



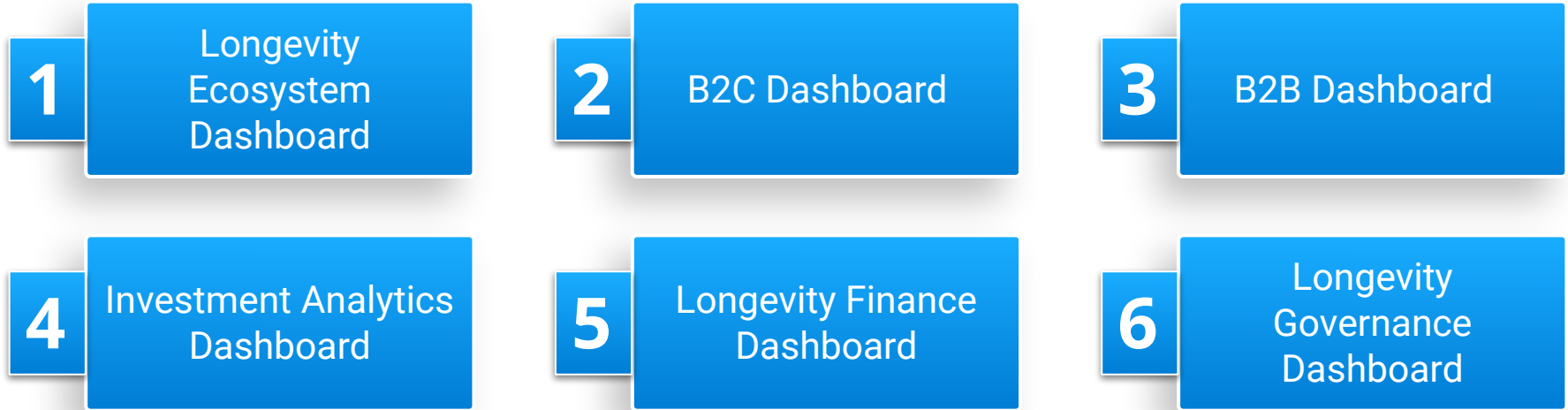
# Big Data Analytical Systems & IT-Platforms

DEEP KNOWLEDGE GROUP

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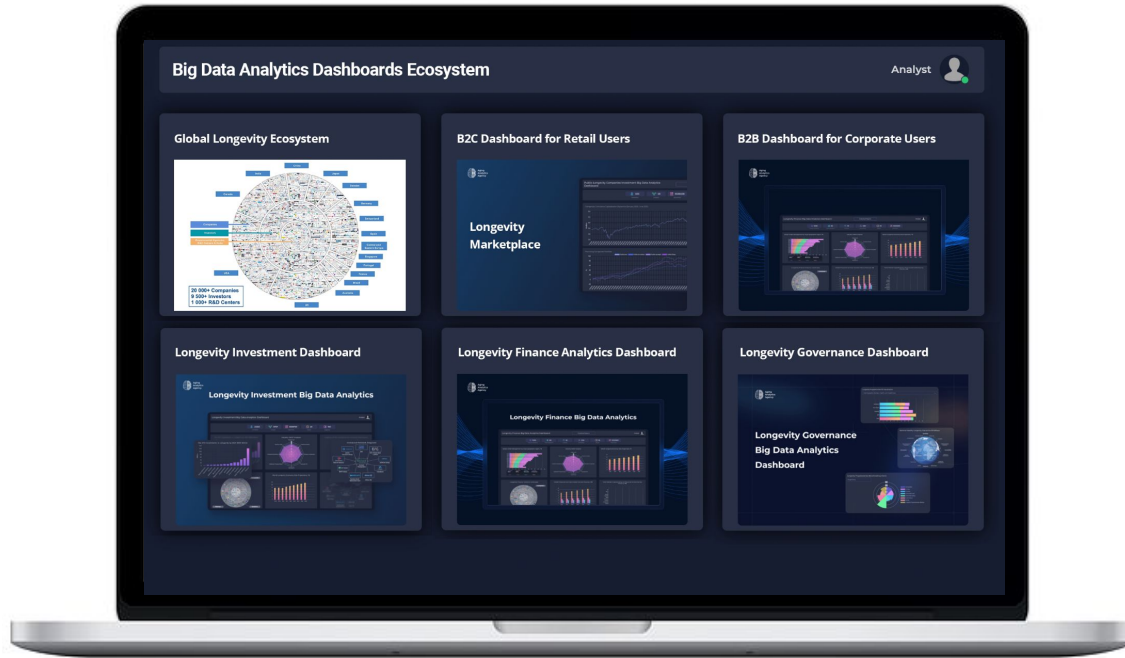
# Longevity Big Data Analytics Dashboard Ecosystem



Deep Knowledge Group's Global Longevity Big Data Analytics System will be built upon the Global Longevity Ecosystem IT-Platform developed by Aging Analytics Agency, featuring an advanced, interactive and intuitive front-end developed using the innovative technology, software solutions and advanced data visualization capabilities of Deep Knowledge Group's IT Department, and backed by the sophisticated, quantitative and multidimensional analytical frameworks and methodology of Aging Analytics Agency. Its aim is to deliver strategic decision makers across the private sector, global investment community, financial industry and governance and policy ecosystem access for the first time to Big Data analytics and visualization, market intelligence, competitive analysis, technology and company benchmarking, SWOT analysis, practical recommendations and other strategic tool sets capable of handling the unprecedented complexity and multidimensionality of the full-scope Global Longevity public and private sector ecosystem.

# Longevity Big Data Analytics Dashboard Ecosystem

The Longevity Dashboard and IT-Platform is a single project with 6 individual component dashboards. The majority of Front End and Back End systems and features will be applicable to all 6 individual component dashboards, with some adjustments and additional dashboard-specific features integrated required on a case-by-case basis for each individual dashboard.



## General Features will include:

1. Interactive real-time data visualization in the form of mindmaps, charts, lists, region maps, bar graphs, etc.
2. Access to merged databases of entities, products, services and technologies related to Longevity and HealthCare Industries.
3. Incorporated AI-driven vendor-client smart-matching based on client's geography and existing unmet needs and preferences.
4. Sophisticated Big Data analysis of Longevity Market and Industries Trends, future strategies and national plans.
5. Tailored recommendation packs.
6. Entities quantitative ranking and benchmarking (both positive and negative).
7. Filters implementing, so to sort entities via names, categories, locations, overall activity, investments and financing, etc.

# Longevity Dashboard Architecture

## Global Longevity Ecosystem

- Centralized and integrated Global Longevity Industry Ecosystem IT-Platform
- Created by integrating all previous region and domain-specific Longevity IT Platforms
- Will also integrate 2 new/upcoming Longevity reports and IT-Platforms: Longevity Industry in Alpine Europe, and mHealth in Alpine Europe
- Will be used as basis for building stage-2 platform, only containing entities relevant for Longevity Bank's marketplace and candidate partners and ambassadors.

