

Megatrends Impacting the Future of Retirement Plans

APRIL | 2023





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This report examines a series of megatrends that can impact the future of retirement and retirement plans, as well as the macro forces that will shape those trends. The first section of this forward-looking journey will set the context with a broader understanding of how the future is changing. Subsequent sections will then highlight sociocultural, economic, technological, health and long-term care, and environmental trends that can redefine the landscape and have a major impact on the future of retirement. The final section will assess strategic implications for both the public and private sectors in a world where much of what we now understand about retirement and retirement planning could be reimagined. Many of the trends discussed here are truly global in nature, however the focus will be primarily on the U.S. market and secondarily on other developed markets. Where appropriate, there may be references to other markets (e.g., China) which influence the trajectory of some of these trends.

It is important to note that there has been actuarial involvement and considerable data from actuarial efforts about some of the topics featured in this report. In fact, the authors have been a part of conjectures about those topics and trends for over three decades, having been key contributors to the 1988 *Future of Retirement Symposium* which was sponsored by the Society of Actuaries in cooperation with the American Academy of Actuaries, the Conference of Actuaries in Public Practice, the Employee Benefits Research Institute and the Pension Research Council. Many of the trends and issues discussed in the report that ensued are still relevant today, including income disparities, flexible working arrangements, life extension, worrisome pension obligations in the public and private sectors, rising healthcare costs, pressures on Social Security, and housing lifestyle choices. One primary objective of this project is to reframe the conversations, and challenge accepted thinking, around certain retirement issues. A second objective is to highlight new areas for consideration.

Many of the following categories and issues overlap, so while we have tried to partition by sections and titles, trend components re-emerge throughout this paper. Much of this report takes a detailed forward look at likely future developments and outcomes. The descriptions of the future are based on the authors' extensive expertise and research on these topics. They are not intended as official statements or expectations on behalf of the Society of Actuaries Research Institute. Rather, they are intended to provoke meaningful conversation about how changing paradigms can impact retirement and how actuaries and others may address these changes.



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Section 1: Contextualizing the Future

Change – technological, economic and social – is happening at a far more rapid rate than ever before. We call this *templosion*. (*Note, this report will introduce several terms which The Future Hunters have developed as a way of describing new phenomena. A brief glossary of these terms is included toward the back of this report.) This is the overarching challenge of today’s economy, and world. The circumstances of the last few years have [accelerated many trends](#), disrupting the macro environment far more quickly than had been anticipated¹.

1.1 ACCELERATED TIMEFRAMES AND EXPECTATIONS

The pace of technological innovation around the world is increasing far more rapidly than in the past. All of this is leading to a world of *templosion* – accelerated timeframes and expectations. The biggest of things and events are happening in far shorter periods of time. Everything from the impact of climate change, to scientific discoveries, to the spread of pandemics, to corporate lifespans, to financial planning cycles, to the ways in which we communicate (e.g., the images, short-form videos and compressed text formats of social media) is becoming more compressed. The optimization of time itself will likely be *the* single most important value proposition for any business, employee, organization, legislator, retiree or customer in the future.

Templosion will force us to confront retirement and retirement planning in completely new ways. Today’s retirement and pension plans were not designed for the current reality of people living longer, active lives. The trend toward longer life spans throughout the developed world has been strong for a long time, and yet many of our most fundamental structures and systems have not sufficiently adapted. Rapidly, the issue has become more serious. The traditional framework around the three stage life of school, work and retirement is no longer adequate [in an age of unprecedented longevity and constant shifts in work and health outcomes](#)². The Stanford Center on Longevity launched an initiative called [The New Map of Life](#), believing that one of the most profound transformations of the human experience calls for equally momentous and creative changes in the ways we lead expected 100-year lives, at every stage³. Indeed, it is possible that we need to reimagine the life framework itself, as we are now, they postulate, living three lives: birth to 50, 50-100+, and eLife. After 50, many are starting life all over again, reentering new family relationships, new educational trajectories and new jobs, careers and interests.

Our life in the technological ether (eLife) is not only becoming a bigger part of who we are while we are alive, but it remains after we pass. There is rising interest in [legal and estate planning](#) for this new aspect of being⁴. The holographic resurrection of celebrities will be followed by the [virtual resurrections](#) of average people, with new technologies enabling their personas to be recreated for ongoing conversations⁵. We not only need to plan for maintaining our corporal lives, but when younger and more technologically astute people enter their later years, they will want to plan for the financial contingencies of that new “afterlife.” Templosion is speeding up the advent of these new life realities. As more people plan for a 100-year-plus life, the need to imagine, create and institutionally support new and improved options that will address their changing financial needs becomes a growing imperative.

1.2 THE COVID-19 PANDEMIC’S IMPACT ON HUMAN LABOR

Workers across the economy, including older workers, experienced devastating job losses during the early stages of the COVID-19 pandemic. 5.7 million workers who were 55 years old and older lost their jobs in the spring of 2020 – 15% of total employment for this group – and were still over 2 million jobs short in 2021 of their employment levels before the pandemic hit⁶. The COVID-19 recession and gradual labor market recovery was also accompanied by what at first appeared to be [an increase in retirement](#) among adults ages 55 and older⁷. One important question emerging from that preliminary data, however, was how much of that trendline would sustain, and how much would prove to simply be a blip as we transition toward a “post-pandemic” world. In 2022, many American retirees “unretired” and returned to the workforce. Drivers behind this likely include an improved COVID outlook and more favorable labor market conditions (e.g., higher wages)⁸. The appeal of remote work is also a major lifestyle

consideration⁹. That all being said, this year’s uptick in unretirement may not be all that unusual given the context of historical precedent¹⁰. According to [Labor department forecasts](#), economists now estimate that Americans 55 and older will take roughly half of all new jobs created in the next decade. In addition, the biggest forecasted jump in labor force-growth in coming years will come from those 75 and older, among whom employment is projected to nearly double by 2030¹¹.

Concurrently, COVID-19 accelerated many previously developing trends at an extremely rapid pace. Perhaps, the most obvious example of this is the profound shift toward fully- or partially remote workforces. Another pre-existing trend which has accelerated is growing tension between generational cohorts, particularly in the workforce. We call this the intergenerational cauldron, and we discuss it in greater detail in section 2.4 of this report. Ultimately, one of the most important trends to consider within this context is how the global pandemic accelerated (and, in some cases, necessitated) the reality that AI and robotics will disintermediate large sectors of human labor. Whole industries were forced to pivot in real-time, and permanently, in response to unprecedented conditions. Companies spanning multiple industries ramped up their use of [robots, chatbots, and autonomous vehicles](#) to provide contactless care to patients, monitor grocery store stocks, and connect the elderly to their loved ones¹².

The pandemic will most likely have [lasting effects on the labor market](#) and could change the composition of available jobs indefinitely¹³. The pandemic exposed a [widening chasm](#) in the U.S. economy between college-educated workers, whose jobs can be done from anywhere on a device, and less-educated workers who increasingly find themselves in jobs that require human contact. People in the latter category are already facing low pay, few benefits, and uncertain hours¹⁴.

Employers who struggle to find enough workers in a tight economy could stop looking for humans entirely and instead embrace technology. We may also see some concerns about job losses dissipate as society sees the benefits of restructuring workplaces to minimize close human contact. For instance, the [tele-medicine revolution](#) could reshape how health professionals help patients manage chronic disease and practice preventive care¹⁵. According to BLS data, 400,000 [care workers left their jobs](#) during COVID-19¹⁶. Some [recent research](#), however, suggests that while other low-wage workers have returned to work in recent months, it is not true for direct care workers¹⁷. Pandemic-induced job losses hit [low-wage workers](#) much harder than those earning higher wages¹⁸.

The accelerated displacement of human labor across a wide range of sectors will most likely be one of the most fundamentally important outcomes from COVID-19. Despite short-term shifts (e.g., social distancing, focus on public health, widespread testing measures, etc.), we expect there will be a permanent and seismic shift in two areas:

1. Businesses will be forced to reengineer their entire operations, supply chains and workforces to prevent future disruptions, like the COVID pandemic, from putting them out of existence.
2. Consumers have rapidly adjusted to the realities of a [“post-pandemic” world](#). For example, e-commerce has grown considerably, while cross-category brand loyalty has taken a hit¹⁹.

Where human labor is still vital, “fully distributed” operations have become more commonplace. [Permanent remote positions](#) in the U.S. doubled from 9% to 18% during the last quarter of 2021, and they were forecasted to increase to 25% in 2022²⁰. Many prominent companies are now trying to scale back remote work, even mandating that employees return to the office. But they are [facing significant resistance](#) from workers who have become accustomed to remote work²¹. As companies make hybrid and remote work more permanent, feelings of loneliness have deepened. More than 80% of employee respondents globally have felt or feel lonely at work, according to the [EY Belonging Barometer 2.0](#) study²². Nearly half [feel lonelier today](#) than they did prior to the pandemic²³. And as technology improves, swaths of the knowledge economy will move even more functions online.

