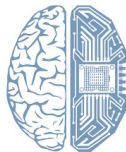


LONGEVITY FINANCIAL INDUSTRY

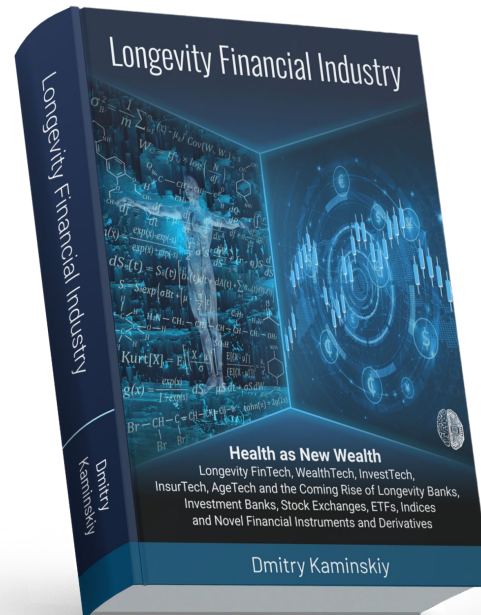
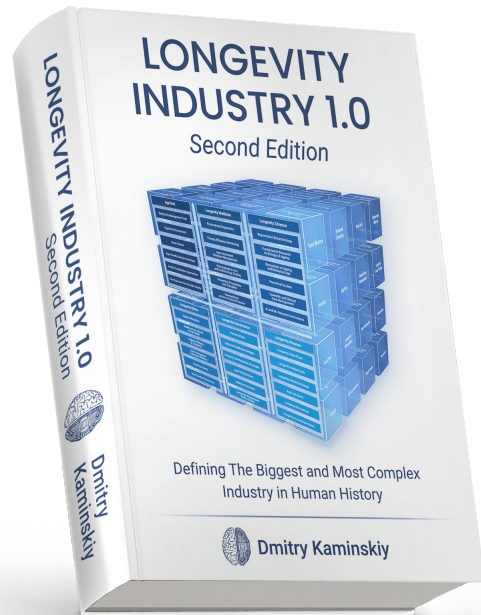
BOOK TEASER

Health as New Wealth
Engineered Solutions to Bridge the Longevity Liquidity Gap
Rise of Longevity Investment Banks, Stock Exchanges and Financial Instruments

DMITRY
KAMINSKIY



DEEP KNOWLEDGE GROUP



2010-2023: Evolution of the Longevity Industry from Zero to 1.0

- The Industrialization of Longevity
- The Current State of Longevity Science, Business, Finance, and Practical Applications
- Longevity Becomes National Priority Item for the Strategic Agenda of Progressive Governments
- Transforming the Challenge and Deficit of Aging into the Opportunity and Asset of Longevity
- Defining and De-Risking: Hype vs. Reality

Health as New Wealth, Engineered Solutions to Bridge the Longevity Liquidity Gap, and the Rise of Longevity Investment Banks, Stock Exchanges and Financial Instruments

- Engineered InvestTech and FinTech Solutions to Bridge the Big Liquidity Gap
- Longevity Futures, Shorting, Exchange Traded Funds and Technology Marketplaces
- Longevity Stock Exchange, Investment Bank, Index Fund and Financial Derivatives
- Financial Futurism: Derivatives Tied to National Healthcare Systems, Pension Systems, National Healthy Longevity & Longevity Economies

About the Book: Introducing Longevity Financial Industry

PART I.

Defining the Longevity Financial Industry

- *Introduction*
- *What is Longevity Finance?*
- *Major Financial Corporations Re-Tuning their Business Models to Neutralize the Risk of Aging Population and Capture the Opportunity of Healthy Longevity*
- *The Need for Longevity Finance: Health as the New Wealth (Where Healthspan Meets Weathspan)*
- *Longevity Finance Big Data Analytical Dashboard*
- *Top Longevity Challenges and Opportunities for Financial Corporations*

PART II.

The Present State of the Longevity Financial Industry (2023)

- *The Rise of Longevity Finance at the Intersection of Population Aging vs. Longevity*
- *The State of Global Longevity Finance in 2023*
- *Longevity Finance Benchmarking: Top Longevity Financial Corporations in 2023*
- *Longevity FinTech Benchmarking: Top Longevity FinTech Companies in 2023*
- *Longevity Banking Card (Integrated AgeTech/HealthTech/WealthTech Solution)*
- *Biomarkers of Human Longevity as Catalyst for Investment De-Risking, Reliable Clinical Forecasting, and Tangible Metrics for Company Valuation and Due Diligence*
- *The Big Longevity Liquidity Gap*
- *Longevity Investment Digest*

PART III.

The Near Future of Longevity Finance (2024-2030)

- *Forecast on the Near Future of Longevity Finance: 2024–2025*
- *Longevity Investment Bank*
- *The Next 5 Years Will Determine the Fate of Financial Corporations at the Intersection of Aging Population vs. Health Human Longevity*
- *Longevity Banking: The 1 Trillion+ Opportunity of 1 Billion People in Retirement*
- *Longevity Innovation Marketplace*
- *Longevity Stock Exchange*
- *Longevity Exchange-Traded Funds*
- *Longevity Financial Instruments and Derivatives 1.0 (2024-2025)*

PART IV.

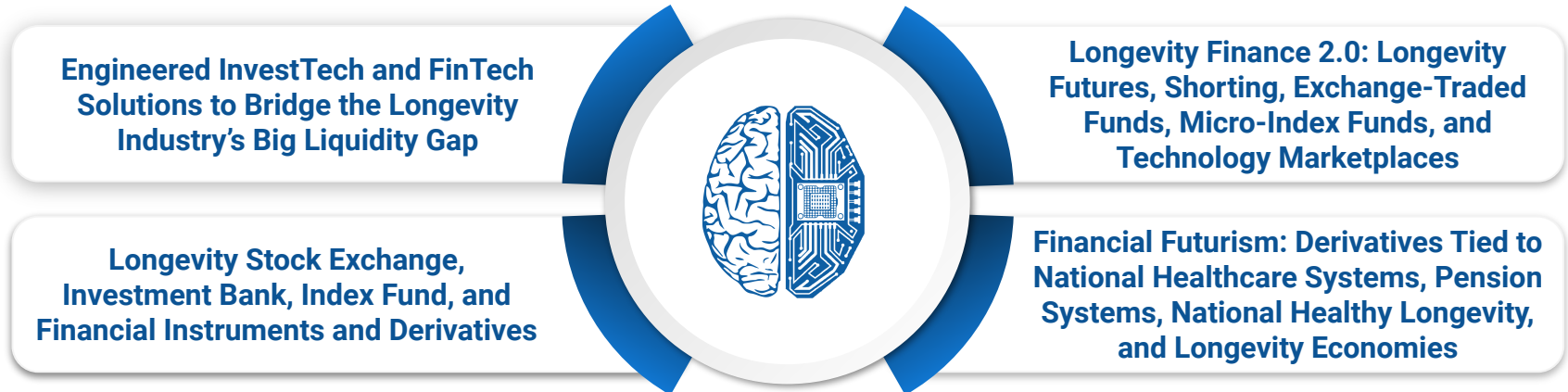
The Future of Longevity Finance (2025-2030)

- *Longevity Financial Instruments and Derivatives 2.0 (2025-2030)*
- *The Paradigm Shift From National Economies to National Longevity Economies*
- *Longevity Financial Industry as the Key Mechanism for Securing the Future of Longevity Industrialization (and the Stability of National Economies)*
- *The Concept of the Longevity Finance Valley: Global Benchmarking of Top Contenders to Create the First Municipal Longevity Finance Hub by 2025*
- *The Evolution of the Longevity Finance State: Global Benchmarking of Top Contenders to Create the First National Longevity Finance Hub by 2030*
- *Forecast on the Deep Future of Longevity Finance: 2025-2030*
- *Only Longevity Finance Can Secure the Health and Wealth of Citizens and Economies*

About the Book: Longevity Financial Industry

In “*Longevity Industry 1.0 - Defining the Biggest and Most Complex Industry in Human History*”, we distilled the complex assembly of deep market intelligence and industry knowledge that Deep Knowledge Group has developed over the past 8 years into a full-scope understanding of the global Longevity Industry, showing the public exactly how the international consortium of commercial and non-profit entities managed to define the overwhelmingly complex and multidimensional Longevity Industry for the first time, and how they created tangible framework for its systematization and forecasting. One of that book’s four major parts was devoted to the recent rise, present state and near future of the Longevity Financial Industry.