## B2C Dashboard

- Dashboard aggregating relevant vendors of products and services across full scope of Longevity and Healthy Living
- Includes: physical and psychological health, fitness, cosmetics, financial wellness ("wealthspan"), clinics, sport and exercise, diet and supplements, precision health clinics, diagnostic and prognostics etc.), for exclusive use by Longevity Cardholders
- Incorporates AI-driven vendor-client smart-matching based on client's geography and existing unmet needs

## B2B Dashboard

- Second-level Marketplace Dashboard available only for Longevity Bank Institutional and Corporate Clients, and B2C marketplace vendors, allowing clients to list market and distribute their products and services to other businesses (clients and/or B2C marketplace vendors)
- Uses AI-driven smart-matching to enable B2B transactions between Longevity Bank Corporate Clients on the one hand, and approved B2C Marketplace Vendors
- Clients get rewards based on volume of B2B transactions

## Investment Analytics Dashboard

- Provides advanced, sophisticated and quantitative Big Data analysis on Longevity companies and Longevity investment strategy.
- Will contain more in-depth data and analytics on the companies featured in the B2C and B2B Dashboards
- SWOT analysis tailored to clients' geographical, development stage and sector-specific focus
- The results of the analysis will be used to provide tailored recommendation packs to hedge risks and maximize diversification

# Longevity Dashboard Architecture

## Longevity Finance Dashboard

- **Market intelligence** on the Longevity-related activities of hundreds of major financial institutions (investment banks, pension funds, insurance companies, retail banks).
- **SWOT analysis** and **competitive landscaping**.
- Quantitative **ranking** and **benchmarking** (both positive and negative) of financial corporations.
- **B2B marketplace** of relevant Longevity financial products and services.
- **Big Data, Machine Learning and AI Analytics** capabilities.
- Combines the sophisticated technological and **data visualization** resources of Deep Knowledge Group's IT department with the **quantitative** multidimensional industry **analytics** of Aging Analytics Agency.
- Provides progressive financial institutions interested in capturing the massive rising tide of **Longevity Finance** with the necessary set of tools required to structure, optimize and execute their **business models, products, services** and strategic decision-making in a way that is relevant for the **extreme complexity** and **multidimensionality** of Longevity.

## Longevity Governance Dashboard

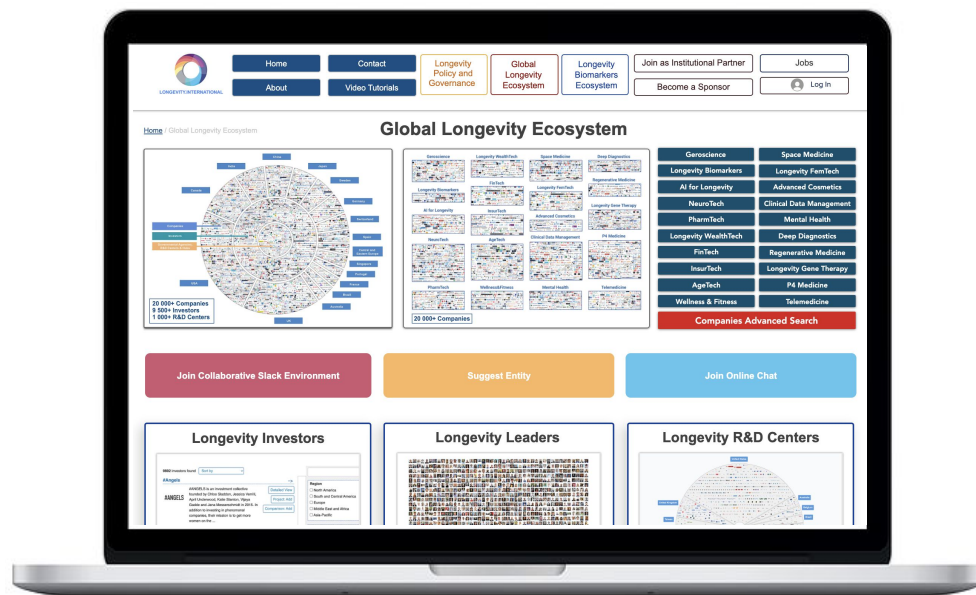
- Applies **big data analysis** to identify social policy, healthcare, medical, financial and socioeconomic **factors** having the greatest effect on the **gap** between life expectancy at birth and **Health-Adjusted Life Expectancy (HALE)** for 100 regions.
- Identifies factors and practices behind certain regions' success in maintaining a high degree of **National Healthy Longevity** and a low gap between HALE and Life Expectancy.
- Provides **tangible** and **practical recommendations** tuned to the specifics of individual countries, providing the necessary set of tools to allow countries currently leading the international Healthy Longevity race to **maintain** and **improve** their current standing.
- Features region-specific **recommendation packs** to enable governments currently lagging behind others to reduce their HALE gap and improve their comparative global standing, transforming the deficit and challenge of the silver tsunami into the **asset** and **opportunity** of Healthy Longevity for the mutual benefit of their citizens and their economy.

# Dashboard Access Structure Target Clients & Hierarchy of End-Users

	Longevity Ecosystem	B2C Marketplace	B2B Marketplace	Investment Analytics	Finance Analytics	Governance Analytics
Longevity Club	+	+				
Longevity Bank	+	+	+	+	+	
Specialized Dashboard	+	+	+	+	+	+
Mobile App		+	+			
BigData Analytics Machine Learning	+	+	+	+	+	+
Commercial Solutions for External Users			+	+	+	+
Internal Use for Deep Knowledge Group	+	+	+	+	+	+

# Dashboard N1 - Global Longevity Industry Ecosystem: Main Features

The Global Longevity Ecosystem dashboard will be in the form of an interactive mind map with 50,000+ entities, containing individual profiles of Longevity-focused companies, investors and R&D Hubs. This dashboard will serve as the foundation for Dashboards N2-N6.



- Mindmaps are sophisticated tools for visualizing market segmentation and connections between Longevity Industry entities and stakeholders, particularly companies, investors, personalities, government organizations, non-profits and R&D Hubs.
- The mindmaps are divided into layers, or sectors, and sectors are segregated into groups. Each group relates to a particular category, sector or practical application, for example, AgeTech, P4 Medicine, etc., and logos of companies that are connected to this group are put in specially designated places for this.
- Aging Analytics Agency's interactive mindmaps and IT-Platforms are a unique and major hallmark of their brand, and one of the main factors that has established them as the leader of sophisticated, quantitative and multidimensional Longevity Industry analytics.

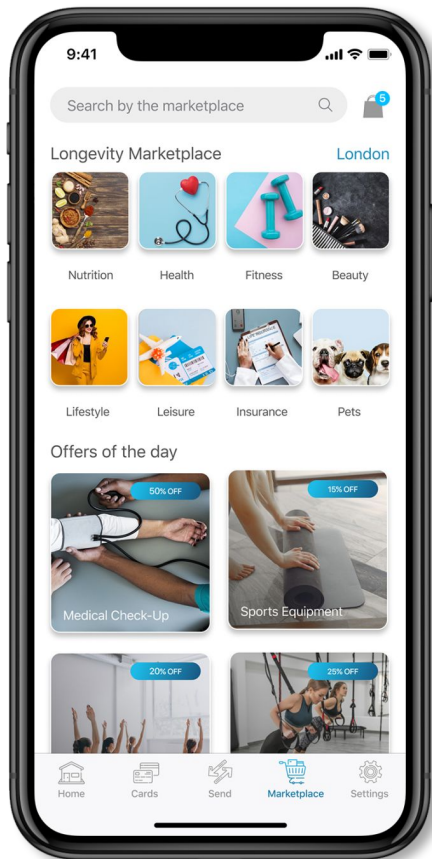


# Global Longevity Ecosystem Overview

**20,000 + entities (category-specific scope and estimated quantity):**

- **Companies (~6000):** Longevity and Wellness related companies developing therapeutic, diagnostic, medical and consumer devices, products and services to address and maintain the full scope of Healthy Longevity, from biological, psychological and social health to financial wellness.
- **Investors, Funding Agencies (~4000):** Main organizations which invest in key players in the Longevity and Aging sphere, support bodies and lenders helping to aid the efforts of relevant companies, labs, centers, etc.
- **R&D Centres, Hubs, Clinics (~5000):** Labs, R&D centers, hubs, universities and institutes, clinics and hospitals etc. functioning in the Longevity Industry, dedicated to scientific research in related fields and emerging approach for multiple diseases (as well as aging-associated conditions) treatment and prevention.
- **Personalities (~5000):** Public and private-sector professionals working to grow the Longevity landscape through their efforts in business, science, policy, philanthropy and thought-leadership, with a focus on entrepreneur-scientists, technologists, and professionals working on practical applications in humans and translational research, rather than on animal models and so-called “basic scientific research” that is far away from real-world implementation.cc
- **Financial institutions (~500):** Investment banks, insurance companies, pension funds and FinTech companies with tangible interests or activities within the Longevity Financial sphere, seeking to leverage the rising tide of Longevity, the convergence of increasing healthspans and wealthspans, and the 1 trillion opportunity of 1 billion people in retirement
- **Regions and Territories (~200):** National governments trying to increase their National Healthy Longevity, reduce the gap between Health-Adjusted life Expectancy and unadjusted Life Expectancy, and facilitate Longevity industrialization.