The current job market is unique by historical standards. Employers have had difficulty replacing workers who quit in [“The Great Resignation.”](#) Huge numbers are leaving the labor market entirely, and more than 80% of those do not

want a job – the highest on record since 1993²⁴. This has left huge holes in the workforce. CEOs cite [worker shortages](#) as the greatest threat to their businesses in 2022²⁵. It should be noted that one prominent outlier to all this activity is the [big tech sector](#), where companies in an economic downturn have been forced to lay off large swaths of their human workforce as a direct consequence of their own hiring sprees during the pandemic²⁶.

Ultimately, while some churn is transitory, there are indications that higher churn rates will hold strong. The prevalence of remote working means that more roles are plausible options for more jobseekers. And the pandemic has highlighted important issues for those at the bottom of the income ladder. [Resignation rates](#) are highest in industries, like hospitality, comprised of low-wage workers who deal with more potentially risky face-to-face interactions²⁷. Other factors contributing to higher resignation rates may include the ability of some workers to transition into better jobs, as well as poor work scheduling practices. Salaries matter to everyone, but for lower-wage workers in particular, benefits like healthcare and flexible work have also become central. Firms are testing new ways to recruit, train and deploy staff.

In the short-term, as more people remain out of the “traditional” workforce, there will be even greater strain on social safety nets which are already under threat from long-term underfunding. However, in the longer-term, a workers’ movement may well lead toward greater pressure on organizations in both the public and private sectors to reconceive the retirement benefits they offer to talent. While defined benefits plans have long been falling out of favor, employers may soon be faced with a reckoning where workers demand more guarantees from them in the future. It is possible that, rather than funding pensions, employers might promise a one-time stipend after vesting (the other end of the spectrum from a sign-on bonus) for those who are willing to stay for a pre-determined number of years. Creative ways to help employees fund their retirement without promising defined benefit or defined contributions pensions may well become a differentiating variable in talent recruitment and retention.

Section 2: Sociocultural Trends

Several sociocultural trends are converging to profoundly alter our understanding of markets, demographics and retirement. They include: The bespoke life; the non-linear life trajectory; the extended mortality horizon; diamonding; gerontopoly; intergenerational dynamics.

2.1 THE NON-LINEAR LIFE TRAJECTORY

One-size-fits-all approaches to learning, work and family are now becoming less the norm and more the exception. Over two decades ago, the authors introduced the concept of the *non-linear life trajectory*. Traditional life stages are becoming more blurred, and boundaries are becoming harder to define (e.g., older people moving in with their children; having multiple careers in one lifetime; going back to school as adults or seniors; delaying having children; “unretiring” and going back into the workforce; quitting work and going back to school; retiring and then taking up a new career, etc.). We are now undergoing a fundamental paradigm shift toward what we might call the *bespoke life*, a major evolution of the non-linear life trajectory. Individuals throughout much of the developed world now have an increasing ability to customize their life experience to be uniquely theirs – tailored for their needs and preferences. They now have more choice than ever before when it comes to how they learn, where they are educated, whether they go to school at all, where they work, how they get their work done, when to start a family, how their family might look, and whether to start a family at all. But the bottom line is that the proliferation of choice – and our different ways of working, living, and spending – has made the one-size-fits-all retirement plans of the past, where money is regularly saved up with employer contributions to be spent in the later years of life, neither feasible nor relevant for larger swaths of the population. And this, in turn, will likely spur far greater demand for individual plan portability through one’s working life, something which might be made more possible with the blockchain technology discussed later in this report.

2.2 CHANGING FAMILIES & HOUSEHOLDS

Family planning considerations are in flux. More U.S. adults say they are [unlikely to ever have kids](#), a finding which reinforces the risks of declining birthrates for industrialized nations. Rising childcare, healthcare and education costs – along with global instability, including the pandemic and climate change – could all be contributing to a broader change in attitudes toward marriage and priorities in life²⁸. More specifically, with the climate crisis becoming ever more urgent, a growing number of young, childless men across the developed world are [making the drastic decision](#) of being sterilized for environmental reasons²⁹. A 2017 study said the single most effective action an individual could take in terms of helping the planet was having one fewer child – referred to as [“eco-reproductive” choice](#)³⁰. And, since 1990, [divorce has become easier](#) in at least 30 of the 38 members of the OECD, a club of rich countries³¹.

The Pew Research Center in 2015 reported that [there is no longer one dominant family form in the U.S.](#) Single parent families, high divorce rates, out-of-wedlock births, shrinking family size and blended (step) families now dominate the landscape³². Blended families are more common than ever. There are [1,300 new stepfamilies formed every day](#)³³. And, while global data on blended families remains scarce, it is estimated that [1-in-3 Americans is part of a blended family](#)³⁴. And technology is coming into our home and lessening the reason to leave the home. Ironically, according to the [2020 American Family Survey](#), as more of our outside worlds enter the inside walls of the home, more of the family ties that were the foundation of the home are weakening³⁵.

We will also likely see increasing numbers of “solo agers,” and fewer people with children to help them. [AARP conducted a survey of solo agers](#) (also known as elder orphans) – that is, those over age 50 who live alone, are not married or partnered in a long-term relationship, and have no living children. They make up 12% of the population ages 50-plus in the U.S.³⁶. More so than other older adults, this group tends to be worried about losing their independence, being alone without family or friends around them, and not being able to stay in their home. Only

about one-third of solo agers say they have someone who could help manage their household or handle day-to-day expenses if they were no longer able to do so.

As the architecture of the family disassembles and reassembles, the old structures do not serve well. As people couple, uncouple, marry or cohabit, and have parents, children, grandchildren and stepfamilies that are not biologically (and possibly not legally) their own, finances become complicated. Expenses are unplanned and unknown. Sources of income and dependency needs are unplanned and unknown. This is one area where more segmented statistical analyses need to be done to understand the future of retirement planning.

2.3 FERTILITY RATES & IMMIGRATION

Over the past centuries, immigration and emigration rates have affected the population age projections of individual countries. Countries that did not encourage immigration for humane or workforce purposes found that their fertility (population replacement rates) began to plummet in the past half century. While in 2022, Monaco boasted the oldest population by age (36% being age 65 and over), Japan is now the [oldest major country on the planet](#) (29% are 65 and over), followed by Italy (24% in that age range).³⁷ Several European countries are aging. Projecting the future population and fertility rates of the U.S. will depend on the ebbs and flows of immigrant populations. [Certainly, a successful method of assuring youth replacement rates has been encouraging citizen populations to increase births, and China has shown the effect of doing the opposite. Its one-child policy, now aggressively attempting to be reversed, has led to a 2022 population in which 20% is age 60 and over, and that is [expected to rise to 30% \(more than 400 million people\) by 2035](#).³⁸ Its burden of supporting its elder population is significantly mushrooming.] Immigration of child-bearing-age populations, levels which fluctuate according to public policy decisions, will certainly determine future percentages of aging populations, and these will obviously affect dependency ratios and prospects for retirement finance. While we need to acknowledge this, and it is clearly worthy of in-depth study, this paper will not attempt to project immigration/emigration patterns in any meaningful way.

2.4 DIAMONDING

The authors, many years ago, developed the term *diamonding* to explain the process through which individuals become more distinct from others as they age, due to the uniqueness of their life experiences. Aging and retirement are no longer about rigid and similar metals, as in “the golden years” or the “silver generation,” but rather about massive populations of those over-65 who are defined by their compression over time into diamonds: multi-faceted with no two exactly alike. What this will most likely lead to are dynamically customizable new product and service opportunities, as businesses capitalize on many of the niches in this emergent ecosystem. Every pension designer/provider likely will need to go back to the drawing board and figure out what it means for an employer’s workforce, their processes, their products and services and their customers/members/clients, as family, education, work, retirement and location are all bespoke, and hardly anyone follows a linear and predictable path anymore.

2.5 GERONTOLOGY

The Future Hunters coined the term Gerontopoly to describe the body of business, research and initiatives emerging for and around aging people. This burgeoning industry and economy are ripe for redesign, particularly as demographics begin to shift considerably. [The entire industrial world is aging](#). While the U.S. has a large youth population, its aging baby boom will ensure that its entire 60+ population will number well over 100 million within a decade³⁹. The upside to all of this is that one of the most powerful and lesser understood markets is emerging. The [U.S. active adult \(55+\) community](#) market size is estimated to reach over \$805b by 2030⁴⁰. Technologies will also create employment markets and businesses around aging populations. Massive skills bases will most likely exit from the workforce as seniors retire, and totally new businesses set up to recapture their experience and knowledge (see From Mankind to Mindkind).

The rise of seniors in urban areas will most likely also spur technologies designed to make cities more intelligent, especially regarding navigation and connectivity. Housing is the largest expenditure for retirees and homeowners, and it is the largest asset for many. Housing also determines access to family, transportation, medical services, activities and more. Location and housing choice are very important retirement decisions. The Villages, a Florida retirement community, is the [fastest-growing city in the U.S.](#)⁴¹ It is among the growing number of cities designed for the “Young-Old,” people between the end of responsibility and the beginning of dependency. A home is just the primary purchase. The package includes medical facilities, and an environment separated from the young and poor.