Now, as the pace of innovation and diversification in Longevity Finance continues to grow, with increasing numbers of Financial Corporations on-boarding the topic of Longevity, the time has come for a full book dedicated to this topic. In “*Longevity Financial Industry: Health as New Wealth, Engineered Solutions to Bridge the Longevity Liquidity Gap, and the Rise of Longevity Investment Banks, Stock Exchanges and Financial Instruments*”, Deep Knowledge Group General Partner Dmitry Kaminskiy charts the near and far future of Longevity Finance, charting the emerging paradigm of Health as New Wealth and the increasing need for weathspan extension to match the pace of increasing Healthspans, forecasting the rise of Longevity-focused Retail Banks, Investment Banks, Stock Exchanges, ETFs, Technology Marketplaces and Modern Financial Instruments and Derivatives, and offering a glimpse at Deep Knowledge Group’s blueprint for modern, engineered InvestTech solutions to bridge the Big Longevity Liquidity Gap.



Longevity Financial Industry - Foreword by Dmitry Kaminskiy

In our 2020 book, '[*Longevity Industry 1.0: Defining the Biggest and Most Complex Industry in Human History*](#)', we distilled the complex assembly of deep market intelligence and industry knowledge that [Deep Knowledge Group](#) and its Longevity-focused subsidiaries (including [Longevity.Capital](#) and [Aging Analytics Agency](#)) have developed over the past 8 years into a full-scope understanding of the global Longevity Industry.

One of the four sections of that book was dedicated to the topic of Longevity Finance, charting the ways in which increasing numbers of Financial Corporations are re-tuning their business models to neutralize the challenge of ageing population and leverage the growth potential and opportunity of Longevity. Now, in 2023, given the unrecognized importance of this sector to the health and stability of the Global Longevity Industry as a whole, the time has come to devote an entire topic of the present state and near-future of this rapidly evolving sector.

While the majority of practical outcomes in healthy human longevity will be driven by precision health technologies, they will also require an assembly of other, non-biomedical components, including financial products and services such as InsurTech, AgeTech, HealthTech, and WealthTech. Progressive financial corporations are already onboarding the topic of longevity in significant ways. Meanwhile, increasing numbers of HWNI and members of the global investment community are embracing the emerging paradigm of Health as New Wealth, and recognizing Health as the Most Precious Asset; in 2018 UBS bank conducted a survey among its HNW clients and found that 50% planned to live past the age of 100 years. It stands to reason that such clients will require a far longer horizon of financial planning and specifically designed financial products.

Against this backdrop of activities, the continued positive trajectory of growth and stability of Global Longevity Industrialization faces a major bottleneck and risk factor: Longevity start-ups require increasingly large levels of funding to move forward, and appetite for exposure to Longevity among both individual and institutional members of the conservative investment community continues to mount, but an extreme lack of innovation in the technologies, institutions, and instruments used to direct and manage Longevity investment and financial activities has created a critical Big Gap preventing the two sides of the Longevity Liquidity equation from being bridged.

Having been actively conducting market intelligence in this space for several years, and having originally coined the term Longevity Financial Industry in 2017, Deep Knowledge Group has been systematically applying its DeepTech Engineering mindset to this issue, developing and designing the blueprint of frameworks, institutional structures, technologies and financial innovations required to bridge this big gap and achieve a massive acceleration in the rate of Longevity Industrialization. Now, for the first time, we are unveiling parts of this blueprint to the larger investment and finance communities, outlining the major challenges and opportunities in this space for Investment Banks, Insurance Companies, Pension Funds, Asset Management Firms and Retail Banks, and forecasting the rise of Longevity-focused Investment Banks, Stock Exchanges, ETFs, Technology Marketplaces and Modern Financial Instruments and Derivatives, and offering a glimpse at Deep Knowledge Group's ongoing work to create, validate and deploy the exact modern DeepTech tools and engineered solutions needed to unleash the Future of Longevity Finance years ahead of schedule.

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About the Author (Dmitry Kaminskiy)

Dmitry Kaminskiy is an innovative entrepreneur, investor, author and philanthropist dedicated to impact investment and ethical business, with a focus on engineering the accelerated trajectory of progressive technological development for the benefit of humanity.

Mr. Kaminskiy is a co-founder and managing partner of **Deep Knowledge Group** - a consortium of commercial and non-profit organizations active on many fronts in the realm of DeepTech and Frontier Technologies (AI, Longevity, Precision Medicine, FinTech, GovTech, InvestTech), ranging from scientific research to investment, entrepreneurship, analytics, policy and philanthropy.

He leads the activities of the consortium's venture arms - **Deep Knowledge Ventures**, an investment fund focused on DeepTech and advanced science projects, and **Longevity.Capital**, which prioritizes the convergence of Longevity and Artificial Intelligence, areas in which it has unparalleled investment and exit strategies.

He is a frequent speaker on the topics of AI and Longevity, including conferences organized in London by The Economist "Aging Societies and The Business of Longevity", Financial Times "Smart Machines vs Smart People", at the Future Finance Forum in Seoul "AI in Finance", "Precision Medicine World Conference" in Silicon Valley, as well as several others at Oxford and Cambridge Universities.

Mr. Kaminskiy serves as managing trustee of **Biogerontology Research Foundation**, the UK's oldest Longevity focused charity.

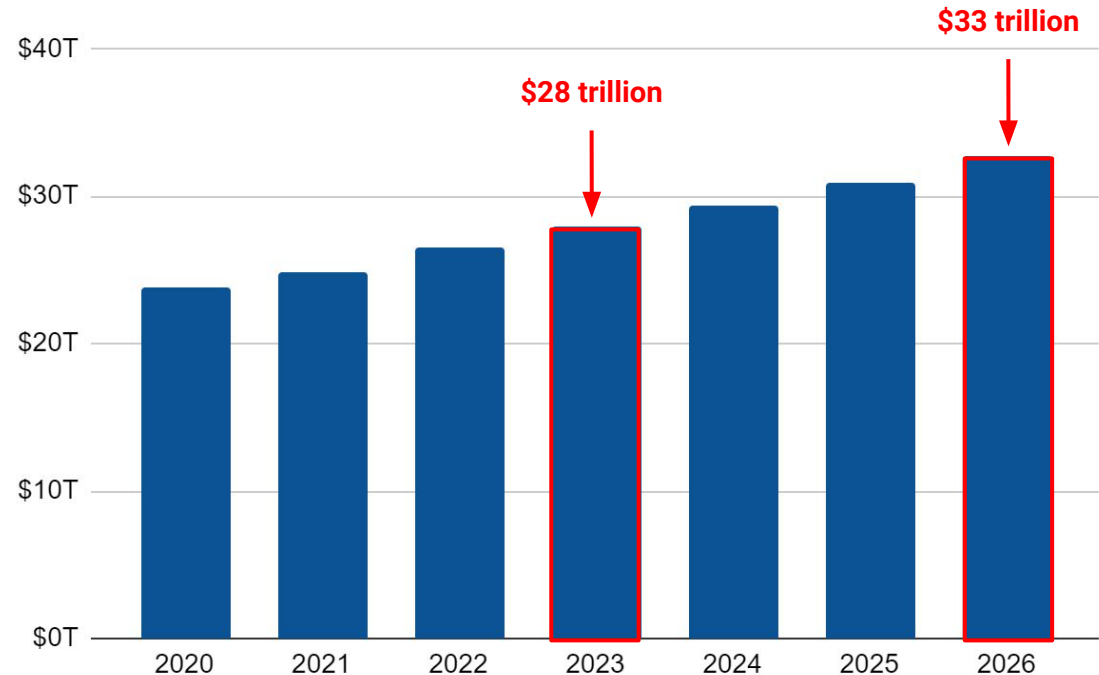


www.kaminskiy.info/

PART I: Defining the Longevity Financial Industry

- Introduction
- What is Longevity Finance?
- Major Financial Corporations (Insurance Companies, Pension Funds, Asset Management Firms, etc)
Beginning to On-Board Topic of Longevity
- The Need for Longevity Finance: Health as the New Wealth (Where Healthspan Meets Wealthspan)
- Longevity Finance Big Data Analytical Dashboard