# Dashboard N2 - B2C Longevity Marketplace: Main Features



Longevity Marketplace offers the World's Best Products and Services in the Industry, Exclusively Featuring Scientifically and Technically Validated Vendors

## B2C Dashboard Special Features

AI-driven Personalized Products/Services

AI-powered Categorized Products/Services

Integrally Linked with Longevity Bank's Mobile App and Longevity Club Ecosystem

AI-driven Personalized Health Recommendations

Data and Transaction Security Using Blockchain Technology

Longevity Reward System and Internal Cryptocurrency

# Dashboard N2 (B2C Longevity Marketplace): Major Use Cases

## Longevity Club Members and Longevity Bank Clients:

- Access to a highly diverse marketplace of products and services across the entire scope of Longevity, Wellness and Healthy Living (all the way from healthspan to wealthspan).
- Discounts on Marketplace purchases obtainable through Longevity Reward Points that are generated every time they use their Longevity Card.
- Targeted real-time recommendations on local and global products and service providers best-suited to help achieve and surpass their current Longevity Goals.
- AI-driven personalized health recommendations and suggestions, based on biomarker analysis, the results of a comprehensive diagnosis of the client's health status, on how to promote and maintain a healthy lifestyle and slow aging.

## Longevity Vendors:

- Suppliers of Longevity, health and wellness-focused products and services will be able to obtain access to a much larger, and extremely relevant (i.e., highly focused) client base by joining the platform.
- Capacity to significantly expand their market and target demographic in exchange for giving up a small portion of their profits (access fee for being a vendor on the platform), AKA the "GroupOn" business model.
- Heightened marketing and public visibility, and access to Longevity Bank's sophisticated Marketing Engine.
- Potential visibility to investors via the Investment Analytics Dashboard.

## Major Corporate Vendors:

- Large corporate vendors, such as major Pension Funds and Insurance Companies interested in Longevity, can benefit from gaining access to a highly targeted and qualified set of individuals looking to maintain very healthy lifestyles, with a large unmet desire for progressive financial institutions willing to financial underwrite their efforts to maximize their Healthy Longevity.

# Dashboard N3 (B2B Longevity Marketplace): Main Features

Our B2B Dashboard will provide a marketplace platform for companies participating in the Longevity Industry. The main goal of this platform is to create feasible ecosystemic solution for both vendors (buyers) and suppliers. The B2B marketplace will allow its customers to promote their services via advanced MarTech system, as well as buy and sell their products. Additionally, the platform supports internal blockchain-based currency which will provide an adequate solution for transaction security enhancement.

## B2B Marketplace Platform Features

Registration and onboarding of SMEs (corporate and business clients)

Convenient interface for SMEs' products and services placement and management

Internal communication via chat

MarTech system

Real-time analytics on SME's performance

Data Security



An analogue technical solution, [Longevity Investment Big Data Analytics Dashboard](#), can be seen above

# Dashboard N3 (B2B Longevity Marketplace): Major Use Cases

## Corporate Longevity Cardholders and Clients:

- Access to a highly diverse marketplace of potential produce and service providers, enabling supply chain optimization.
- Discounts on B2B marketplace purchases obtainable through Longevity Reward Points that are generated every time they use their Longevity Card.
- Targeted real-time recommendations on local and global products and service providers.
- Free-of-charge analytics on how supply chains can be optimized

## Longevity Vendors:

- Suppliers of Longevity, health and wellness-focused products and services will be able to obtain access to a much larger, and extremely relevant (i.e., highly focused) client base by joining the platform.
- Capacity to significantly expand their market and target demographic beyond retail users and towards corporate and institutional buyers.
- Heightened marketing and public visibility.
- Potential visibility to investors via the Investment Analytics Dashboard.

# Dashboard N4 - Investment Analytics: Main Features

The Investment Analytics Dashboard is targeted toward investment funds with an interest or focus on Longevity, providing clients access to quantitative, sophisticated and multidimensional analytics on many potential future portfolio companies and investment prospects.



1. The platform provides real-time analytics and data feeds on potential investment candidates, providing insight into their development prospects over time and their future growth potential.
2. Provides advanced, sophisticated and quantitative Big Data analysis on Longevity companies and Longevity investment strategy.
3. Contains more in-depth data and analytics on the companies featured in the B2C and B2B Dashboards.
4. SWOT analysis tailored to clients' geographical, development stage and sector-specific focus.
5. Results of the analysis will be used to provide tailored recommendation packs to hedge risk and maximize diversification.

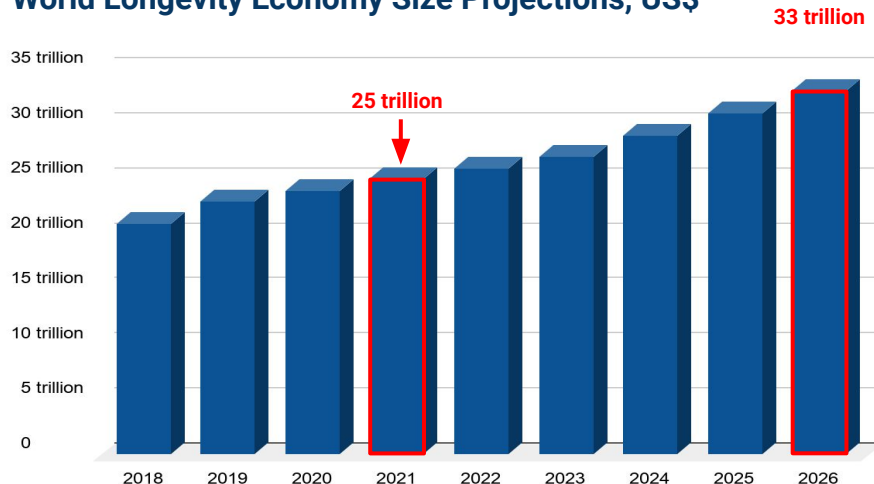
# Dashboard N4 (Investment Analytics): Major Use Cases

## About Longevity Investment Big Data Analytics Dashboard

Longevity investment analytics dashboard developed by Aging Analytics Agency (AAA) is aimed at producing **knowledge-based validated investment insights** covering various sectors of longevity industry forming 4 major groups: longevity financial industry, longevity R&D, longevity medicine, and longevity technology.

The project is dedicated to generating **advanced data-driven quantifiable investment recommendations** in order to conduct **tangible, fast, comprehensive, and inexpensive SWOT analysis and due diligence** for longevity companies and investors, as well as **real-time financial analytics and consulting** for publicly traded corporations in longevity sectors, which includes 3 stages: data parsing, AI-driven data analysis, and user-friendly data visualization.