Similar communities, with some also potentially becoming cities, are appearing everywhere. With employment options limited, community centers, senior centers and other public places will be where residents can meet, learn skills, bond around interests and socialize. [Innovative groups and activities](#) will proliferate⁴². Organized crowds of dancing retirees in China have now added other forms of socialization in public spaces: tai chi, pai gow and mahjong. Several countries have experimented with ways to connect lonely old people with youth. For example, Germany has built [multi-generational community centers](#) where older people get computer coaching from teenagers⁴³.

With the whole world shifting ethnically and economically, seniors will want safe retreat and respite. For those who can afford it, their homes will most likely be equipped with all manner of support, and their locales with a variety of socialization options. For those who cannot, their children, communities and governments will spend more on products and services that are caregiving. In this environment, medical and wellness businesses can balloon with opportunity, as can financial services. Retail and entertainment most likely will also see rapid and enormous benefit from the growth of gerontopoly, once it becomes even clearer that older people want to buy, see, and do many of the same things as their younger counterparts, only with older bodies and different capacities.

It is surprising that, with this demographic trend projected since the baby boom was born, so little attention has been paid to the cumulative economy of aging. This cohort was ambitiously studied in its early years, and written about in its middle years, but hardly understood now that it is turning 65. All those reaching that age are frequently lumped together for marketing purposes with insufficient segmentation and differentiation. And increasing numbers of those within this market are reaching 100 and beyond. [The Urban Institute](#) tells us, for example, that the combined number of home equity loans to seniors increased from 647,000 in 2018 to 759,000 in 2020⁴⁴. Seniors are increasingly extracting wealth from their home equity to help fund needs and wants, including in retirement.

Housing is only one, but an important, factor showing how the older markets are varied, and the benefit of diamonding being further considered by policymakers or the designers and providers of pension and retirement funding. Could we imagine, for example, a future in which pension guarantees are replaced with home appreciation guarantees? And as more people are dislocated because of climate disasters or economic transitions, can we create housing tokens as a currency to be accumulated over one’s lifetime in the highly differentiated market of seniors?

2.6 INTERGENERATIONAL DYNAMICS

Generations of people have long struggled to fully understand one another. Today, four fundamental things are happening globally which, in combination, are destabilizing intergenerational dynamics to a greater degree. These are combining to create major challenges for social, labor and health systems:

1. The rapid increase in human life expectancy
2. The greatly accelerated pace of technological innovation
3. The unsustainability of traditional social safety nets (e.g., skyrocketing healthcare costs)
4. The unsustainability of ecological systems due to climate change

2.6.1 THE IMPACTS OF RISING GLOBAL LIFE EXPECTANCY

Global life expectancy at birth has more than doubled in the last two centuries. Increasing lifespans, coupled with declining birth rates, have had a major demographic impact in many places, including Western Europe, North America, and Japan. This has contributed to a rapid increase in the proportion of very old people in those markets. According to data from the World Health Organization (WHO), global life expectancy at birth in 2016 was 72.0 years. Global average life expectancy increased by 5.5 years between 2000 and 2016. [In 2050](#), the U.S. population aged 65 and over is projected to be 83.7 million, almost double its estimated population of 43.1 million in 2012 (COVID-19 calculations might change that slightly). Baby boomers are largely responsible for the increase in the older population, as they began turning 65 in 2011⁴⁵. By 2060, the share of children in the population is projected to fall to around 20%. During that same period, the share of the population ages 65 and older is [projected to increase from 17% to 23%](#)⁴⁶. As humans live longer, the obvious consequence is that more generations are simultaneously alive than at any point in history.

2.6.2 TECHNOLOGICAL, ECONOMIC + WORKFORCE PRESSURE POINTS

Young people often engage to a far greater degree with emerging digital technologies. And, yet, while their understanding of, and sophistication level with, these technologies might be greater – the adverse and direct impacts of these technologies on them are also disproportionately greater (e.g., decreasing attention spans). College depression statistics from a [2022 Healthy Minds study](#) show that American students' mental health has steadily declined in the last decade. More than 60% of students during the 2020–2021 school year met the criteria for one or more mental health problems, such as major depression and anxiety disorder. This represented nearly a 50% increase from 2013 data. And while much of this can be attributed to the pressures of technology, the circumstances of the pandemic exacerbated the problems, as 63% of college students say their emotional health is worse than it was in 2019⁴⁷. As awareness of the potential negative mental health consequences of technologies increases, so does the blame assigned to those (often in older generations) who created and marketed these products and services. But we know that mental health has become a serious issue across all generations, and while the causes might differ, the need for solutions and funding is universal.

Employers in every industry are tasked with managing a workforce comprised of more generations than ever before. This entails managing different work styles, work ethics and attitudes toward and proficient use of technology. Balancing recruitment and retention of younger, high-potential talent with the institutional knowledge and wisdom of experienced veterans will become an increasingly important task. Older workers continue to face an uphill battle in getting, and keeping, jobs, in part due to ageism.

Bi-directional economic pressures are among the greatest drivers of intergenerational incivility today. The World Bank is developing an index to measure how [human capital](#) contributes to the productivity of the next generation of workers⁴⁸. Over the past three decades, life expectancy in rich and poor countries has begun converging. Increasingly, many aging workers are delaying retirement – due to financial necessity, a desire to stay engaged, or a desire to continue purposeful activity – because today's retirement horizon can last 30-40 years. As more baby boomers put off retirement, [millennials and Gen Xers are finding it harder to advance into higher-level jobs](#). Boomers bring knowledge and experience, and some companies are trying to coax them into staying. Yet, there are questions about their willingness to fully adapt to new workplace technologies⁴⁹.

Financial advisory firms focused on retirement products and services often prioritize those who are either in their peak earning years or are fast-approaching retirement. However, much younger people are increasingly influencing the financial behaviors and decisions of their parents and grandparents. The data are not readily available, but it would be astonishing to see how many grandparents are funding their grandchildren's educations (and the difficulty of deciding how to do this in the increasing case of blended families) or providing for the needs of grandchildren on the autism spectrum (something which has become epidemic). Further, the youngest generations might need to be

tasked with aiding their elders in using technology that helps their financial planning. Financial service firms might develop services that allow for that transfer of knowledge.

Section 3: Redefining the Landscape – Economic Trends

Central to any analysis of retirement and retirement planning is an understanding of the future of work – including new income-generating opportunities for aging populations. How will new income-generating opportunities impact savings, investment, long-term planning and other financial considerations?

3.1 THE FUTURE OF WORK

3.1.1. THE SHAREECONOMY

As more historically secure jobs disappear, people likely will increasingly have to figure out ways to live without steady income streams. Enter today's collaborative economy – referred to as the “shareconomy.” [The shareconomy is projected to grow](#) from \$15 billion in 2014 to \$335 billion in 2025⁵⁰. The quantity and quality of freelance positions have benefitted from the proliferation of platform technologies (e.g., ride-sharing companies; food delivery platforms). And, in many cases, freelancers are becoming more like micro-entrepreneurs. The U.S. economy, still largely based on the division of labor, is increasingly defined by the *distribution* of labor. A trend toward “continuous temporary employment” represents a shift away from a single overarching *career* toward a series of spliced-together experiences. Novel work configurations, coupled with the move toward less siloed and hierarchical organizational structures, makes *output*-based metrics more of a workplace imperative (as opposed to traditional time and place measures of input). If a company can get the same measurable output from their talent, while allowing them to work in fractions of time, then that would positively impact the bottom line. It would also allow people to pursue fulfillment and their next career through passion projects, side hustles or within the shareconomy.

3.1.2 SHIFTING FROM MANKIND TO MINDKIND

COVID has sped up the movement toward working remotely, away from an employer's office. Many employees have left their jobs or their designated workplaces, some for good. Baby boomers have been retiring from permanent full-time jobs in record numbers as they age, either by choice or because they have been pushed out. In the process, they are taking with them a wealth of intellectual property. In the wake of all this, the war for *talent*, distinct from *labor*, has gotten even more heated. Stable job functions have taken a hit as climate change, *cyber**in*security, conflict issues and disrupted supply chains have induced inflation and short-term crises. Instead, project management has become a core competency as permanent efforts give way to timely needs. Meanwhile, for several decades, teams have already started convening in cyberspace to play games (eSports), win cash prizes for solving practical and theoretical problems, or work for their employers globally from scattered locations. So now, it becomes less efficient and effective to employ bodies full time in one place than thinking about ways to access minds that are needed to satisfy customers/clients/members, attack business goals, create new opportunities, manage crises and otherwise accomplish missions as they arise. It is important to note that this is not eliminating the continued value of firm-specific human capital across the board. Rather, it is rising alongside it. And it can be argued that in a world increasingly characterized by a shift toward *mindkind*, firm-specific human value may be even more valuable than ever.

