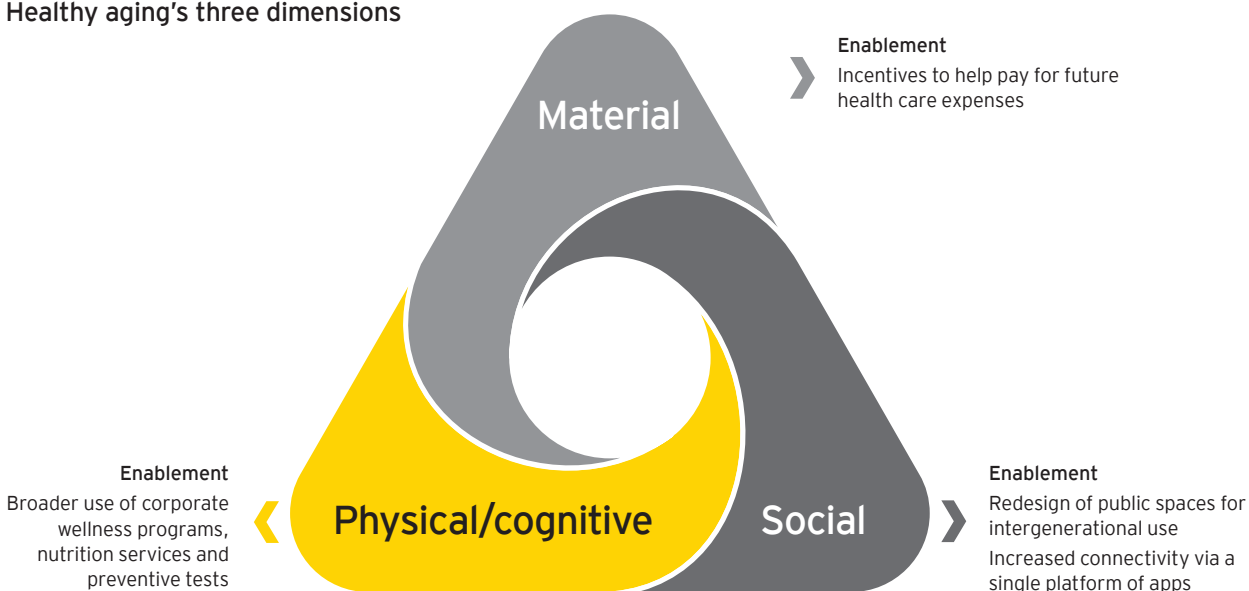
There is a silver lining to this demographic shift. Working together, governments, corporations and individuals still have an opportunity to disrupt aging before its costs displace other priorities (see Figure 1). Success requires a global change in mindset from individuals, businesses and governments. This global “we” must recognize that managing diseases of aging as they arise is no longer affordable. Linking healthy aging to the absence of disease is not sufficient. As Larry Fink, the founder and CEO of BlackRock once said, “To finance longer life spans, we must convince individuals to start investing now for the long term.”

Two fundamental shifts are required to spark such a conversion. First, health must be reframed as a lifelong asset worthy of that investment; second, individuals must be empowered by new tools and data to prioritize their own health, engaging proactively rather than waiting for disease or illness to arise.

As part of the shift, every person will have a unique healthy aging profile. These individual profiles will define wellness holistically across three different, but interrelated, dimensions: physical and cognitive wellness, social wellness and material wellness. Depending on health status, individuals may bear higher costs at a time when government entitlement programs face budgetary pressure.

As aging is repositioned as longevity, stakeholders must focus less on physical and cognitive debilitation and more on mechanisms to improve human performance and social connections. These mechanisms could be new technologies (e.g., driverless cars, invisible sensors and mobile and computer apps) or new health-related services built on the sharing economy. Regulations encouraging integration of services into a common platform will propel healthy aging innovations (see Figure 2).