## World Longevity Economy Size Projections, US\$



The analytics can deliver value to investors looking for funding targets and companies analyzing their competitors

### Investors

- SWOT analysis of investment targets.
- Due diligence of portfolio companies.
- Stock market analysis.
- Analysis of the strategies of leading industry investors.

### Companies

- SWOT analysis of competitors.
- Automated business development recommendations generation.
- AI-based matching with investors.

# Dashboard N4 (Investment Analytics): Key Services

## Services for Companies

Deep SWOT Analysis

Benchmarking and Ranking

R&D Optimization

Recommendations on Hiring Specialists

Analysis of Relevance of Prospective Investors

Matching with Prospective Investors

Support of the Deal Making

## Services for Investors

Portfolio Optimization

Automated Data-driven Due Diligence

Investment De-risking

Investment Target Selection

AI-based SWOT Analysis of Investment Targets

Competitor Strategies Analysis

Matching with Partners

**Our key analytics and consulting services will provide your organization with an access to a highly specialized data-driven AI-based expertise and wide array of advanced analytical products**



# Dashboard N4 (Investment Analytics): Due Diligence for Investment Funds

Category	Metric
Core Identifiers	IIC location, Regulatory jurisdiction, Regulatory level, Collaborations, Number of publications, Impact factor of publications, IP, Patentability - ICA, Regulatory process, Critical pathway process that aid gate, Milestones, Customer interest level, Targeted demographics, Funding, Clinical trials, Access and cell therapy, Time to cost, Patent portfolio, Regulatory compliance, Clinical trial status, Financial health, Revenue, Intellectual Property (IP), Commercialization, and IP protection.
Status & Activity	Stage of business & life cycle, Counties involved, Product type, Priority factor
Clinical Profile	Participating in scientific conferences, Critical trials, R&D depth
Funding	Return on investment, Ratio of investment to IP produced, Number of subsidiary companies
Target of Interest	Market field analysis, Marketing business, Sponsorship activities, Events attended
Intellectual Property	Technology, Genetic disease, Obesity, Allergy, Neurology, Biotechnology, Chemistry, Oncology, Immunology, Cardiology, Dermatology, Ophthalmology, Neurosurgery, Dentistry
Regulatory	Product/Process/Use, Intellectual/M/Deployment, Regulatory compliance, Clinical trial status, Financial health, Revenue, Intellectual Property (IP), Commercialization, and IP protection.
Early Development	Product/Process/Use, Intellectual/M/Deployment, Regulatory compliance, Clinical trial status, Financial health, Revenue, Intellectual Property (IP), Commercialization, and IP protection.
Other	Product/Process/Use, Intellectual/M/Deployment, Regulatory compliance, Clinical trial status, Financial health, Revenue, Intellectual Property (IP), Commercialization, and IP protection.

Using sophisticated quantitative analytical frameworks, we identify and provide recommendations on most promising startups, most undervalued or overvalued companies thus enhancing the process of investment target identification for large investment funds.

Enhanced due diligence for actual investment targets, conducting deep analysis of ratios of scientific and technological strength, management team strength, business development, marketing, IP and other pertinent metrics are applied to strengthen and somewhat automate the due diligence process of investment firms interested in this sector.

## Analysis includes the identification of the companies which:

- Have unique technology and advantage in some particular domain of Longevity Industry.
- Are undervalued or currently early-stage and could be considered as an interesting potential investment target.
- Have strong scientific background and validation in R&D.
- Exhibit IP-compliance according to our infringement analysis, and can be considered as a reliable counterparty for corporate clients and partners.

# Dashboard N5 - Longevity Finance: Main Features

Longevity Finance Dashboard released as the sophisticated technological, data visualization in form of dynamic infographics, 3D mindmaps. Aging Analytics Agency (that provides a database for the Dashboard) will produce a comprehensive analytical overview of the emerging Longevity Financial Industry.

The platform featured a number of specific components that together encompass the entire scope of the Longevity Finance sector, providing: market intelligence on the Longevity-related activities of hundreds of major financial institutions, SWOT analysis and competitive landscaping, quantitative ranking and benchmarking (both positive and negative) of financial corporations, forecasting, B2B marketplace of relevant Longevity products and services, and Big Data, Machine Learning and AI Analytics capabilities.



# Dashboard N5 (Longevity Finance): Major Use Cases

## Financial Institutions (Retail Banks, Investment Banks, Insurance and FinTech)

- The dashboard consists of a licensed white-label solution offered to a variety of external financial corporations (major retail banks, investment banks, insurance companies, FinTech companies, etc.) looking to transform their business model toward Longevity-focused banking and Health as New Wealth, in order to capture the massive untapped multi-trillion market of 1 billion people in retirement globally.
- The dashboard provides out-licensed access to Longevity Bank's B2C and B2B dashboards, where external financial institutions first sign a non-competition agreement obliging them to focus on markets and regions that are not within the scope of Longevity Bank's target market, and pay a premium in exchange for access to Longevity Bank's ecosystem and marketplace of Longevity products and services.
- The dashboard enables financial institutions interested in Longevity to select and filter Longevity products and services available within their region, in order to aggregate a set of vendors capable of providing their own clients with relevant products and services designed to maximize Healthy Longevity across the full scope of the global Longevity ecosystem (from healthspans to wealthspans).
- Clients can gain access to advanced analytics showing relevant benchmarking parameters for available vendors within each specific product and service category, enabling them to conduct cost-benefit analyses and determine which vendors are best suited to meet the needs of their clients within their specific target demographic and regional market.
- The dashboard provides continuous monitoring and market intelligence of the specific Longevity-focused activities, products and services developed and deployed by 300 financial corporations globally, to continually track, analyze and rank best practices within the Global Longevity Financial Industry.

# Dashboard N5: White Label Solution for Longevity Financial Industry Analytics

## End-to-End Solution of Proprietary Analytics and Practical Recommendations on the Longevity Financial Industry

Large financial institutions lack the deep industry expertise required to transform their business models in a relevant Longevity-focused manner and to develop new Longevity financial products and services in a relevant manner

Aging Analytics Agency (major provider of analytics for Longevity Bank) has been producing advanced Longevity Industry analytics for 5+ years, and produced the first ever analytical report on the Longevity Financial Industry.

The agency is in an unparalleled position to offer the SWOT analysis, customized practical recommendations, benchmarking, forecasting and guidance needed to transform financial institutions for the Longevity Future.

Major Topics Include: Integrated AgeTech & WealthTech Solutions for Clients 80-100+, Longevity FinTech 2.0, AI for Financial Wellness, Longevity De-Risking, How to Develop Novel Longevity-Focused Financial Products