Most members of the public are capable of contributing some of their thinking to some need somewhere. Whether to shape retail marketing approaches or design medical facilities, crowdsourcing – the accessing of a mix of both smart information systems and relevant human thinkers – has been growing as a means to access minds without being saddled with, or constrained by, a group of permanent hires or lack thereof. [One example is WAHVE (Work At Home Vintage Experts), a company begun by a 65-year-old woman who owned an insurance brokerage. As licensed back-office insurance claims professionals were retiring, others were not in line to take their place. There was a tremendous need to retain the minds and credentials of these older processors, but no way to get them on site and

working full time. WAHVE now employs hundreds of at-home part-timers, mostly older persons, who are screened and matched to brokerages using WAHVE's software.]

The shift from mankind to mindkind will change the formulas applied to compensation, benefits, independent contractor status, incomes and retirement savings. As talent migrates from in the office and on the payroll to any workspace at any time, not only can older people continue to work, but novel ways will arise to reward all people for their contributions. Some of those rewards will be far smaller than in the past, and some will be far larger. As companies reevaluate who possesses the intellectual and human capital most important to their business and restructure jobs, they will likely restructure rewards such as deferred compensation and retirement benefits. It would be unsurprising to see significant deferred benefits which require periods of employment for vesting. Primary retirement plans for most employees now likely use a defined contribution model. Employers are increasingly adding features to plans to optimize them without much employee management. Individuals who function as independents and work with different clients will, as a result, likely be largely responsible for designing and managing their own retirement asset building. The introduction of pooled third-party pension programs that manage this will likely be a growth area.

3.2 NEW INCOME GENERATING OPPORTUNITIES

3.2.1 RISE OF DICE (DISTRIBUTED INCOME COMPENSATION ENTERPRISES)

Referred to as the gig economy, "Uberization," or the shareconomy, we are seeing the emergence of companies and networks that disintermediate transactions and businesses by hiring dispersed populations to perform work or offer goods or services in new ways. Workers, creators, buyers and sellers are reconfiguring the income-generating landscape. One of the most important avenues is the explosion of what we have termed DICE – *Distributed Income Compensation Enterprises*. Efficient markets could spawn tens of thousands of new DICE whose products and services are developed to meet real needs. They take many forms and are [emerging in many places](#)⁵¹.

Three major forces for change are converging to create a world in which DICE proliferate, all of which have enormous consequences for retirement planning and sustenance:

1. Important technologies are becoming symbiotic, mainly: the internet, blockchain, virtual currencies, big data, satellite and mobile communications.
2. AI and robotics are rapidly replacing many existing jobs, leading people to become highly creative about how to gain income.
3. New lifestyles and life stages are opening individuals up to purchasing and providing goods and services that were not seen as valuable or needed earlier, and people are open to doing those in entirely new ways.

In September 2019, [the California legislature approved a bill](#) that required companies like Uber and Lyft to treat their contract workers like employees⁵². This was one of the efforts that signaled a major shift in reshaping security and compensation in the emerging gig economy. Over time, DICE could become the most significant income-generating sector in the economy. Consequently, retirement security would need to be completely reimagined. Retirement calculations and tax codes can be significantly impacted as deductions, savings, benefits, offsets, barter and community codes are shifted by the rapid and overwhelming emergence of DICE.

3.2.2 THE CREATOR ECONOMY: PROFESSIONALIZING INFLUENCE

An economy built around capturing and maintaining consumer attention has long been building. Attention, like time, has been assigned monetary value. The *Creator Economy* is defined by people who build audiences online and

find a way to make money from them. [Over 50 million people around the world](#) consider themselves creators, and the creator economy represents the fastest-growing type of small business globally⁵³. The business of influence is professionalizing, too. [Many successful YouTubers are now like companies](#)⁵⁴. New startups are making it easier for digital creators to monetize every aspect of their life. As the market gets more competitive, [creators are devising new, hyper-specific revenue streams](#)⁵⁵. Emerging, too, are new influencer markets, including aging influencers. According to studies, baby boomers control 70% of all disposable income in the U.S., spend 15 hours online every week and largely believe that social media improves their lives. They also spend more money online than younger generations – about \$7 billion a year. Yet, most marketers set aside only 10% of their budgets for boomers while allocating 50% to Millennials. Seniors are using online platforms to share their favorite products and build their personal brands. More brands are including [“granfluencers”](#) in ads and social content⁵⁶. The pandemic accelerated this as it [pushed more aging people online](#)⁵⁷.

One of the most important implications of the Creator Economy is the democratization of income. It is shifting power dynamics in completely new ways. How creators are ultimately classified will have a profound impact on their retirement benefits. Will they solely be responsible for their retirement planning? Will they be considered “free agents?” Perhaps multiple companies/brands will contribute into a pot for retirement savings that is ultimately owned, managed and made portable by creators themselves? How might these be designed and priced? This burgeoning ecosystem is still too nascent to say for certain, but there is certainly opportunity for actuarially designed plans to spring up around the creator economy in coming years.

Section 4: Redefining the Landscape – Technological Trends

Several rapidly advancing technologies will likely profoundly impact the macro environment of the future. They include: AI; Virtual reality (VR); Gamification; WEB3 – Cryptocurrency + the blockchain; The rise of social media fueled MDM (Mis-, dis- and mal-information).

4.1 AI, AUTOMATION + THE DISPLACEMENT OF HUMAN LABOR

Artificial intelligence (AI), smart systems, robotics, and the rise of deep learning and the neural net will likely be responsible for disintermediating an increasing number of global human workers in the future (see “The COVID-19 Trend Accelerator”). Many jobs previously thought to be uniquely “human” can already be done, or will soon be done, as well or better, by advanced technology. Far more evolved than simple outsourcing, the authors have long referred to this displacement of human labor as *othersourcing*. By 2025, as much as a quarter of current professional jobs will be threatened by advances in [big data and machine learning](#)⁵⁸. A McKinsey study suggests that the “[automation bomb](#)” could destroy 45% of work activities currently performed in the U.S., and reports that nearly half of all work will be automated by 2055⁵⁹. Much of this is driven by the decreasing cost of technology. This displacement is occurring along a spectrum that now extends from *manual* labor to *cognitive* labor, and it is even starting to impact *emotional* labor.

4.1.1 DISPLACEMENT OF MANUAL LABOR

Displacement includes many of the jobs typically considered “blue-collar” (e.g., assembly line & factory workers, manufacturers and stock clerks). This displacement has been underway for a long time, as robotics has steadily proven to be more efficient and cost-effective in many of these areas.

4.1.2 DISPLACEMENT OF COGNITIVE LABOR

McKinsey, in its research, also posits that many of the jobs typically considered “white collar” (e.g., doctors, radiologists, lawyers, financial analysts, insurance brokers and traders) are also now at risk of othersourcing. Some of these job areas may not be completely disintermediated, but technology may play a major role in altering the nature of jobs for many of these professionals. Digital assistants most likely will increasingly become our collaborators and make us better at our jobs. For example, telemedicine and robotics will collaborate with doctors to enhance their capacity for effectively treating patients. In a 2017 study, 30% of U.S. workers agreed, or strongly agreed, that their current jobs will be replaced by new technology. And 37% agreed that [an “unbiased computer program” would be more trustworthy and ethical than their current workplace managers](#)⁶⁰.

4.1.3 DISPLACEMENT OF EMOTIONAL LABOR

This is all now headed toward something most people found inconceivable not long ago – [the displacement of emotional labor](#) (e.g., therapists and caregivers)⁶¹. Having advanced AI recognize human feelings, and express the appropriate feelings in return, is a challenge, but templosion is fast creating entities that are beginning to trick humans into thinking they actually have consciousness and emotional capacity.

4.1.4 MOST JOBS ARE STILL HERE...BUT THEY'RE CHANGING

The jobs that will be in high-demand – and increasingly, created – in the future will be those that are more personalized, one-off, and perhaps one-of-a-kind. These jobs require more people skilled in critical thinking, unique problem solving, interpersonal relations, and specialization that is more localized and individualized. There will likely also be a resurgence in certain types of work that have been devalued in recent decades throughout much of the developed world (e.g., mechanics, carpenters and plumbers) – since these types of services will always be in demand and are not as easily automated. But even as these people come to earn more than many of their white-

collar counterparts, many now are not covered by pension plans. There is a need, and a real opportunity, for innovation here, because the people who perform these jobs well will continue to be indispensable, even in a changing economy – and, yet, they still do not have access to the same menu of structured retirement planning choices that those in other career fields do.

Not all aspects of the human job function will go onto software in this evolution. It is simply that the role of the human worker in this new ecosystem is going to evolve. Self-awareness, social intelligence, adaptability, cognitive flexibility, and the desire for human connection will all become increasingly important. As will creativity, critical thinking, empathy and cultural sensitivity. These would lead to an even higher premium on identity, fulfillment, meaning, purpose, and autonomy – all things necessary for well-being but absent in today’s average job. It will be imperative that people become lifelong learners. Because of *templosion*, knowledge becomes outdated at a greatly accelerated rate. Part of lifelong learning will be [“unlearning”](#) or forgetting knowledge that is no longer useful⁶². This is especially important as the average lifespan is expanded. Unlearning is also important to all professionals, including pension professionals, whose work is based on workplace (which we now choose to call workspace, since much work can be done anywhere) and workforce assumptions that are no longer valid.