World Longevity Economy Size Projections (\$)



Longevity Industry: Multi-trillion Dollar Opportunity



“The one billion retired people globally are a multi-trillion dollar opportunity for business”

~ Dmitry Kaminskiy, interview in the Financial Times



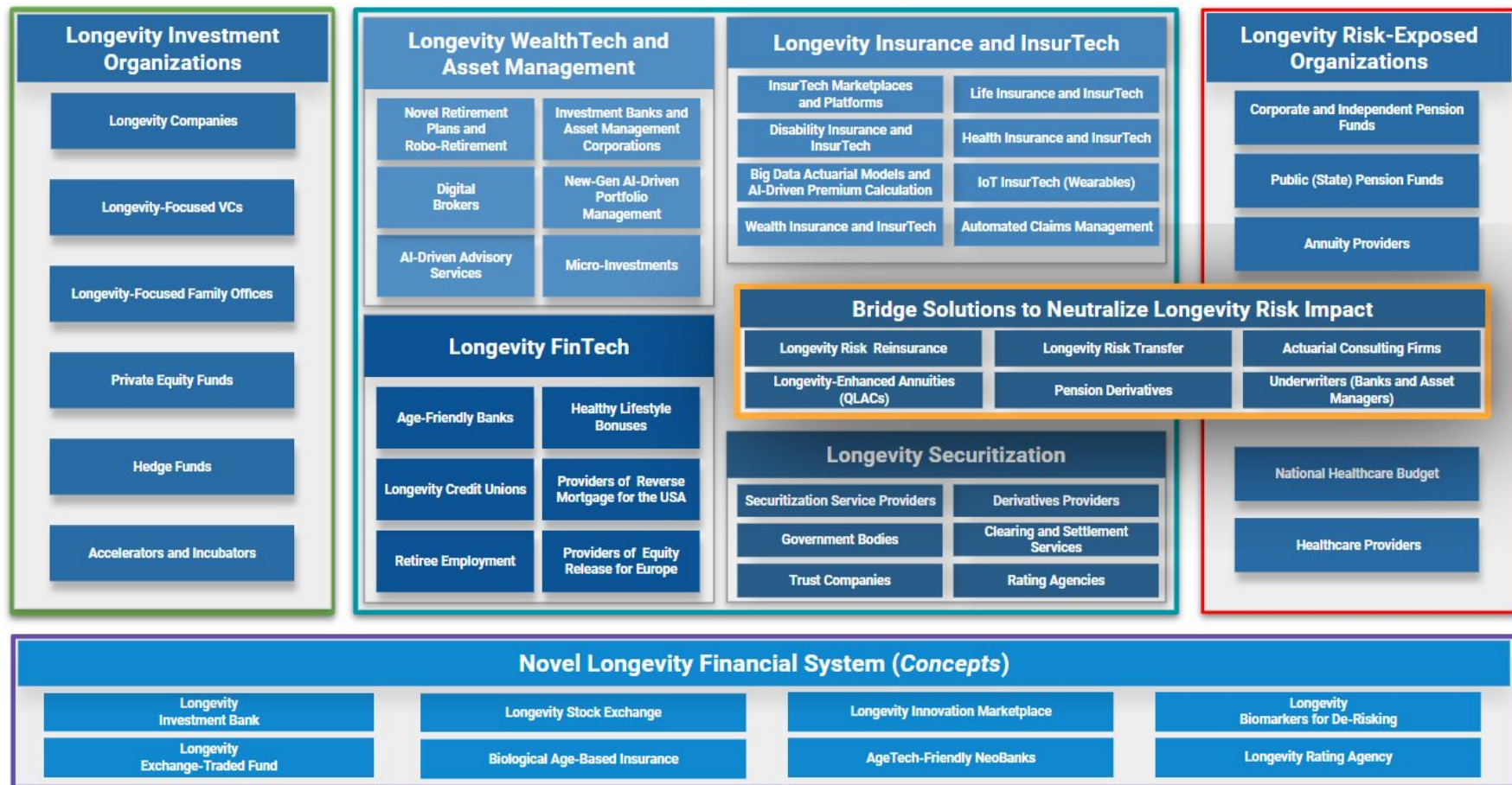
**FINANCIAL
TIMES**

“The global spending power of those aged 60 and over will reach \$15 trillion annually by 2020”

~ Bank of America Merrill Lynch


BANK OF AMERICA 

Longevity Financial Industry Framework



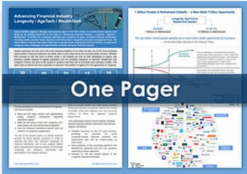
Longevity Finance: Defining the Sector

Deep Knowledge Group's Longevity focused analytical subsidiary Aging Analytics Agency was the first to coin the term "Longevity Financial Industry" in their May 2018 analytical report "[Longevity Industry Landscape Overview Volume II: The Business of Longevity](#)", forecasting the rise of Longevity Finance institutions (such as Longevity Stock Exchanged, Index Funds and AgeTech Banks) and instruments (specialized financial derivatives tied to the Longevity Industry) as far back as Q2 2018, and was the first to produce a dedicated analysis of the sector, and a specific analytical framework capable of defining the sector and forecasting developments within it, through their July 2019 special analytical case study "[Advancing Financial Industry: Longevity / AgeTech / WealthTech](#)".




Home	News	Contact	Longevity Industry 1.0	Global Longevity Ecosystem	Deep Knowledge Analytics	Deep Pharma Intelligence	
About	Team	Conferences	Investment Digest	Big Data Analytics Dashboard	More	NeuroTech Analytics	Longevity International

Advancing Financial Industry Longevity / AgeTech / WealthTech




One Pager

Read




Mind-Map

Read




Teaser / 35 Pages

Read




Press Release

Read



Interactive Mind Map

View



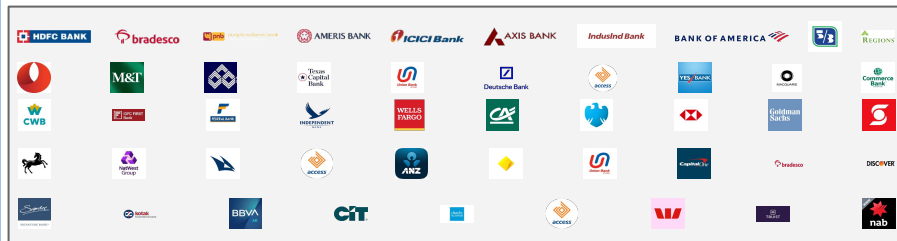
Full Report
85 Pages

Read

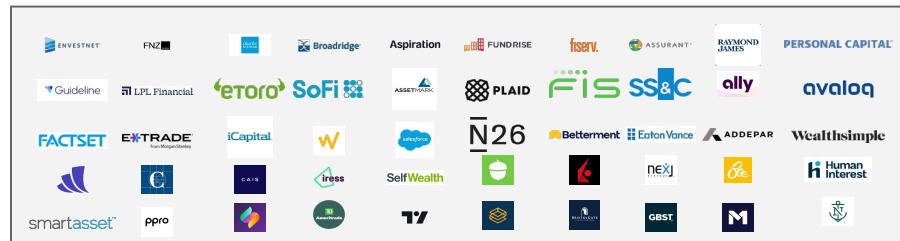
www.aginganalytics.com/financial-longevity-industry