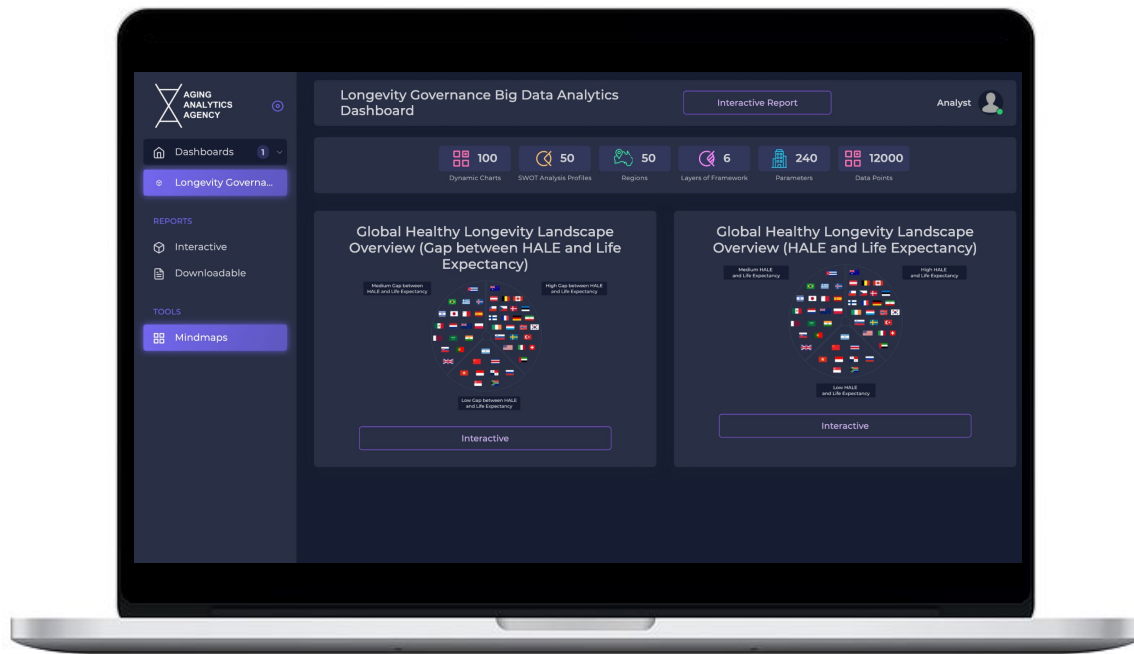
# Dashboard N5 - Main Technologies

Please, find below a list of technologies (i.e. AI, ML, algorithms, data aggregation and mathematical transformations) used in each of our products.

SWOT analysis	Data aggregation	Forecasting	Clusterization and competitor analysis
Polynomial formulas, multidimensional vector spaces	Data extrapolation through regressions	Neural networks with LSTM layers for time series data analysis	Unsupervised machine learning for financial institutions clusterization
Mathematical transformations: logarithmic, exponential, parabolic, multiplicative	Data extrapolation through deep neural networks	Recurrent neural networks to extract complex hidden connections from the data	K-Means algorithm for financial institution clusterization
Business development harmonization analysis: definite integrals, standard deviation	Natural language processing for tag cloud creation	Cash flow forecasting	Calculation of a distance between institutions in a multidimensional space
Variance-covariance analysis of the parameters of the financial institutions	Data parsing	GARCH model	Convolutional neural networks for identification of institutions with similar patterns
Linear algebra	Deep neural networks for data structuring	Real option analysis, scenario planning	Using tag clouds to categorize financial institutions

# Dashboard N6 - Longevity Governance: Main Features

The Longevity Governance Dashboard applies big data analysis to **identify social policy, healthcare, medical, financial and socioeconomic factors** having the greatest effect on the gap between life expectancy at birth and Health-Adjusted Life Expectancy (HALE) for 150 regions.



The dashboard focuses on **identifying the factors and practices behind certain regions' success** in maintaining high National Health Longevity, and a low gap between Health-Adjusted Life Expectancy (HALE) and unadjusted Life Expectancy.

It utilizes the results of its region-specific analysis to **offer tangible and practical recommendations** tuned to the specifics of **individual territories**, providing the necessary set of tools to enable national governments, individual economy, healthcare and industrial development industries, international policy organizations and other responsible stakeholders to **formulate and implement policies and development strategies capable of transforming the challenge of aging into the opportunity** of Healthy Longevity for the mutual benefit of their citizens and their economy.

# Dashboard N6 (Longevity Governance): Major Use Cases

## Government Agencies, Healthcare, Economy & Industrial Development Ministries, & International Policy Organizations

- The Longevity Governance Dashboard delivers access to continuous monitoring of the specific governmental policy activities directly impacting both National Healthy Longevity and Longevity Industrialization, and to consistently track and analyze data points related to government-led Longevity Development initiatives.
- Applies **big data analysis** to identify social policy, healthcare, medical, financial and socioeconomic **factors** with the greatest effect on the **gap** between life expectancy and **Health-Adjusted Life Expectancy (HALE)** for 100 regions.
- Identifies factors and practices behind certain regions' success in maintaining a high degree of **National Healthy Longevity** and a low gap between HALE and Life Expectancy
- Provides **tangible** and **practical recommendations** tuned to the specifics of individual countries, providing the necessary set of tools to allow countries currently leading the international Healthy Longevity race to **maintain** and **improve** their current standing.
- Features region-specific **recommendation packs** to enable governments currently lagging behind others to reduce their HALE gap and improve their comparative global standing, transforming the deficit and challenge of the silver tsunami into the **asset** and **opportunity** of Healthy Longevity for the mutual benefit of their citizens and their economy.

Longevity Governance	Recommendation Packs	Industrial Strategies	Precision Health
	Advanced IT-Solutions	Analytics & Benchmarking	Modernization

# Dashboard N6 (Longevity Governance): Practical Recommendation Packs

The Longevity Governance Dashboard applies big data analysis to identify social policy, healthcare, medical, financial and socioeconomic factors having the greatest effect on the gap between life expectancy at birth and Health-Adjusted Life Expectancy (HALE) for 100 regions.

Many governments are putting policies on Longevity at the center of their growth strategies and budget planning, while others lag behind. Identifying the factors and practices behind certain regions' success is critical to enabling national governments and interational policy organizations to formulate and implement policies and development strategies capable of transforming the challenge of ageing population into the opportunity of Longevity.

The dashboard utilizes the results of its analysis to offer **tangible and practical recommendations** tuned to the **specifics** of individual countries and territories, providing the necessary set of tools to allow regions currently leading the international Healthy Longevity race to maintain and improve their current standing, and to allow countries currently lagging behind others to improve their comparative global standing, enabling inflection points within the opposed megatrends of Ageing Population and Advanced Biomedicine to be leveraged to enable economic growth and increases in quality of life.

## Key Topics for Analysis and Practical Recommendations

- What specific features of healthcare systems, socio-economic conditions, environmental factors affect public health the most?
- How does the impact of such factors differ across regions?
- What constellation of factors contributes the most to Healthy Longevity?
- Which factors are the main drivers of health-adjusted life expectancy and disability-adjusted life years?
- What regions are leaders in Longevity governance?
- Why do disproportionate healthcare expenditures in the United States contribute to poor healthcare system performance and a decline in overall life expectancy in recent years?
- Why is the healthcare system in Singapore considered as one of the most efficient in the world?
- What can be done to improve National Healthy Longevity in each territory globally?



# Dashboard N6 (Longevity Governance): Big Data Analytics Framework

## Data Collection

- 150 regions
- 240 parameters per region
- 12,000 parameters in total

## Data Cleaning

Aggregation  
of data by 5  
dimensions

- Economic conditions
- Demography
- Health care and Longevity
- Environment
- Social factors

## Model Creation

- Factor analysis of LE-HALE gap determinants (multiple regression)
- Analysis of variance of major longevity parameters across groups of countries (ANOVA)
- Defining leading countries in longevity governance (ranking)
- Estimation of relationships between metrics (intraclass correlation)
- Assessment of effectiveness of healthcare systems

## Model Validation

- Hypothesis testing
- Sensitivity analysis

## Development of Recommendations

- Incorporation results of research in practical region-specific and department-specific recommendations

# Global Longevity Ecosystem IT-Platform Dashboard

# Introduction: Mapping and Visualizing the Global Longevity Ecosystem

In June 2021, Aging Analytics Agency released an advanced online IT-Platform and database that will deliver clients access to online real-time reporting on developments in the Global Longevity Ecosystem, featuring interactive mind maps and profiles of 20,000+ entities including companies, investors, R&D hubs, influencers, national governments and financial institutions.