4.2 VIRTUAL REALITY (VR)

Relatively few [VR tech firms are currently targeting the senior set](#). One company describes its content as being able to provide more than entertainment: it can also serve as therapy to ward off the effects of social isolation and the physical toll of aging⁶³. Industry experts predict that today’s \$6.1 billion VR market will be worth [\\$21 billion by 2025](#), and that number could grow even larger if those age 65 or older, who constitute 16% of the U.S. population, embrace the technology⁶⁴. [Social isolation](#) comes with significant medical costs. It has been associated with a 29% greater risk of heart disease and a 32% greater risk of stroke⁶⁵. VR could help combat these problems.

Behavioral economists are studying [how VR might influence individual behaviors](#). An experiential VR tool, created by a prominent financial services company, is the latest twist on the traditional retirement calculator. It is a visualization of your financial life, in which you work to save for retirement. It is intended to replicate the feeling of market losses and gains without any real-life consequences. Investment companies are paying greater attention to online tools while developing new ways to present retirement concepts visually and provoke more interest in financial planning⁶⁶.

4.3 GAMIFICATION OF RETIREMENT

A report published in May 2022 by the [Board of Governors of the Federal Reserve](#) system showed that 40% of non-retirees thought their retirement saving was on track, up from 36% in 2020 and 37% in 2019. Twenty-five percent of adults who retired in the prior 12 months, and 15% of those who retired one to two years ago, said factors related to COVID-19 contributed to when they retired⁶⁷. However, IRI’s [“Retirement Readiness Among Older Workers”](#) report found that only 26% of respondents correctly estimated how much annual income would be required in 10 years to maintain their standard of living when the annual inflation rate is 3%⁶⁸. The overall lack of financial acumen among many pension plan members poses several challenges. And in this context, techniques like gamification can serve as a powerful alternative to the booklets, seminars and personalized financial planning advice many people have grown accustomed to.

[Games can bring more people into a conversation about retirement planning](#), making it less stressful and boring. While the individual retirement account market is expanding to include Millennials and Gen Z, one of the fastest-growing demographics for video gaming in the U.S. is Baby Boomers⁶⁹. TIAA has been using gamification strategies for retirement planning for a decade or more. TIAA identified that half of plan sponsors were only [‘somewhat confident’ in their employees’ retirement futures](#). Most sponsors worried that employees are not saving enough (75%) or not choosing to actively participate in their retirement plan (55%)⁷⁰. Those statistics, coupled with the fact

that Millennials are now the [largest generation in the workforce](#)⁷¹, prompted TIAA to launch [Financial IQ](#), a game that allowed employees to compete against one another in a series of financial education quizzes, and even allows clients to build their own questions tailored to their individual retirement plans⁷². An app called [AgingBooth](#) aims to get employees to think more concretely about their future, older selves – and motivate them to make financial plans⁷³. Forward-looking service providers may increasingly feel the need to incorporate popular gaming elements into their 401(k) employee training programs. These examples may be the role models for the future.

4.4 THE RISE OF “WEB3”: CRYPTOCURRENCY + THE BLOCKCHAIN

Today, there is considerable talk of ‘WEB3’ – the next iteration of the internet, characterized by disruptive, new foundational technologies including the blockchain and cryptocurrency. A [blockchain](#) is a decentralized ledger of all transactions across a peer-to-peer network. Using this type of technology, users can confirm transactions without a need for a central clearing authority⁷⁴. Could blockchain technology help streamline the process of pension management? And could it eventually give pensioners greater control over their money and investments?

The blockchain is also the enabling technology for cryptocurrency payments and trading. For all the wealth accumulated in the world of [cryptocurrency](#) in recent years, the best way to pass it along to the next generation is still very much a puzzle – even for the experts. Yet as more crypto holders need help structuring their wealth, the staid world of estate planning is still playing catch up⁷⁵, and divorce lawyers are struggling to divide crypto assets. Research indicates that [those who hold cryptocurrency purely for investment purposes](#) are disproportionately high-income and typically have other retirement savings⁷⁶. Pension and group insurance plan administrators often rely on facility of payment provisions to allow them to pay someone else when a beneficiary is deceased or incompetent. This becomes even more complicated when a beneficiary might have had crypto assets tied up in a “wallet” that is not easily accessible. At the broadest level, crypto literacy will likely become a more critical competency. With it, people will need more guidance on everything from adding crypto to their retirement portfolios to the need for crypto insurance. And before that, most people will simply need a basic lesson in “Crypto 101.” Both crypto scams that target the elderly and crypto camps that target children would most likely also continue to grow.

4.4.1 THE CAUTIONARY PRINCIPLE

But the crypto ecosystem is fraught with uncertainty and risk. Even for wealthier individuals, the fluctuations in, and vulnerabilities of, the rising number of cryptocurrencies present a huge challenge if they are to be any meaningful part of a retirement portfolio. Most cryptocurrencies are too new to project or model their performance over time, and some have blown up altogether. In fact, 2022 has been called by some the [“Crypto Winter,”](#) and has seen what was valued as a nearly \$3 trillion market in late 2021 nosedive in only one year to under \$900 billion in December of 2022. This market fallout includes the spectacular collapses of major players in the crypto ecosystem such as FTX, Celsius Network and Terraform Labs⁷⁷. Despite all of this, there is a vital future for crypto and non-fungible tokens (NFTs), and pension professionals will be forced to understand them a great deal more than they now do. The inflection point will likely be when [global regulating bodies](#) are finally able to play catch-up and effectively regulate an important but still emerging ecosystem which has, until now, remained something of a wild frontier⁷⁸.

4.5 RISE OF MDM (MIS-, DIS-, MAL-INFORMATION): IMPACT ON TRUST + TRUTH

The world right now is confusing and disorienting. We live in a reality in which the actual truth and illusions of the truth are nearly indistinguishable. In psychology, the illusory truth effect describes how, when we hear the same false information repeated over and over, we can come to believe it is true. This powerful effect can happen even when people initially know that the information being presented is false. Today, we have access to more information and informed opinions than ever before. Yet, increasing political polarization and [misinformation](#) are making it hard to know who or what is truthful⁷⁹. [Domestic disinformation](#) is happening at scale and is a much more complicated issue to fix legally, morally, and politically than foreign influence campaigns⁸⁰. Today, the search for

truth exists within a hall of mirrors, exacerbated by rampant distrust and misinformation. As a result, truth – including access to truthful messaging and content – has become a *luxury*.

Alongside truth, trust is also considered a luxury. As artificial intelligence (AI), smart systems, advanced software, robotics and the Internet of Things (IoT) increasingly permeate everything around us, people – often voluntarily – are getting swept up in a digital undertow. And, within this context, there will be a growing vacuum of trust. Who – or what – has access to our data? How are they using it? Is our information secure? Is anyone watching us? Are there proper safeguards in place for all the technology we use? Trust will become one of the most valuable currencies of the future. Authenticity (or trustworthiness) of messaging – and the source/s of that messaging – will surely be more important than ever. In November 2022, [OpenAI released its bot ChatGPT](#) to considerable publicity, fanfare and controversy⁸¹. AI like this uses tools called large language models (LLMs) that can read, summarize and translate texts and predict future words in a sentence letting them generate text similar to how humans talk and write. In some cases, the output resembles “original” thought developed by the AI itself. This portends a world where we may often simply not know if content or information we see is human-generated or AI-generated.

Organizations of all kinds, both public and private, will most likely be scrutinized more carefully than ever before. In the end, the future will be characterized not by cybersecurity but by cyber~~in~~security. No systems, be they public or private, can be entirely safeguarded. If we operate from that reality, it changes our approach toward risk. It will be increasingly important to pay attention to this issue for any retirement systems that hold retirement funds. In this environment, people will spend increasing amounts of money to purchase trust, and much of that may be offered by other humans who better understand technology. This includes a fundamental trust – which is currently waning – in the financial sector to protect one’s assets and honor commitments that may still be decades out.

4.5.1 DEVOLUTION OF PUBLIC DISCOURSE

In the financial world, public discourse is becoming more confused than rancorous. The proliferation of novel currencies, concerns over inflation, the escalating costs of housing and healthcare and the creation of financial institutions of all types are leading to a greater imbalance of those who “know” and those who “know not.” People who can capitalize quickly on the latest or best financial/market/system information are wealthier than they ever imagined they could be, while more and more people are left out of the loop.