Top 300 Prominent Longevity Finance Companies

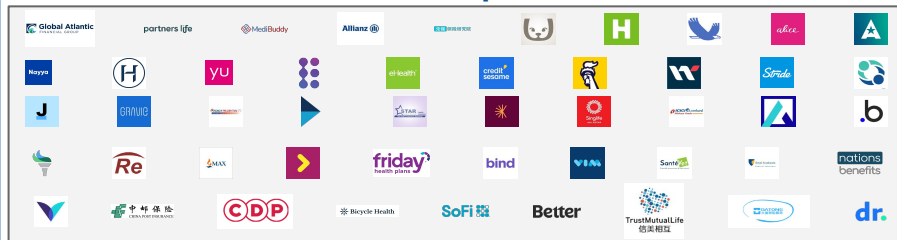
Age-Friendly Banks - 50



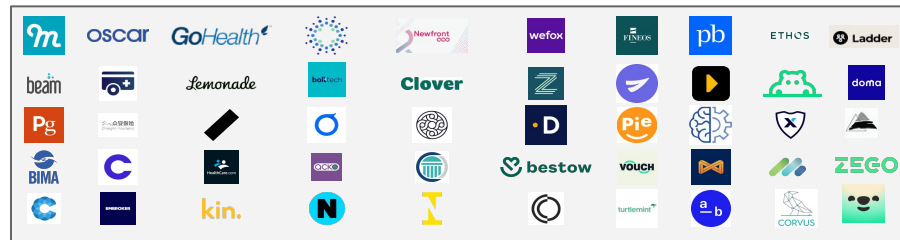
WealthTech - 50



Insurance Companies - 50



InsurTech - 50



Private Pension Funds - 50

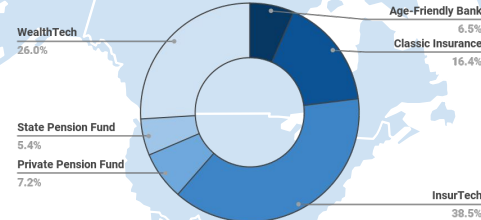


State Pension Funds - 50

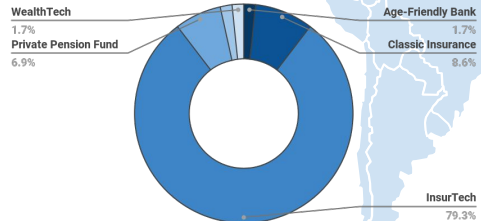


Longevity Finance Geographical Distribution

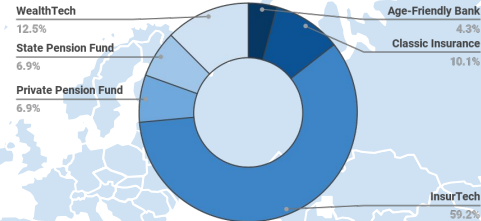
North America, 932 companies



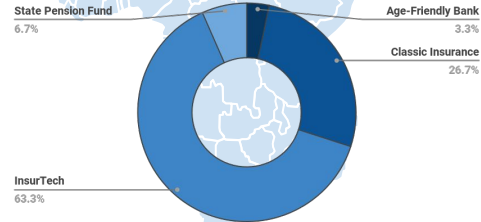
South America, 58 companies



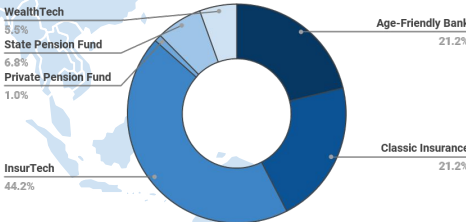
Europe, 375 companies



Africa, 30 companies

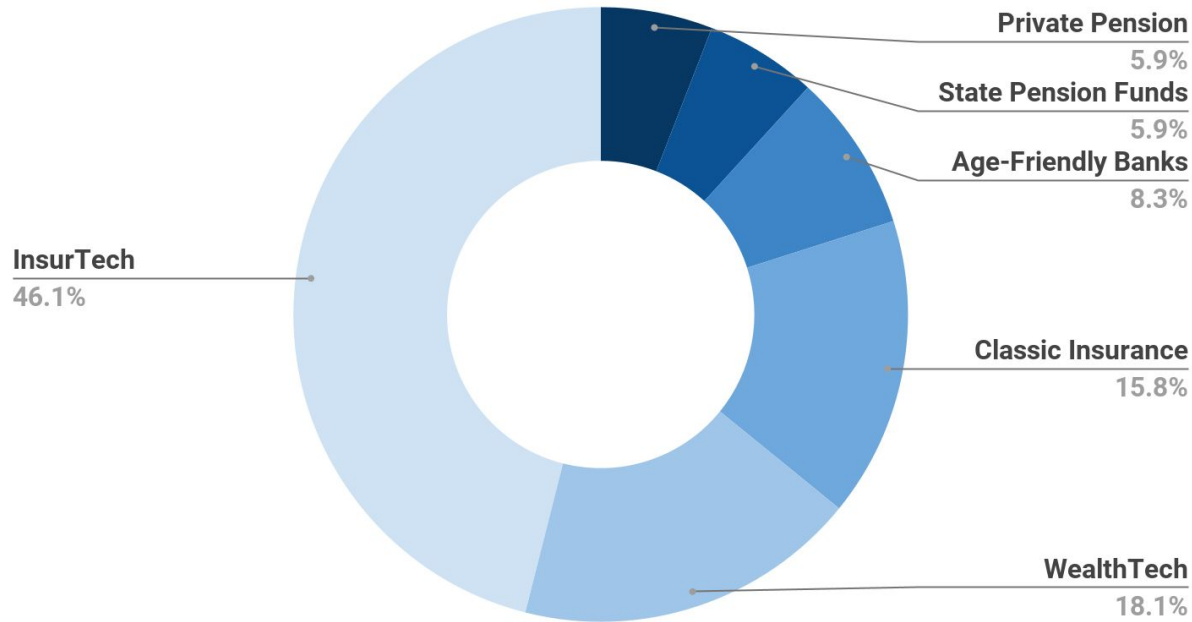


Asia & Oceania, 292 companies



Financial Institutions Advancing the Longevity Industry

Distribution of Sub Industries by Number of Companies



InsurTech companies account to the largest segment among companies engaged in Longevity finance. InsurTech along with WealthTech are gaining the larger adoption over the last years judging from the rapid growth of the number of new market entrants and the amount of investments allocated to these sectors.

The Longevity finance industry sees the lasting trend of increasing demand for tech solutions aimed to supplement and improve the services provided by larger financial institutions.

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- The Big Longevity Liquidity Gap
- Longevity Investment Digest 2023

Longevity Financial Industry Threats and Opportunities

PENSION FUNDS

Population ageing may increase the costs for the funds

Highly dependent on policy regulations

Higher mortality uncertainty

INSURANCE COMPANIES

Leveraging longevity risk on macro and individual level

Intersection with banks and asset management firms

Longevity derivatives as a form of insurance themselves

ASSET MANAGEMENT FIRMS

Diversification of products for different age groups

Advanced trading strategies with longevity derivatives

Population ageing may make conservative investment strategies more popular

PRIVATE WEALTH AND RETAIL BANKS

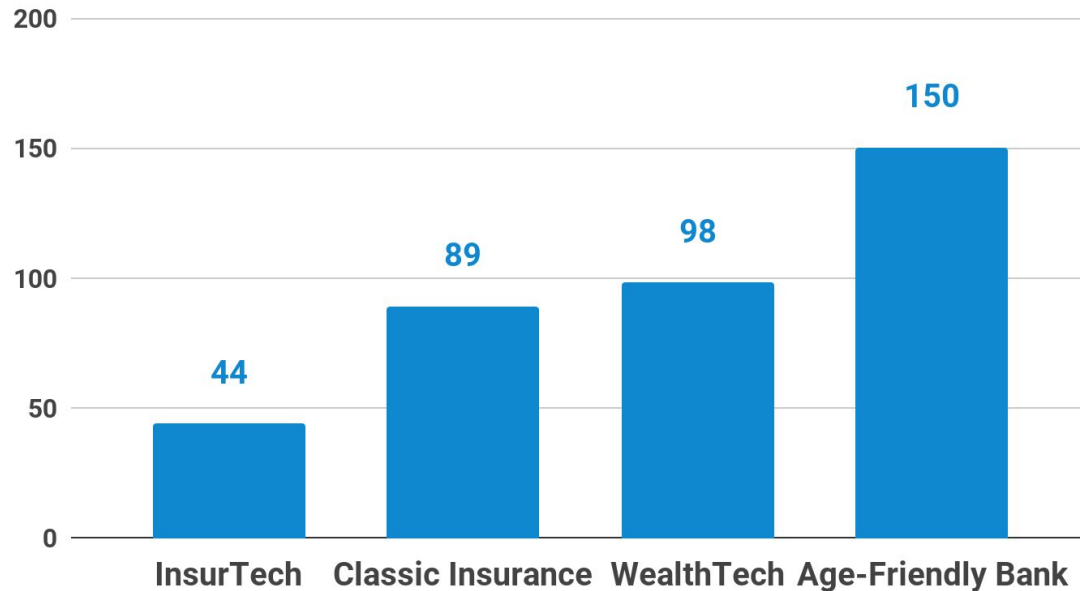
Providing services to other financial institutions

Savings growth may give additional pressure on interest rates

Banks can substitute services of retirement planning

Longevity Finance Overview

Average Total Funding per 1 Institution by Type, million USD



Taking into account that currently age-friendly banks are mostly conventional banks with expanded functionality for senior clients, this category of Longevity financial institutions has the highest total funding per entity.