Figure 2: Healthy aging’s three dimensions



Playing the long game

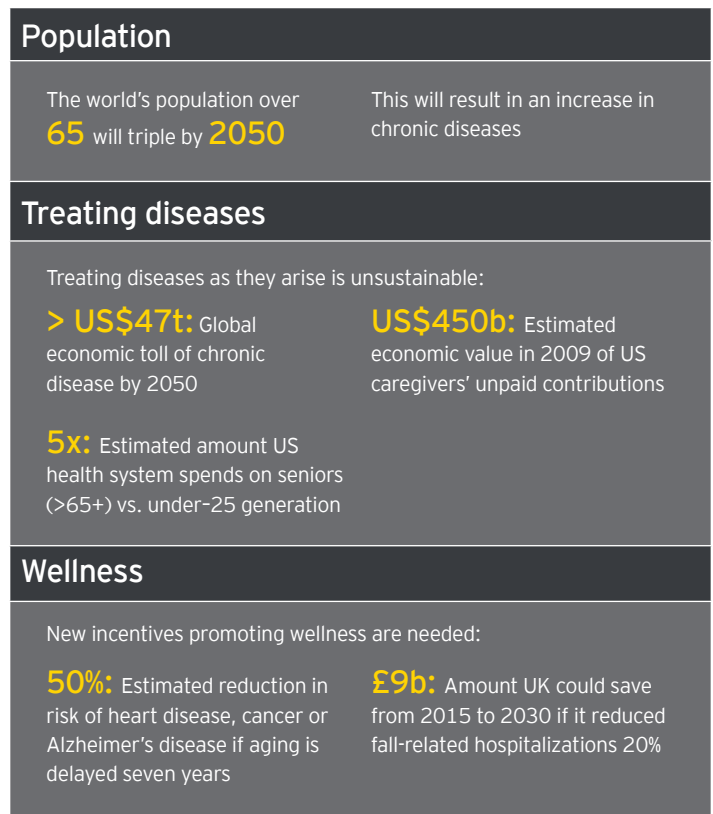
Admittedly, jettisoning the tyranny of short-term goals to focus on long-term health is easier said than done. The up-front costs of treating diseases of aging in developed nations are already enormous. Health expenditures currently account for 8% of GDP in Japan; research suggests that decades of economic stagnation, a disproportionate use of more expensive branded drugs and the oldest population globally mean health costs will increase to 11% of GDP by 2025.³

Already health systems in the US and UK spend more than five times as much on the health care of citizens 65 and older than they do on the under-25 generation. That cost will balloon over the next 30 years as the global population of people over 65 triples to 1.5 billion. Indeed, some forecasts estimate the global economic toll of chronic illnesses such as heart disease, Alzheimer’s disease and diabetes will exceed US\$47 trillion by 2050. That’s greater than the economies of the United Arab Emirates, Denmark and Hong Kong combined (see Figure 3).⁴

To promote individual and corporate resilience in the face of this disruption, governments will need to explicitly support incentives that promote wellness and greater health participation in younger generations, especially baby boomers, millennials and Generation X. Separately, regulators will have to work at the speed of business, developing policies that adapt with changing technologies and encourage innovations, particularly as the combination of new genetic, mobile health and traditional laboratory data are combined to enable interventions at the pre-disease stage.

Finally, no one group will have the single solution to sustainable aging. Different groups – payers, providers, life sciences companies, technology innovators and others – will have to work together to create scalable solutions.

Figure 3: Aging, a disruptive force



Source: EY analysis, World Health Organization, Organisation for Economic Co-operation and Development (OECD) and the International Longevity Centre - UK.

Building a wellness infrastructure ...

Redefining health as a long-term asset is a necessary starting point, but on its own, isn't sufficient. To catalyze lasting change, there must be substantive investment in healthy aging. Indeed, public and private organizations must come together to build a wellness infrastructure that not only defines the concept, but also aligns incentives for different stakeholders. As we will outline in future white papers, this infrastructure will be anchored by the following pillars:

Metrics for healthy aging

Despite the fact that health is more than the absence of disease, there are few, metric-based definitions of what wellness, exactly, means. Yet we can't change what we don't measure. Only by better defining what is meant by health will it be possible to get common agreement about what constitutes improvement. That accord will make it possible to benchmark new solutions, a necessary precursor if governments and other payers are going to actually fund, or reimburse, them. Part of the challenge will be the creation of flexible definitions of healthy aging that account for individuals' current health status and overall wellness potential. For instance, a fit 70-year-old's definition of healthy aging will be markedly different from that of a cancer survivor or an Alzheimer's patient of the same age. Yet each individual should have the potential to maximize his or her health, using existing – and emerging – tools.