Retirement and retirement plans were once understood in the context of a more level (although still unequal) playing field, with conversations about money (government fiat) and other currencies that were more widely understood: stocks, bonds, real estate, commodities. Now, numerous developments are converging to make understanding of wealth, retirement planning and conversations about retirement more difficult:

- Money does not work as it once did. Its ability to provide future healthcare or desirable housing has been diminishing as the baby boom population balloons, and younger populations gain wealth, causing enormous pressure on competitive pricing.
- According to a report from late 2021, there are [nearly 400,000 people](#) in the U.S. working at least 40 hours per week as YouTube creators and earning income – sometimes significant income – from the venture⁸². In addition, some people continue to amass fortunes through avenues like venture capitalism while others have worked their entire lives and have nowhere near a comparable amount of wealth. The number of hugely wealthy individuals has ballooned while many who thought of themselves as middle class now struggle to make ends meet. That inevitably causes resentment.
- Professional reliance, including financial executives and actuaries, are all threatened by alternative paths to authority: the internet (including now AI?), siloed belief groups, heightened competition in the service sectors of finance, healthcare, economic forecasting and modeling, and real estate. What and who to believe/trust are now far more complicated than ever before.

- Anxiety is on the rise globally. COVID remains a factor, but climate change, crime, global conflict, strained supply chains, other pandemics, civil unrest and culture wars, etc., all fuel rising anxiety.

4.5.2 THE INCREASED INCIDENCE OF SCAMS – AND THE VULNERABILITY OF OLDER POPULATIONS

In 2016, technologist Aviv Ovadya warned about the growing threat of fake news on social media. He later added that the worst was yet to come in what he calls an [“infocalypse”](#) – fueled by AI-assisted misinformation campaigns and propaganda. That future, according to him, will be brought on by simple, and eventually seamless, technological tools that can manipulate perception and falsify reality using machine learning and AI⁸³. And this may only be the beginning. [Deepfakes](#) (convincing AI impersonations) are one of the newest forms of digital media manipulation⁸⁴. [Baidu](#) has developed an AI program that can clone voices after analyzing even a seconds-long clip, using a neural network. The program produced one voice that fooled voice recognition software with greater than 95% accuracy in tests⁸⁵. [Malicious AIs](#) will be too clever and stealthy to combat other than with other AIs⁸⁶. Fake accounts, deployed by governments, criminals and entrepreneurs, now infest social media networks. As many as 15% of Twitter’s reported active users may be [automated accounts designed to simulate real people](#)⁸⁷. From an industry perspective, financial advice, communications and accounts are all becoming more susceptible to hacking, deep fakery, scams and MDM (mis-, dis- and mal-information). This will be a growing concern for financial/retirement planners and providers. But in this ecosystem, and as is often the case, legislators and regulators may struggle to keep up with the advances and adoption curve of these technologies.

Section 5: Redefining the Landscape – Health + Long-Term Care Trends

When it comes to financial services in the U.S., Social Security, and particularly Medicare, further strained by [potential earlier depletion of the SS Disability Insurance Trust Fund](#), will likely continue to see challenges as the baby boom continues its way into retirement⁸⁸. Financial services will most likely be transformed by gerontopoly, and that includes health and long-term care insurance. The health and medical industries may, as a result, also be reshaped. Caring for the aging population will most likely be one of the hottest sectors of the economy, with demand for employees well outstripping the supply of workers trained in the field. What is today mainly physical care will extend to [psychological care](#) as well⁸⁹. An estimated [6.5 million Americans aged 65 and older are living with Alzheimer's](#) in 2022⁹⁰. The number is [expected to rise substantially](#) over the coming decades⁹¹. The care and infrastructure for those suffering from dementia is already amounting to huge expenditures and may well become a sub-industry unto itself. Indeed, mental health may become a far more costly challenge than physical health when it comes to paying for long-term care. And, overall, preventive care is expected to become a much larger segment of gerontopoly as life extension expands. All of these considerations will be critical for the future of retirement planning and pensions.

5.1 LIFE EXTENSION & THE MORTALITY HORIZON

The mortality horizon is the authors' term to describe the length of time in one's life which extends from the age when the first 5% of one's age cohort has died off to the point when the last 5% of the cohort will die off. It is an approximation of a moving number, but we can argue that the mortality horizon in the U.S. today is about 50 years, from age 50 to age 100. Massive disruptions like COVID or climate disasters can move the projections somewhat, but absent complete cataclysm, that is the general mental and emotional timeframe in which someone does not know if they have one year or many more years to live. Within that extended span of uncertainty, decisions about what one needs to financially sustain one's life become arbitrary, and subject to frequent changes. Older generations are also more vital than ever before – and that is because life is generally being extended in the middle of life, versus at the very end of life. This is all combining to create major challenges for social, labor and health systems. Uncertainty and fluctuations in life expectancy are disrupting forecasts on pension schemes. For example, every year of increased life expectancy could increase pension plan liabilities by three to four percent. Therefore, [understanding longevity expectations](#) from year-to-year is important, as these forecasts enable organizations to accurately project the full extent of their liabilities and make informed decisions about financing⁹². But these same realities also disrupt individuals' ability to arrive at the same conclusions.

5.2 EMERGING WELLNESS ADVANCEMENTS

Not only is life being extended, but quality of life is also continuously being improved through new health and wellness advancements that, taken in combination, could make a significant impact for aging populations. Some researchers are now committed to defining [aging as a disease and not an inevitability](#)⁹³. Similarly, behavioral economists are studying how letting people experience the future today by watching their avatars in virtual reality can change present-day behaviors and ensure a healthier old age. Currently, scientists are pursuing regeneration of organs, pills that can re-engineer circadian rhythms and therefore metabolism, novel gene editing technologies (e.g., CRISPR), and other forms of cellular modification. Research also shows that the fats we eat can be modified to slow down aging. Findings that [link gut bacteria to our brain](#) demonstrate how our biome may affect our mortality and morbidity⁹⁴. On the personalized technology front, robotics and sensors are being designed to swim through our bodies for diagnostics, time medication release via ingestibles, and communicate with healthcare providers using wearables. And [meditation](#) is increasingly seen as an important modality for lowering healthcare costs⁹⁵.

5.3 LONG-TERM CARE CONSIDERATIONS

The [global remote patient monitoring market](#) was valued at \$30.5 billion in 2021 and is expected to reach \$62 billion, growing at a CAGR of 12.5% during the forecast period⁹⁶. Fourteen million people in the U.S. require long-term care (LTC). There are somewhere between 30 and 50 million family members who are caring for them – and [those family caregivers increasingly need support](#)⁹⁷. The [Center for Retirement Research at Boston College](#) estimates that about 55% of Americans will have low to moderate LTC needs and 25% will have “the type of severe needs that most people dread.”⁹⁸ The [Rosalind Carter Institute](#) found that 20% of U.S. workers identify as family caregivers. On average, these caregivers report about 20 hours a week of caregiving, so another half-time job. And almost a third of workers report having left a job at some point during their career because of caregiving responsibilities⁹⁹. This will become even more of an economic factor as health advances have the capacity to extend life. “Healthy aging” products are multiplying, having been boosted by COVID. Video visits with physicians and physicians’ assistants are replacing many kinds of in-person visits. China is betting on so-called [virtual nursing homes](#), which allow aging citizens to call a hotline and request a variety of in-home services¹⁰⁰. And [spending more time in nature](#) has been shown to speed up recovery from illness, so hospitals have been integrating elements of nature into medical facilities¹⁰¹.

As lifespans increase, as the mortality horizon expands and becomes more uncertain, as quality of life for aging populations improves, and as costs of both mental wellness and long-term care rise dramatically, both retirement planning and pension plan design and administration will most likely be propelled to adapt and evolve.

Section 6: Redefining the Landscape – Environmental Trends

Climate change is one of the most important issues facing society today. It becomes even more important over the extended time horizon of retirement plans. Climate refugees, shifts in water supply, replacement of buildings and transportation infrastructure with net-zero technology, and severe weather events all have implications for career trajectories and pension plans. Public health and safety, whether from pandemics, excessive heat, failed crops, flooded homes or wildfires, are at a turning point. Climate change can affect almost every aspect of doing business or running a governance function – including the design and delivery of retirement plans. It is expected to also determine near- and long-term investments, legislation, and regulations. It will be increasingly important to consider the vulnerability of assets (for oneself and one's dependents/loved ones) as a result of climate change.

Climate shifts and weather-related catastrophes, from floods and droughts to wildfires to hurricanes to freezing, are now among the most prominent drivers of mass migration among global populations. In 2018, the World Bank estimated that three regions (Latin America, sub-Saharan Africa, and Southeast Asia) would generate [143 million more climate migrants by 2050](#). And it could be argued that this estimate is conservative. In 2017 alone, 68.5 million people were forcibly displaced, more than at any point in human history¹⁰². These macro forces not only jeopardize the retirement futures of directly affected individuals, but they also put great strain on the infrastructure of affected nations – particularly those that intake more climate refugees.