InsurTech with \$44M per institution has the lowest value since the companies of this sector are not financial institutions but focused on the development of technological solutions.

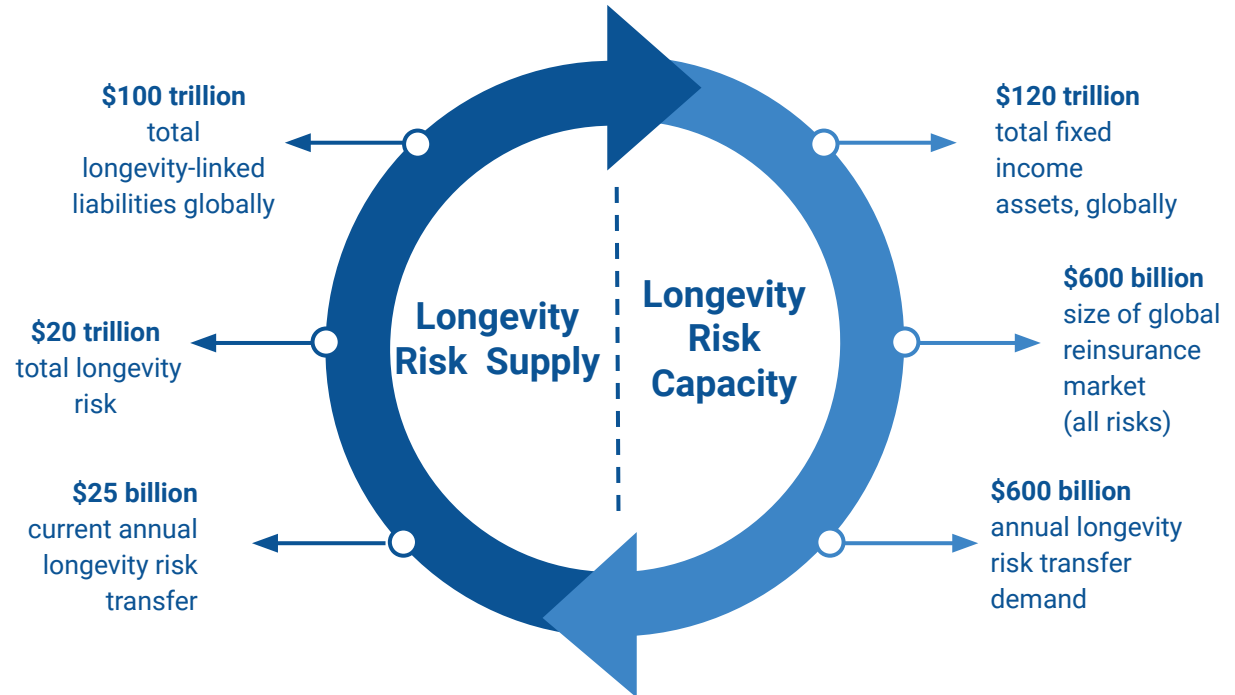
Macro Trends on Longevity Risk Market

Pensions risk transfer market sees significant growth in recent years

US pension risk market alone, involving predominantly the operations of pension buy-ins and buy-outs and longevity swaps have an estimated total volume of between \$38 billion and \$40 billion.

Longevity risk is very capital intensive, and, therefore, the amount of longevity-related liabilities that can be transferred is restricted by the quantity of capital currently dedicated by the existing risk-taker universe.

2022 demonstrated record volume of pension risk operations: in the USA alone it reached \$5.4 billion.

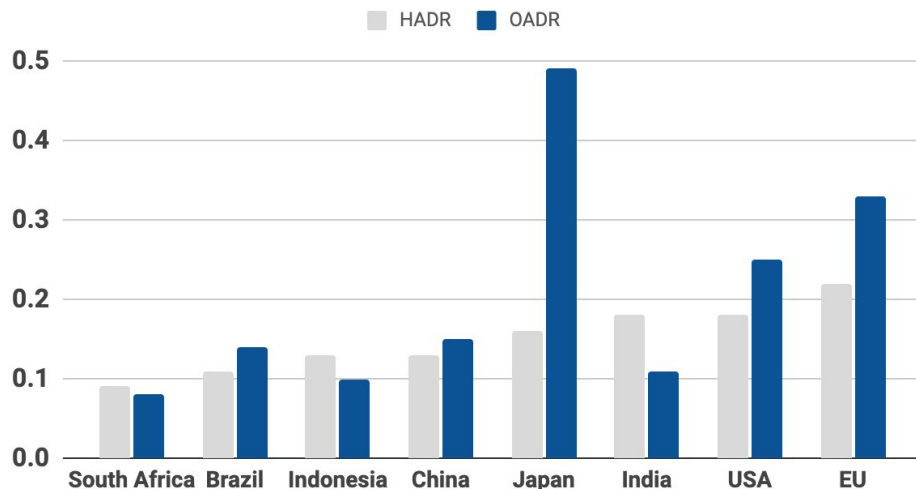


Longevity Risk Market

During upcoming years the Longevity risk will bring the challenges which require taking steps towards mitigating the adverse outcomes for the financial industry.

- Each boomer has not produced enough children to replace themselves. Such leads to a decline in the number of taxpaying workers. It takes about 25 years to grow a new taxpayer.
- The decline in economic prosperity is caused by excessive debt and declining income growth due to productivity increases.
- Back in 1966, each employee in the USA shouldered \$555 of social benefits. Today, each employee has to support more than \$18,000 of benefits.
- In the USA, by 2025, each married couple will pay Social Security retirement benefits for one retiree and their own family's expenses.

Old-age dependency ratio (OADR) and health-adjusted dependency ratio (HADR) for selected countries*

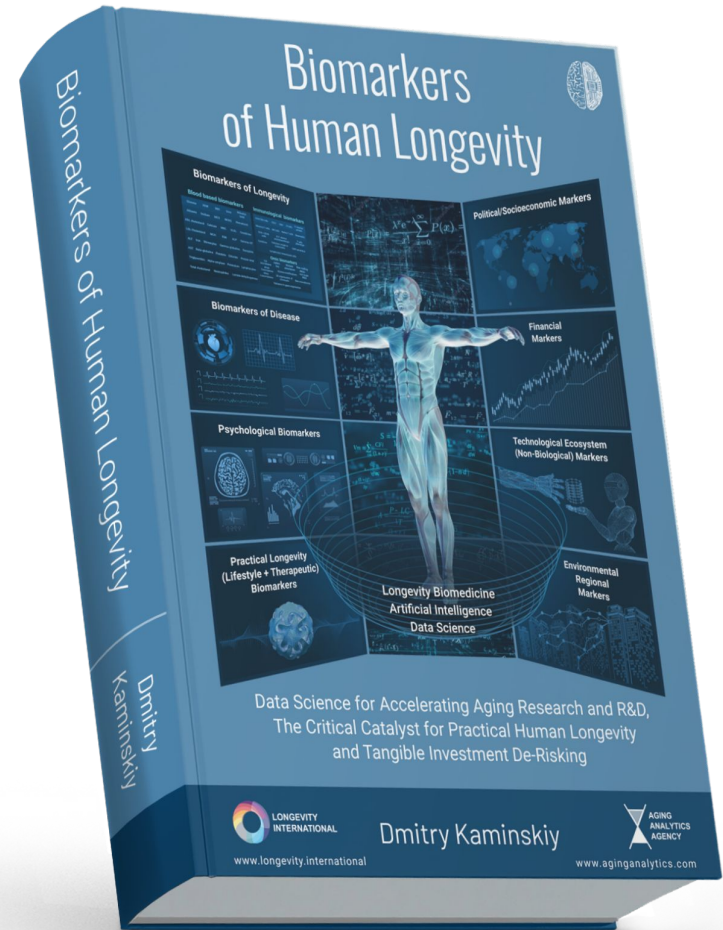


*Source: [*The Lancet Healthy Longevity*](#)

HADR is a new measure of ageing burden based on the ageing-related health of the adult population compared to OADR widely used earlier. The comparison of the values of both metrics gives more clear understanding of how the particular countries overcome the negative consequences of ageing population and Longevity risk.