The companies featured in the platform will serve as the list of candidate product and service vendors to be included within the first two specialized dashboards that will be built on top of it: the B2C and B2B Longevity Marketplace, respectively. These marketplaces will feature companies active in several sectors:

AgeTech

FinTech

P4 Medicine

AI for Longevity

BioTech

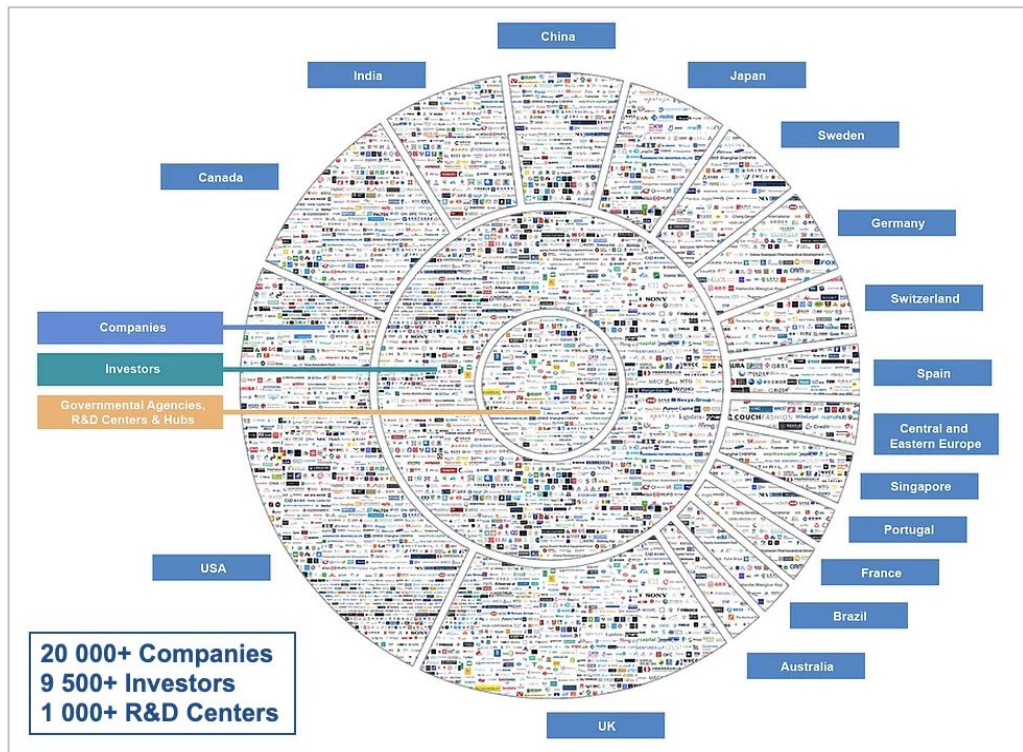
Telemedicine

Meanwhile, the IT-Platform also used as the starting point for the development of three other topic-specific Longevity Dashboards:

- **Longevity Investment Analytics Dashboard**, which will offer detailed, quantitative and multidimensional analytics and up-to-date reporting on Longevity companies, which can serve as investment prospects for investment funds interested in the rising Longevity sphere, as well as SWOT analysis and practical recommendations on general investment strategy relevant for Longevity
- **Longevity Finance Dashboard**, offering Big Data analytics, SWOT analysis and practical recommendations for financial institutions looking to take advantage of the rapidly developing Longevity Financial Industry and the 1-trillion opportunity of 1 billion people in retirement globally
- **Longevity Governance Dashboard**, which will offer sophisticated Big Data analytics, SWOT analysis and practical recommendations on how to maximize National Healthy Longevity.

# Global Longevity Industry Ecosystem Interactive IT-Platform

Global Longevity Ecosystem dashboard is available in the form of an interactive mindmap with 30,000+ entities, use the same style of mindmaps we have for our reports, but the definition is in number of entities presented.



- Mindmaps are sophisticated tools for visualizing market segmentation and connections between Longevity Industry entities and stakeholders, particularly companies, investors, personalities, government organizations, non-profits and R&D Hubs.
- The mindmaps are divided into layers, or sectors, and sectors are segregated into groups. Each group relates to a particular category, sector or practical application, for example AgeTech, P4 Medicine, etc., and logos of companies that are connected to this very group are putted in specially designated place for this.
- Aging Analytics Agency's interactive mindmaps and IT-Platforms are a unique and major hallmark of their brand, and one of the main factors that has established them as the leader of sophisticated, quantitative and multidimensional Longevity Industry analytics.

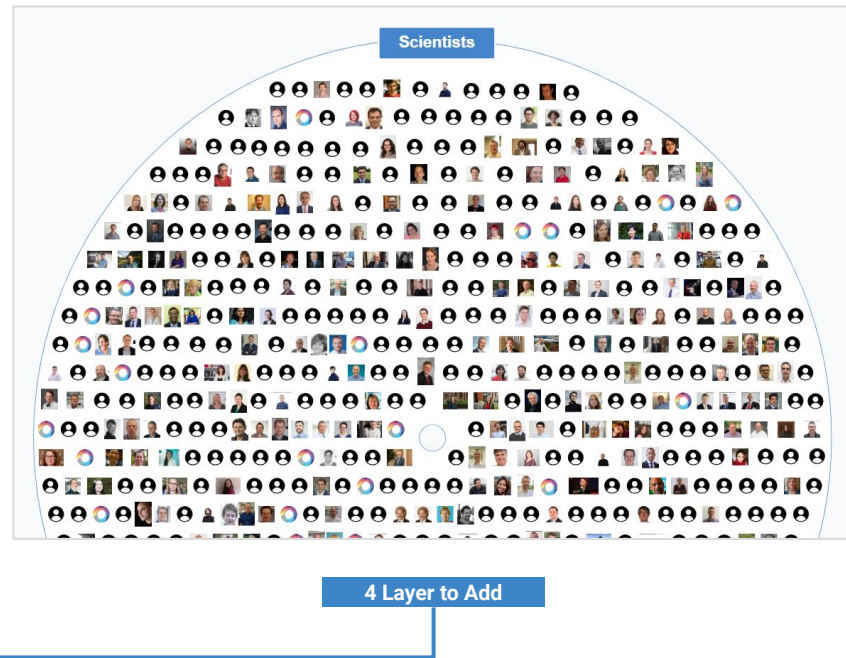
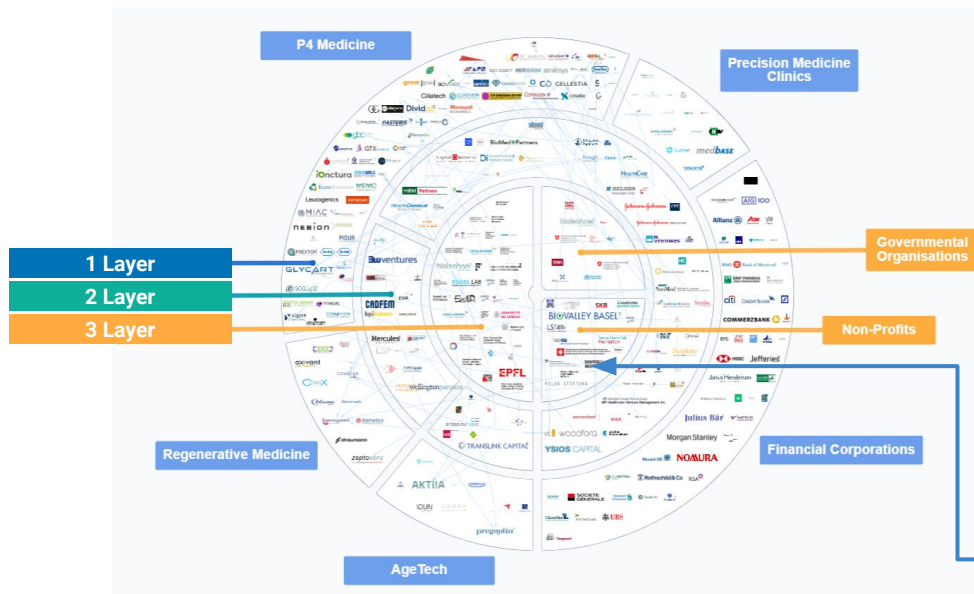
# Multi-Layer Mindmap