Across developed markets, retirees often choose to live in coastal or near-coastal areas which are increasingly vulnerable to extreme weather events. Not only does that increase their risk of displacement, but it also [puts at risk their homes which for many retirees is their primary asset](#). It is becoming far more difficult and expensive to insure homes in vulnerable areas, and this puts the financial prospects of many retirees at far greater risk. It can also devalue homes that retirees are relying on as part of their equity/asset portfolio to support them into the late stages of retirement¹⁰³. Risk modeling, including actuarial science, is increasingly evolving to factor in [climate resilience](#) and keep pace with, and account for, the contingencies associated with increasingly likely and severe environmental events¹⁰⁴. The sustainability and solvency of pension funds must now rely on stress tests around climate impacts on investments – which will become distressed assets as adverse environmental conditions advance.

Section 7: Implications

There are a handful of immutable realities that will fundamentally reshape the future landscape for retirement and retirement planning. Chief among them:

- With defined benefit programs already in retreat for decades, defined contribution policies will also be under pressure as fewer people stay long enough in their jobs to vest in meaningful employer-sponsored retirement programs. Vesting can go in two directions for employer-provided retirement benefits to be meaningful: shorter times of employment required and expanded portability.
- Economic inequality has long been a growing problem in the U.S. The pandemic has made those at the lower rungs of the economic scale even more vulnerable. They have long been heavily dependent on government programs in areas like healthcare and food and housing insecurity, and that could continue given recent circumstances. The most vulnerable are likely not in any condition to save for retirement. That requires innovations in areas like tax codes, barter and community service credits, which can aid those who cannot exchange current money for future money.
- Life extension and health/medical advances not only impact actuarial projections, but they can profoundly affect the choices individuals make as they head into a potentially longer and definitely less certain future. As future generations will rely more heavily on defined contribution plans, there will likely be an increased need and demand for better financial education and access to lifetime income security.
- Increasing political polarization makes it so that we cannot accurately forecast where public policy issues related to retirement and the drivers of retirement may be headed.

It is important to note that there are themes relevant to this report that are worth tracking into the future and which currently do not have as much supporting data as other areas outlined herein. These areas include:

1. **Blended families:** Blended families are more common than ever (see section 2.2), however global data on blended families remains scarce. The countless types of blended households, in aggregate, are expected to have a major impact on the population's retirement assets and projected needs going forward.
2. **Cultural Variants:** There is not much data to help us understand different immigrant cultures or international attitudes and realities when it comes to retirement, retirement planning, and retirement financing. Furthermore, rising rates of refugees may inflate diasporas that feel committed to supporting relatives here or elsewhere, and we have little idea of the size or effect of those commitments.
3. **Tax practices:** Local, regional and national tax policies are under pressure, and there is no good data on the long-term best practices in a tight budget scenario that would come to the aid of those struggling with retirement expenses or incomes. For example, people forced to leave their homes because of rising real estate taxes not accounted for in their fixed income projections, and local laws that do not allow them to create multifamily housing in their single-family home.

7.1 SHIFTING ROLES IN RETIREMENT SECURITY

Role of Governments: Government programs are the major source of retirement security for many Americans. And in certain other countries, these systems are all that exist. While the role of government may well change in the future, it is highly probable that government programs will continue to play a major role in retirement.

Current programs for low-income Americans include Social Security and additional income support, some housing support, nutrition support, Medicare and Medicaid, and other government programs. Medicaid is a major payor for long term care services and supports. Government grants (from either local, state or Federal programs) can also support community services and non-profits. For very low-income individuals, there are many different programs, but often the benefits are not available to everyone who can meet the qualification standards and the benefits may not be adequate to meet the need. For middle resource Americans, the major current direct public support is Social Security and Medicare. Government also plays a major role in retirement security and the well-being of the older population through a wide variety of policies and programs:

- A growing number of states sponsor retirement savings programs mandated for individuals without an employer plan.
- Government policy can define mandates related to financial security programs. For example, there are mandates attached to Social Security, Medicare and state savings programs.
- Tax policies define what types of services and programs can be provided by non-profit entities and impose requirements on them.
- Tax and other public policies define what types of retirement programs can be provided on a tax advantaged basis by employers and financial services companies. These policies also influence how much people save for retirement.
- There are many possible innovations in housing, and there is a shortage of affordable housing. Zoning and other regulations influence the development of affordable housing for older individuals and the development of new options.
- Regulations and the provisions of public programs influence how and when people retire and whether partial retirement is feasible.
- Work options offered by private employers are also influenced by public policy and regulations including anti-discrimination regulations, employer policy and Medicare policy.
- The availability of healthcare for older Americans is highly influenced by Medicare and Medicaid, and the availability of care is also influenced by public policy and support for the healthcare system.
- Choices available to people at the end of life, and choices about how they will die, are influenced by policy, primarily at the state level.

Government will likely continue to be a major provider of retirement security and a major influencer of well-being for older individuals through a wide range of policies. The overall level of economic stability, as well as the political will, of the current government will likely influence the direction of these policies. Expect more focus on improving the status of the older population in times of economic stability and growth, and less in difficult economic times. An early important step is for policymakers to recognize the importance of changing demographics and think about how to address them. That depends on the overall public agenda and whether there is energy to focus on these issues which will be increasingly challenging as older populations grow larger than ever before.

Role of Employers: Larger employers are more likely to offer benefits than small employers and this is unlikely to change. However, pooled plans are likely to grow and offer new options to employers. Outsourcing will also likely continue to grow. It is unclear how important retirement options will be in a competitive employment package.

Role of the Family, Household and Community: In some segments of our society, security and support in old age has come primarily from the family and community. For this purpose, families have been defined in different ways including multi-generational and extended families. Neighbors and friends have also been sources of support. Individual support systems are not expected to decline in importance, but with people moving more from community to community and with declines in fertility rates, the effectiveness of these systems will be critical. As

the number of solo agers grows, establishing support systems that work will be increasingly important. Shortages of paid caregivers will also make them critical. These personal support systems will continue to be important, and they may be enhanced and supported by new technologies. The Village-to-Village movement offers a model for the growth of local support systems not based on family.

Shifting Ideas About Older-Age Security: Our collective response to an aging society has progressed at a relatively glacial pace. Much of what we do is still based largely on an industrialized economy – with outdated metrics that make little sense based on where the world is heading. Many of the same employment issues that existed 25+ years ago – during a previous economy – still exist today. Social Security is still based on the [family structure of the 1940s](#)¹⁰⁵. And [the system for calculating annual cost-of-living adjustments](#), or COLAs, may also benefit from consideration of further evaluation. The purpose is to allow seniors to maintain buying power as living costs rise and this is especially important to consider for the specific cost increases seniors face. Healthcare inflation, for example, has soared in recent years, and seniors are often more burdened by medical expenses than younger people are.

A major problem in addressing the future of retirement and pensions is vocabulary. For example: *security* is not the same thing as *finances*. [In Japan](#), the oldest nation in the world, members of the poor aging population often use the criminal legal system for security. They shoplift, get arrested, and get put in jail where they get shelter and food¹⁰⁶. That is not, by a longshot, the ideal way to attack the security needs of an older population, but it does illustrate how ingenuity offers what traditional systems do not provide. Another example: *caregiving* is not the same thing as *caregivers*. The former is the goal, while the latter implies people. Turning again to Japan, we find [a sophisticated network of remote sensing, monitoring and assistance](#) in a world where the dependency ratio does not support human or financial support for the aging population¹⁰⁷.

Pension plan sponsors of all types, but especially unions who sponsor multi-employer pension plans for workers likely to be displaced by technology, and state and local governments on the front lines of climate change may feel the challenges most on their financial bases. Climate disasters, shifting demographics and incomes, virtual currencies, decentralized businesses leaving downtowns, reorganized funding for and shortages of first responders can all contribute to this among others.

If pension defaults are to be minimized or avoided, truly creative solutions should be considered. For example, pensioners might be given equity shares of abandoned or surplus properties which, when converted into housing or commercial spaces, can generate income to them as shareholders. Urban agriculture – including community gardens, abandoned malls converted to farms, rooftop greeneries – can convert volunteer farm work by retirees into food allowances. Medical providers might be given subsidies for malpractice insurance or tax relief in return for lowered costs to pensioners who access their services. Some of these involve risk-sharing, some do not. But crowdsourcing ideas such as this, and the business plans attached to them, would be a useful avenue for pension plan sponsors to undertake to avoid total default on their pension promises.

7.2 THE NEED FOR A SHIFT IN THINKING FROM MONEY TO ACCESS

It is difficult to have a retirement planning conversation with someone who no longer trusts traditional authority, who no longer trusts their future purchasing power in comparison to others, and who remains anxious about so many things. It may be time to shift the paradigm from monetary reserves to assured access. People use retirement money as a means to an end: being able to afford their current home or being able to live in a future community that suits their needs, being able to enjoy certain recreational and leisure activities, being able to access state-of-the-art healthcare options and being able to eat a healthy diet. The assumption that money paid at a future date equals access to what is expected is no longer valid.