Biomarkers of Human Longevity for Investment De-Risking, Reliable Clinical Forecasting, and Tangible Metrics for Company Valuation and Due Diligence

- The Longevity Industry's Systemic and Most Fundamental Risk: Reliance on Animal Model (Mice) Data for Company Valuation
- Lack of tangible frameworks for human validation is leading to unstable market capitalization dynamics for public Longevity companies, and risks de-stabilizing long-term investor confidence
- Biomarkers of Human Longevity as the only market-ready tool to de-risk Longevity investing
- Consensus frameworks of Biomarkers of Human Longevity to bridge the translational gap of successful results in model organisms (mice) vs. replication of results in humans (clinical trials)
- Tangible biomarker-based frameworks for company valuation and due diligence, as the tool for reliable investor expectations and forecasts
- Digital Human Avatars as the platform for safe self-experimentation and real-time therapeutic validation, personalization and fine-tuning
- Longevity Economy 2.0 – Biomarkers of Human Longevity as Major Catalyst for Longevity Investment Bank, InsurTech, Longevity Stock Exchange and Financial Instruments and Derivatives



www.longevity-book.com/biomarkers

Longevity Biomarkers Landscape Q1 2022

AI Biomarkers

Companies - 300
Investors - 495
R&D Centres - 235
Non-Profits - 7

Digital Biomarkers

Systemic Biomarkers

Companies

Investors

R&D Centres

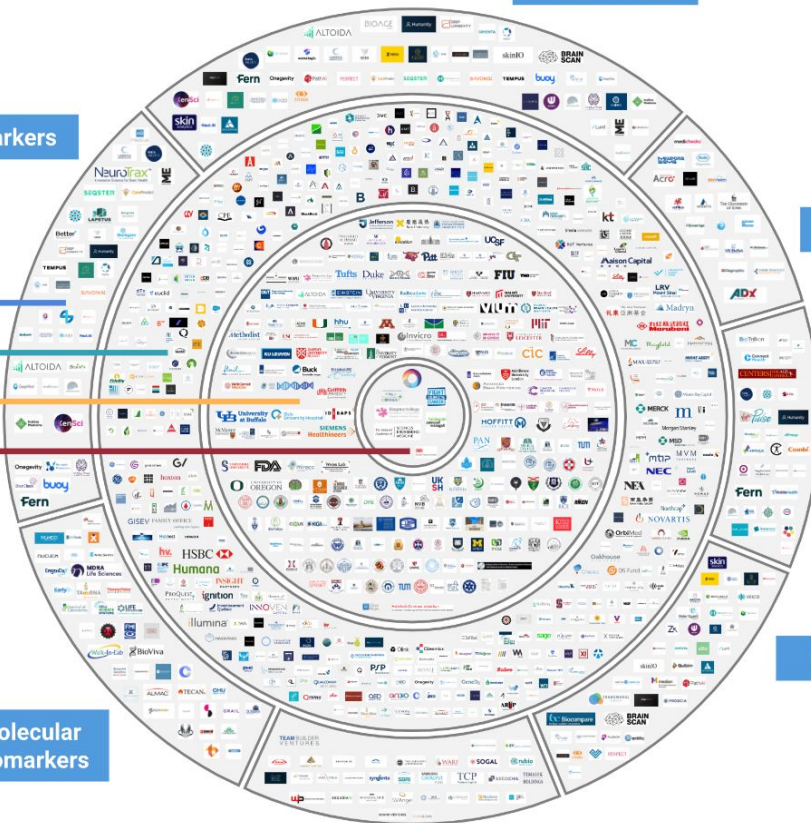
Non-Profits

Physiological
Biomarkers

Imaging Biomarkers

Molecular
Biomarkers

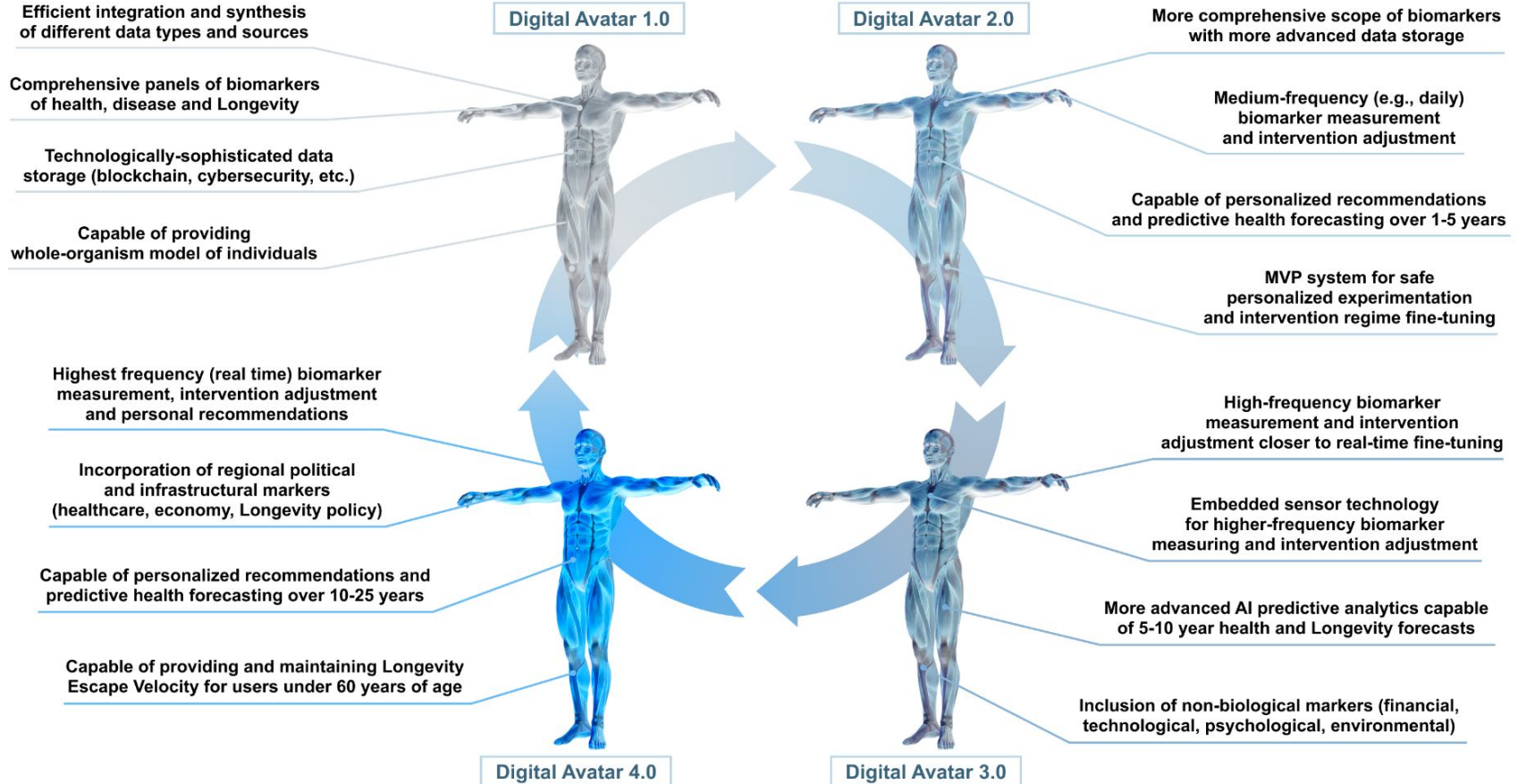
Omic-based Biomarkers



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Digital Human Avatar Framework: 1.0, 2.0, 3.0 and 4.0