## 30,000 + entities (category-specific scope and estimated quantity):

- **Companies (~20000):** Longevity and Wellness related companies developing therapeutic, diagnostic, medical and consumer devices, products and services to address and maintain the full scope of Healthy Longevity, from biological, psychological and social health to financial wellness.
- **Investors, Funding Agencies (~10000):** Main organizations which invest in key players in the Longevity and Aging sphere, support bodies and lenders helping to aid the efforts of relevant companies, labs, centers, etc.
- **R&D Centres, Hubs, Clinics (~2000):** Labs, R&D centers, hubs, universities and institutes, clinics and hospitals etc. functioning in the Longevity Industry, dedicated to scientific research in related fields and emerging approach for multiple diseases (as well as aging-associated conditions) treatment and prevention.
- **Personalities (~1800):** Public and private-sector professionals working to grow the Longevity landscape through their efforts in business, science, policy, philanthropy and thought-leadership, with a focus on entrepreneur-scientists, technologists, and professionals working on practical applications in humans and translational research, rather than on animal models and so-called “basic scientific research” that is far away from real-world implementation.cc
- **Financial institutions (~500):** Investment banks, insurance companies, pension funds and FinTech companies with tangible interests or activities within the Longevity Financial sphere, seeking to leverage the rising tide of Longevity, the convergence of increasing healthspans and wealthspans, and the 1 trillion opportunity of 1 billion people in retirement
- **Regions and Territories (~200):** National governments trying to increase their National Healthy Longevity, reduce the gap between Health-Adjusted life Expectancy and unadjusted Life Expectancy, and facilitate Longevity industrialization.

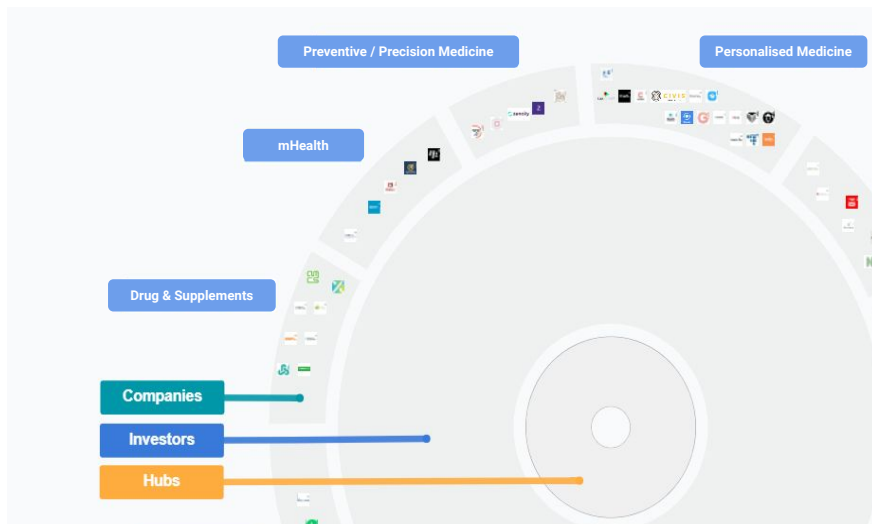
# Global Longevity Industry Ecosystem Interactive IT-Platform

Mindmaps often consist of 3 layers (circles) to represent companies sector, investors and non-profit, but the global IT-Platform will also incorporate a fourth layer for influencers and thought leaders, which will be displayed just like companies with their photos in the central circle (4 layer).



# Multi-Layer Mindmap

Clicking on specific layer (sectors) of the mindmap will cause the user interface to zoom into that particular segment of the mindmap, causing other layers to disappear



Entities are grouped both by category (e.g. companies, investors, non-profits, etc.) and by sector or practical application (e.g. AgeTech, FinTech, mHealth, etc.)

1) Each mindmap sector will have a specific color



2) Mindmaps will also incorporate a side-dashboard of sector or entity-type specific entities, detailed in the form of a Flat Mindmap:



# Multi-Layer Mindmap

Clicking on each entity separately opens its profile:

The screenshot shows a multi-layer mindmap interface. On the left, a sidebar lists several categories: Progressive clinics, AgeTech, Preventive Medicine, and Regenerative Medicine. Each category contains several logos of associated entities. An arrow points from the 'AgeTech' category to the main profile of Bio3D Technologies. The main profile includes the company logo, a description of their 3D printing technology, and contact information.

«Bio3D Technologies»

**Bio3D Technologies** Company

Bio3D Technologies have created world's first and Singapore's first true scientific and biological 3D printer with multiple print heads, modular design, nozzle-to-platform auto-alignment, remote viewing and control etc. They are also the first to integrate an anti-vibration levitating platform into a 3D printer. With the introduction of Bio3D Explorer, they made 3D bioprinting even more affordable and accessible. Once again, they created the world's first portable, foldable bioprinter.

Technology: **AgeTech**  
Industry: **AgeTech**  
Headquarters: **Singapore, Central Region, Singapore**  
Funding Status: **N/A**

<https://www.bio3d.asia/>  
✉ [sales@bio3d.asia](mailto:sales@bio3d.asia)

Alex Richter



Country: **United Kingdom**

Company: **University of Birmingham.**

Alex Richter is a researcher at University of Birmingham.

Project: An observational study to examine the clinical utility and acceptance of SARS-CoV-2 serology testing in convalescent patients to establish their role in identifying individuals with prior exposure to infection.

Funder: University of Birmingham.

[Visit Website](#)

[✉ a.g.richter@bham.ac.uk](mailto:a.g.richter@bham.ac.uk)





# Multi-Layer Interactive IT-Platform and Dashboard

Complex Multi-Layer Interactive IT-Platform and Dashboard that will be used as a basis for building the Longevity Marketplace with 20,000 + relevant entities:

**First layer** - companies.

**Second layer** - investors + funding organizations.

**Third layer** - hubs.

**Fourth layer** - personalities.



**Detailed Mindmaps**

- 1000 Companies
- 600 Investors
- 35 AI Hubs

**Lists**

- Companies
- Investors
- Other
- All Firms

The purpose of the platform is to interactively and dynamically display, categorize and visualize 50,000 entities active in the Global Longevity Industry Ecosystem, which will then be used as a basis for selecting the specific product and service producers (i.e., vendors) for inclusion in the Longevity Marketplace, built and maintained by Longevity Bank, and made available to Longevity Card clients.