Perhaps the better path to productive conversations about benefit plan design is to isolate the desired deliverables, to stop thinking about money and, rather, to think about access to each need separately. For example, is there a

benefit to change zoning and tax policies that prevent older people from renting out parts of their homes or keeping up with property taxes. Or the provision of more food cooperatives in cities. Or the promotion of barter systems that allow professional services to be traded for volunteers' time in service to the community. Or learning from best practices in long-term care delivery (e.g., remote monitoring, robotics and sensors, home-based alternatives).

Virtual reality (VR) could also be a game changer. Currently, the people who spend the most time in virtual worlds are younger, but [online gaming is highly popular with older population segments](#), and luring them into virtual worlds could be a creative and successful way of addressing retirement issues¹⁰⁸. Given the epidemic of loneliness for elders, which exacerbates healthcare costs, further research, [like that done for veterans](#), into the relationship between the brain, physical health and entertainment, and the ability to cultivate purpose and communities in the virtual world are all important avenues to explore¹⁰⁹. Perhaps an important role for employers in the coming years is in the guaranteed provision of virtual technologies to those of retirement age in lieu of just money.

The size of the veteran population with health and housing needs is increasing. Likewise, the prevalence of the mental health crisis even aside from Alzheimer's can represent clear challenges to personal and financial security, including those afflicted with autism, concussion, depression, PTSD, substance addiction, and extreme anxiety. Separating out distinct future needs of the entire population (housing, healthcare, mental healthcare, community involvement, food, leisure, transportation and entertainment) is not only a productive way to work towards better retirement policies, it can also elevate the kinds of discussions individuals can knowledgeably engage in (whether personally or in the public policy domain) regarding their own retirement – what needs to be done now to gain future access to each individual need, as opposed to having an unknown and untrusted pool of money to cover the whole spectrum of needs.

7.3 CONSIDERATIONS FOR GLOBAL CORPORATIONS

While much of this report focuses on the U.S. and other developed markets, we must consider the complexity of future retirement and retirement plan issues for global corporations. While Japan (cited earlier) is often a harbinger of important technological and demographic trends, China is now the same. China's [one-child policy](#) has led to a situation where the nation faces the prospects of a massive aging population and future shortage of workers¹¹⁰. As a result, China is moving to [raise the retirement age](#) as a way to keep people in the workforce longer¹¹¹.

And we are likely to see more of a push to raise retirement ages around the world. One prime example right now is in France, where the government seeks to enact [controversial pension reform](#) which includes raising the retirement age by two years. The proposal is being met with considerable resistance¹¹². All of this activity will obviously impact the global workforce and potentially exacerbate intergenerational tensions in the workplace. And in the future, global enterprises could offer pensions or other retirement benefits denominated in cryptocurrency. Growing concern about the volatility of crypto could be an impediment, but it is increasingly plausible that many workers are at least given the option – especially if cryptocurrency becomes better regulated.

7.4 INCREASED NEED FOR FINANCIAL LITERACY

The issue of financial literacy, or lack thereof, among younger populations has long been in the spotlight. But the issue is just as important for [aging populations](#) – including those approaching retirement age or already in retirement¹¹³. First, many new technologies have made the investment environment more complex. Second, economic uncertainty has put the future of some public programs in jeopardy. If the foundational sources of retirement income become threatened, or go away, are retirees prepared? Third, as mentioned in the demographic section of this report, with expanding lifespans and mortality horizons, retirement considerations have become more difficult to quantify with any certainty. Financial literacy curricula [must evolve to be far more relevant and adaptive in an increasingly complex environment](#)¹¹⁴. And this will be critical for aging populations and for those in younger generations who are tasked with already planning for their retirement futures.

7.5 CONCLUSIONS

The straight-line extrapolations of demography, government income, healthcare costs and economic constraints are bleak. They have been for several decades. The potential defaults on state and local pension promises, Social Security and multi-employee retirement plans are still in the wings, and their possibility increases with each year we do not address the shortfalls. Healthcare costs are still a significant percentage of the GDP. Add to this the [growing income inequality](#) which has been a big issue in the U.S., and elsewhere, for a long time¹¹⁵. This could now combine for a large cohort of financially fragile people who may be unable to save for retirement.

Addressing all these systemic issues requires not only sufficient information, but also seeing beyond traditional ideas, systems, institutions, and technologies. Science is changing, the marketplace is recognizing the needs, professions are morphing with marketplace realities, and in times of chaos, imagination is key. As we think about the future, there are many certainties supported by data, and there remain many unknowns. Dealing with the future of retirement plans will require modeling and planning that includes recognition of both – certainties and unknowns. Techniques like modeling and scenario testing enable building-in a range of outcomes for change that cannot be well predicted. Demographic and family trends will bring a different future, and technological evolution can lead to many opportunities and challenges. Longer lives mean that adapting to different ways of thinking about the life cycle are important. While some individuals have known this for a long time, many institutions have not adapted.

To jumpstart new conversations around the future affordability of sustaining older populations, the following are several areas for consideration:

- Understand that the solutions for seniors are easier to consider when the problems are disaggregated, and each looked at across all similarly affected populations. Stakeholders can work together to assess seniors' needs on a more differentiated basis and work to develop solutions that align with the public at large. This could allow for design thinking and novel technologies available to all, and it would relieve much of the financial burdens assumed by governments and private entities when aimed at seniors alone.
- Recognize the combined powers of temprolosion, the extended mortality horizon, diamonding and the shift from mankind to mindkind to spur new rounds of imagination and innovation.
- Consider research into new initiatives in housing and healthcare delivery (both short- and long-term). Take the examples of the successful initiatives already in existence and work with relevant entities to apply them to the senior population to reduce future costs and lack of access.
- Consider the ways retirement planning and the plans themselves can be reformatted to new employment patterns, including those that let older people stay engaged in income generation and younger people find financial planning relevant and engaging.
- Study and develop enhancements to community engagement, in both real and virtual environments, that are known to improve healthcare costs and ensure a sense of relevance, belonging, and active lifestyle, all of which relieve pressures on funding for retirement.
- Replace monetary solutions with access solutions. Pension plan designers might consider wholly new approaches to ensuring housing (saving "housing access tokens," whatever those might be) or food (ensuring membership in a food co-op). This could involve use of collective purchase power of all members in a retirement plan, rather than have them go into the open marketplace for their retirement needs, ensuring their ability to afford necessities.

Clearly, when it comes to the future of retirement, retirement planning and pensions, there are many avenues ripe for creation and invention. Just as important, there are many past assumptions ready for extinction. This paper hopes to serve as the diving board for the plunge into the pools of change and innovation ahead. Taken as a whole, it is meant to inspire imagination, and begin new conversations about what the future might hold.

Section 8: Glossary

The following terms are all original terms developed by The Future Hunters and referenced in this report. This glossary is meant to serve as a point of reference and addendum to this report. The terms below are listed in the order in which they first appear in this report:

- **Templosion**: Change – technological, economic and social – is happening at a far more rapid rate than ever before. *Templosion* refers to the implosion of time into smaller and smaller units, alternatively understood to be large things or events materializing much more quickly than ever before.
- **The COVID Trend Accelerator**: Many of the circumstances emerging from the pandemic were not entirely new. Instead, several important, preexisting trends (e.g., remote work and robotic displacement of labor) were simply *accelerated* by the realities of the pandemic.
- **The Non-Linear Life Trajectory**: Traditional life stages are becoming more blurred, and boundaries are becoming harder to define as people progress through their lives.
- **The Bespoke Life**: Individuals throughout much of the developed world now have an increasing ability to customize their life experience to be uniquely theirs – tailored for their needs and preferences. They now have more choice than ever before when it comes to how they learn, work, and define ‘family.’
- **Diamonding**: The process through which individuals become more distinct from others as they age, due to the uniqueness of their life experiences. Aging and retirement will be increasingly characterized by massive populations of those over 65 who are defined by their compression over time into diamonds: multi-faceted with no two exactly alike.
- **Gerontopoly**: The body of business, research and initiatives emerging for and around aging people. This burgeoning industry and economy may see significant redesign as demographics shift considerably.
- **From Mankind to Mindkind**: Productivity in the future will increasingly be less characterized by human headcount (“mankind”), and more by a shift toward “mindkind” – the accessing of human minds in any combination, anytime and from anywhere.
- **DICE (Distributed Income Compensation Enterprises)**: The emergence of companies and networks that disintermediate transactions and businesses by hiring dispersed populations to perform work or offer goods or services in new ways.
- **Othersourcing**: More than basic automation, *othersourcing* refers to the displacement of labor not to lower-cost geographies (outsourcing) but also to non-carbon life forms (e.g., robots, AI, etc.).
- **Mortality Horizon**: The length of time in one’s life which extends from the age when the first 5% of one’s age cohort has died off to the point when the last 5% of the cohort will die off.

Section 9: Acknowledgments

The researchers' deepest gratitude goes to those without whose efforts this project could not have come to fruition: the Project Oversight Group for their diligent work overseeing, reviewing and editing this report for accuracy and relevance.

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Endnotes

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