Data in new combinations

It's no secret that health is full of substantial and unanticipated challenges, most of which will not be solved on the first try. Separating successful pilots that should be scaled from informative false starts requires sharing and combining diverse data sets. New mobile technologies that monitor key biological metrics – for instance, heart rhythm or blood glucose – may spark radical, positive changes in consumer behavior. But it's also true that great-sounding technologies haven't yielded measurable cost savings that justify the initial investment. Payers, for instance, have invested heavily in wearables to facilitate weight loss, only to be disappointed by the lack of long-term behavioral change.^{5,6} Going forward, it will be critical to combine genetic and proteomic data with information collected from wearables, environmental sensors and social media

sites such as Twitter and Facebook to better define both the risk of a given disease and its onset. Only with this knowledge will life sciences and technology companies be able to develop lower cost interventions that health care providers and consumers can use to interrupt the process.

Aligned incentives

Meeting the opportunities of healthy aging requires buy-in from stakeholders across many, if not all, industries. This means aligning incentives for a broad "win." However, public and private entities often have very different objectives, as well as timelines, for achieving those goals. Private, corporate stakeholders may have a lower risk tolerance and shorter time frame for generating profit because of their fiduciary responsibility to shareholders. Meanwhile, public groups may be less motivated by profit than the ability to show a return on investment. Understanding what constitutes success for different stakeholders is therefore essential as different groups form new kinds of partnerships. One of the key ingredients to rapid progress may be alliance structures that allow stakeholders to enter – and leave – partnerships at pre-arranged and mutually beneficial time points.

A shared purpose

Perhaps the most important pillar of this wellness infrastructure is the final one: the need for a shared vision that is inclusive regardless of socioeconomic status or cultural norms. The recent wave of anti-establishment populism throws in stark relief the fissures caused by rapid technological change at a time when social protection programs (e.g., Medicare in the US or government-sponsored insurance in the UK) are under stress. Simply put, if healthy aging solutions are only accessible to the wealthiest individuals in the developed world, they are neither "healthy" nor truly "solutions." Part of the shared purpose must be a recognition that healthy aging is a basic right, as opposed to a luxury good. Closing the gap between the wealthy healthy and all others will require greater, not less, global cooperation.

... on the current foundation





Tremendous innovation is happening as a result of profound demographic change. Over the next three to five years, there is an opportunity to integrate what have traditionally been bespoke, siloed solutions into broader platform-based offerings that combine multiple technologies and skill sets. Around the globe there are a number of interesting pilots in the healthy aging space worth watching (see Figure 4).

In subsequent pieces in this series, we will discuss the following:

- ▶ The importance of engaging with consumers to promote lasting behavior change
- ▶ The technologies and care services that promote the pivot from disease management to wellness
- ▶ The resources different partners can bring to novel partnerships

Along the way, we will share case studies that combine the leading technologies from the IT, consumer, health and life sciences industries with cutting-edge consumer-based insights gleaned from financial and retail organizations. Our goal: to share the stories that explain, in small but important ways, how we as individuals, companies and governments can “live long and prosper.”

Figure 4: Innovating our way to healthy aging

Solution (disrupter)	Analysis
 <p>Time-banking (Give and Take Care)</p>	<p>Volunteers in England help seniors with daily tasks, “banking” care hours that can be withdrawn when the volunteers require assistance.</p>
 <p>Dementia villages (Hogewey care center)</p>	<p>In the Netherlands, Italy and Germany, secure residential areas offer round-the-clock care without the sterility of traditional nursing homes, along with compassionate and cost-effective services to memory-impaired seniors.</p>
 <p>Intergenerational housing (Humanitas)</p>	<p>Younger individuals in high-cost cities provide companionship and do light tasks in assisted living centers or private homes in lieu of rent.</p>
 <p>Precision health (Arivale, Human Longevity)</p>	<p>Data from multi-omic diagnostics, traditional clinical laboratory tests and wearables can be combined to generate a more complete picture of disease risk, allowing providers and health coaches to prioritize earlier, lower-cost interventions that drive lasting behavior change.</p>

Source: EY analysis

Contacts



Pamela Spence
EY Global Life Sciences Industry Leader
pspence2@uk.ey.com
+44 7979 708469
Twitter: @pamelaspence_EY



Jim Costanzo
Interim EY Global Health Leader
+1 248 705 0441
jim.costanzo@ey.com



Ellen Licking
Senior Analyst, EY Global Life Sciences Industry
ellen.licking@ey.com
+1 408 283 5022



Jerome Pagani
Senior Analyst, EY Global Health Industry
jerome.pagani@ey.com
+1 202 327 6346

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