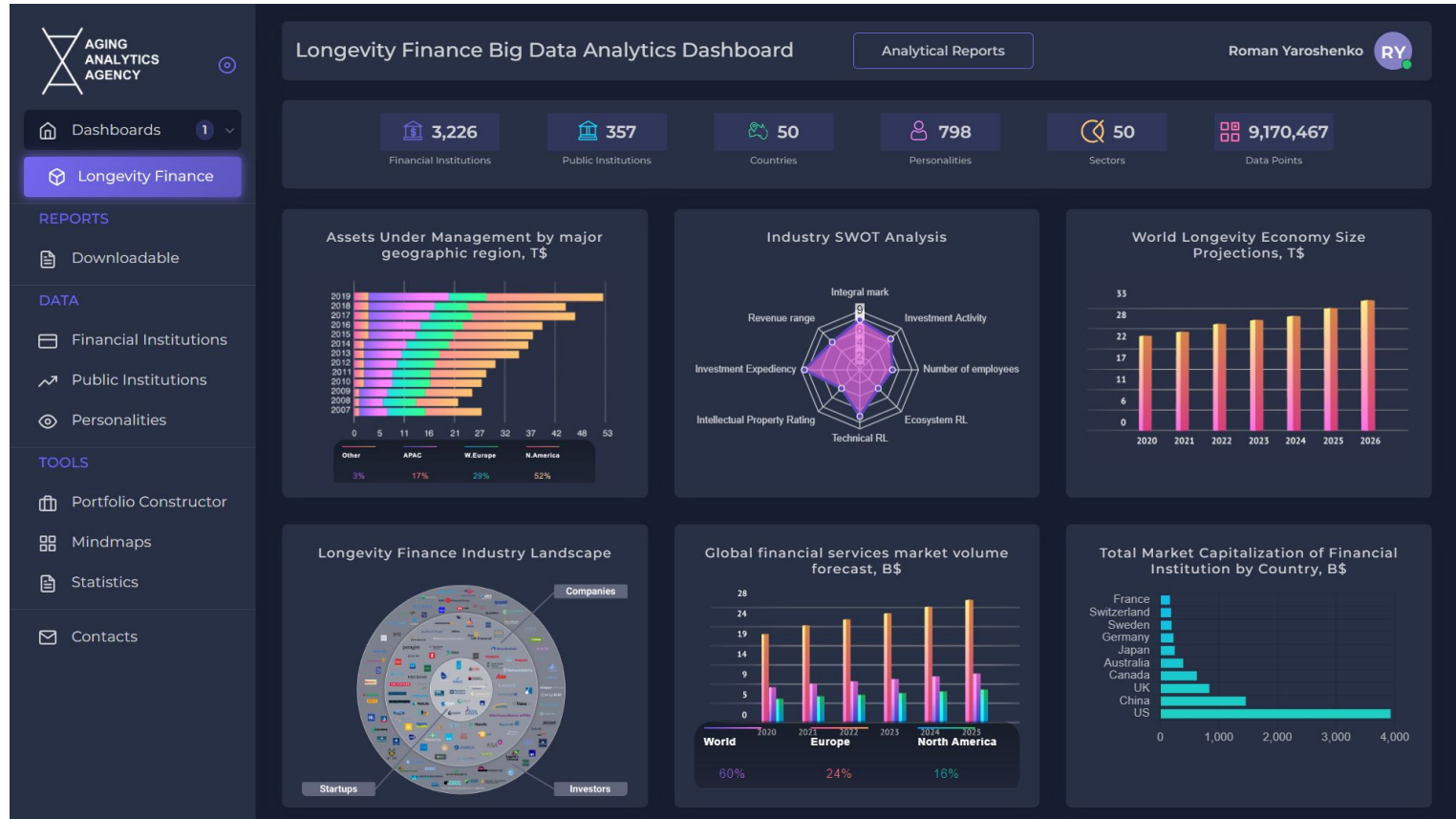


PART III: The Near Future of Longevity Finance (2023-2025)

- Forecast on the Near Future of Longevity Finance: 2023-2025
- What the Opposed MegaTrends of Aging Population and Advancing Biomedicine Means for the Finance Sector
- The Rise of the Silver Dollar: 1+ Billion Global Retired Hold the Majority of Global Purchasing Power, and Recognize Health as the New Wealth, and Longevity as Most Precious Asset Class
- Forecasting Major Challenges and Opportunities for Pension Funds, Insurance Companies, Retail Banks, Investment Banks, Asset Management Firms, and Financial Advisory Services
- Longevity Financial Corporations vs. Longevity FinTech Companies: Competitive Landscape Analysis
- Longevity Innovation Marketplace
- Longevity Stock Exchange
- Longevity Exchange Traded Funds
- Longevity Financial Instruments and Derivatives 1.0 (2023-2025)



Longevity Finance Big Data Analytical Dashboard

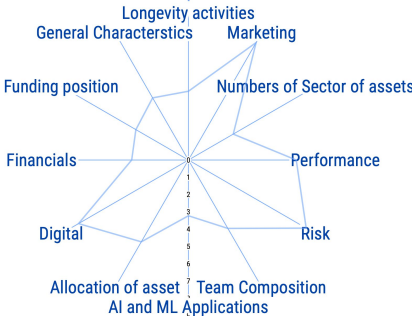
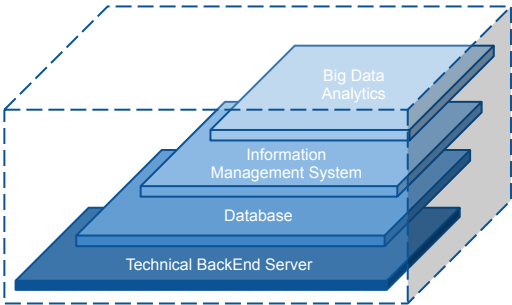


<https://dashboards.invest-solutions.finance/longevity-finance>

Longevity Finance Big Data Analytical Dashboard: Data Analysis Pipeline

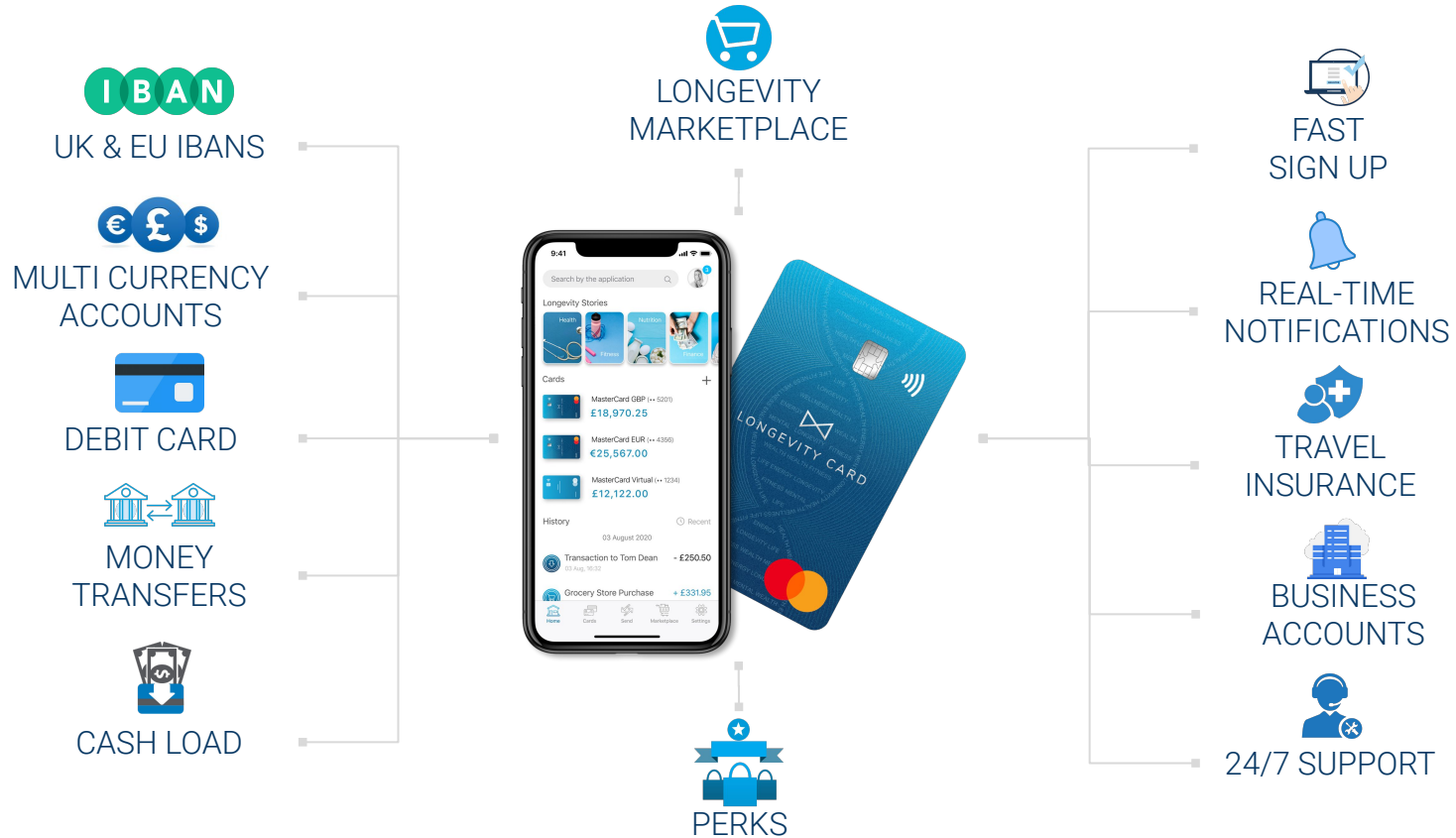
The process of insights generation can be divided into three main stages:

Data Aggregation	Data Analysis	Data Visualization
------------------	---------------	--------------------



Matching tool	Machine learning for database extrapolation	Dynamic SWOT analysis: evolution of financial institutions
Financial institutions database	Machine learning and deep neural networks for institutions clusterization	Interactive industry mindmaps
Investors database	Machine learning for financial indicators predictions	Real-time financial data analytics platform for financial corporations
Deep SWOT analysis	Interactive AI-based scenario analysis and financial planning	Longevity financial instruments analytics

Longevity Banking Card: Overview of Feature



www.longevity.cards

Longevity Banking Card: Marketplace Components

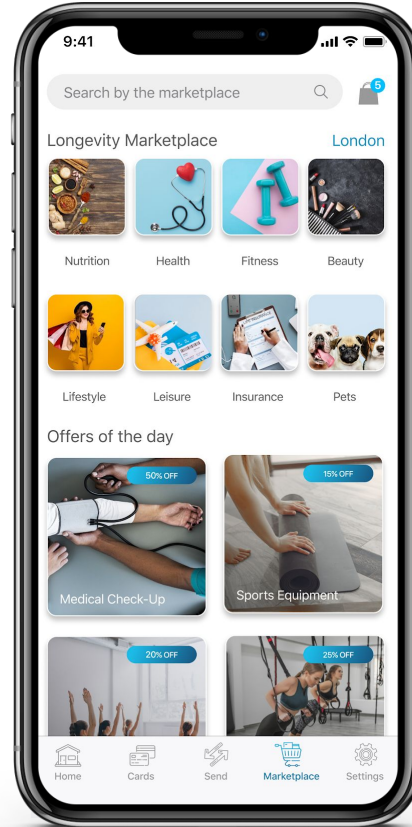
FITNESS &
WELLNESS

HEALTHCARE

BEAUTY &
COSMETICS

HEALTH & TRAVEL
INSURANCE

WELLNESS TOURISM
& SPA



HEALTHY LIFESTYLE

PRIVATE CLINICS

MEDICAL
CHECK-UPS

HEALTHY
NUTRITION & FOOD

PET CARE

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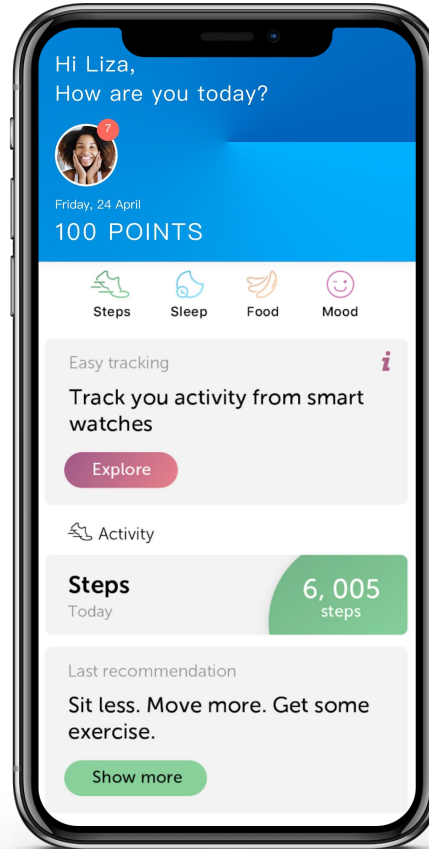
HealthTech Integration and Healthspan Gamification

HEALTHSPAN
AND FITNESS
GAMIFICATION

LONGEVITY
POINTS

DAILY ACTIVITY
ANALYSIS

SLEEP
ANALYSIS



AI POWERED
PERSONALISED
RECOMMENDATIONS

WEARABLES
COMPATIBLE

LONGEVITY
STORIES

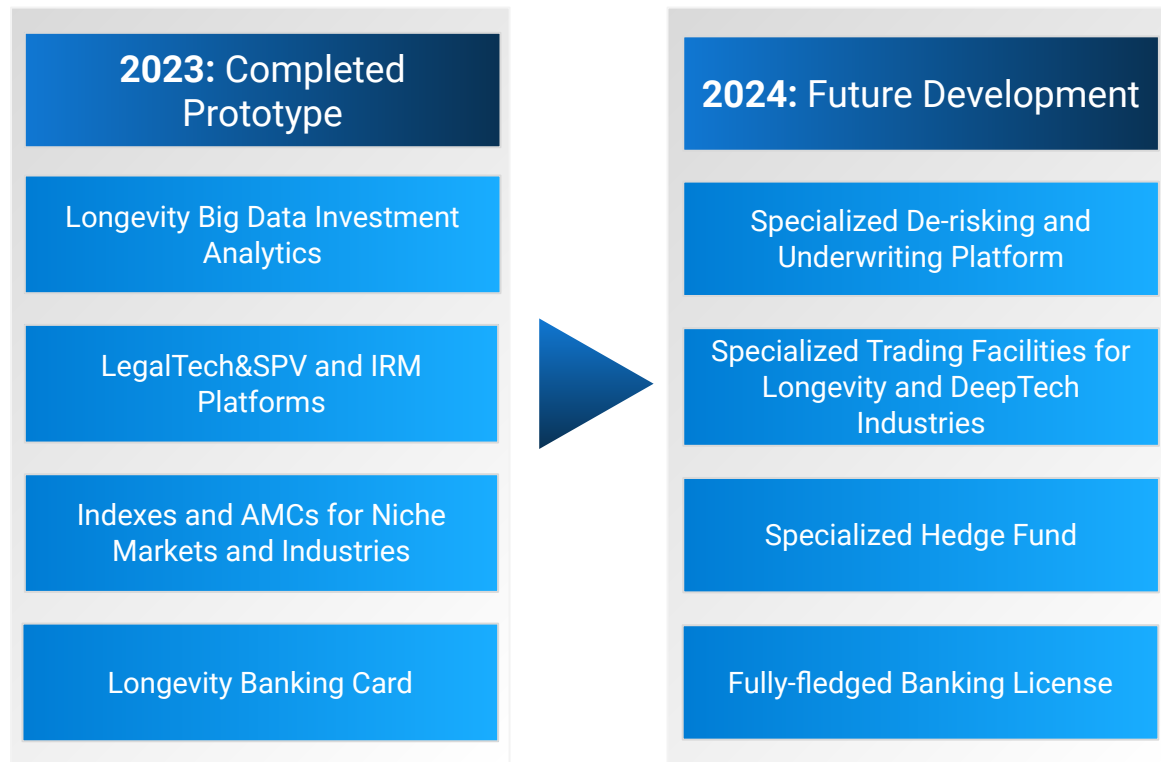
NUTRIENT
TRACKING

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PART IV: Longevity Finance Activities

- Longevity Financial Instruments and Derivatives 2.0 (2025-2030)
- The Paradigm Shift From National Economies to National Longevity Economies
- Longevity Financial Industry as the Key Mechanism for Securing the Future of Longevity Industrialization (and the Stability of National Economies)
- The Concept of the Longevity Finance Valley: Global Benchmarking of Top Contenders to Create the First Municipal Longevity Finance Hub by 2025
- The Evolution of the Longevity Finance State: Global Benchmarking of Top Contenders to Create the First National Longevity Finance Hub by 2030
- Forecast on the Deep Future of Longevity Finance: 2025-2030

Deep Knowledge Group's Longevity Finance Activities 2022-2023



Deep Knowledge Group Longevity Finance Roadmap