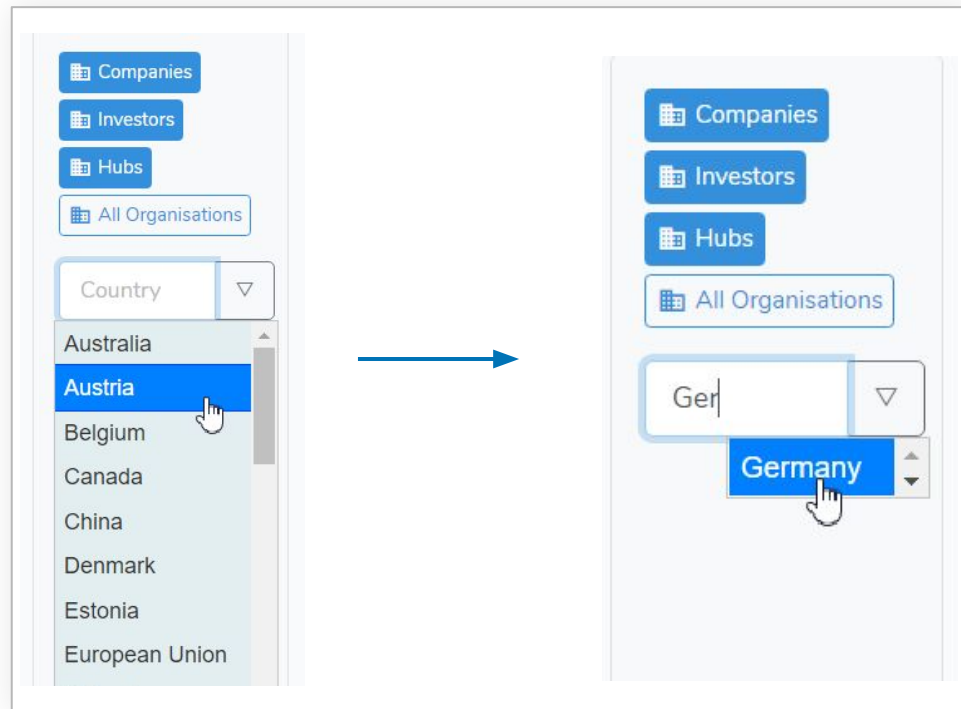
# Multi-Layer Mindmap

**The platform's mindmaps are searchable and filterable based on a number of key criteria:**

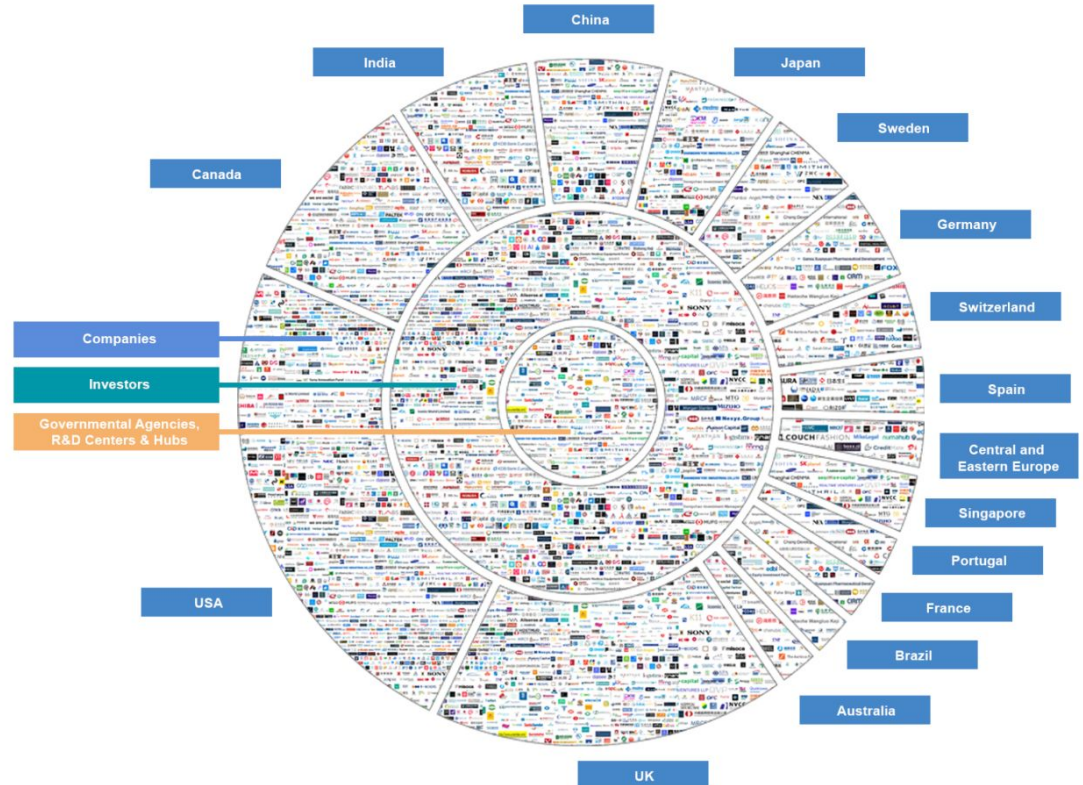
- 1) Search by region/country (on several levels of granularity, from country all the way down to city);
- 2) Search by category/group (for example, search only for HealthTech companies);
- 3) Search by name of entity.

**Future iterations of the platform will allow entities to be searched and filtered by a broader set of criteria:**

- 1) Search by minimum size (revenue);
- 2) Search by minimum growth-rate (revenue or user base);
- 3) Search by number and diversity of products and services.



## Longevity Ecosystem by Country



# 20 000 Companies by Sector

## Geroscience



## Longevity WealthTech



## Space Medicine



## Deep Diagnostics



## Longevity Biomarkers



## FinTech



## Longevity FemTech



## Regenerative Medicine



## AI for Longevity



## InsurTech



## Advanced Cosmetics



## Longevity Gene Therapy



## Neuro Tech



## AgeTech



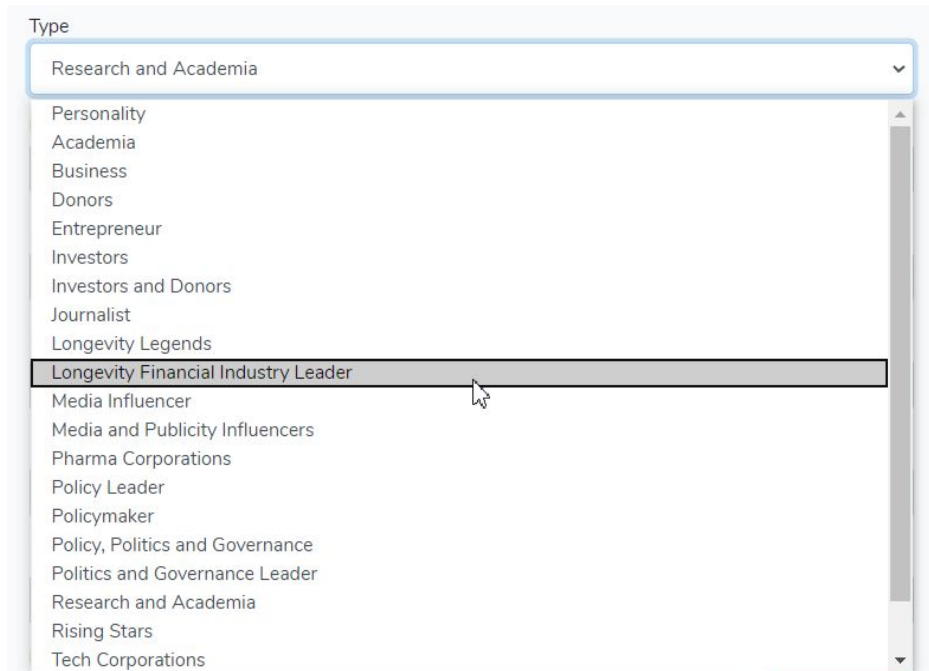
## Clinical Data Management



## P4 Medicine

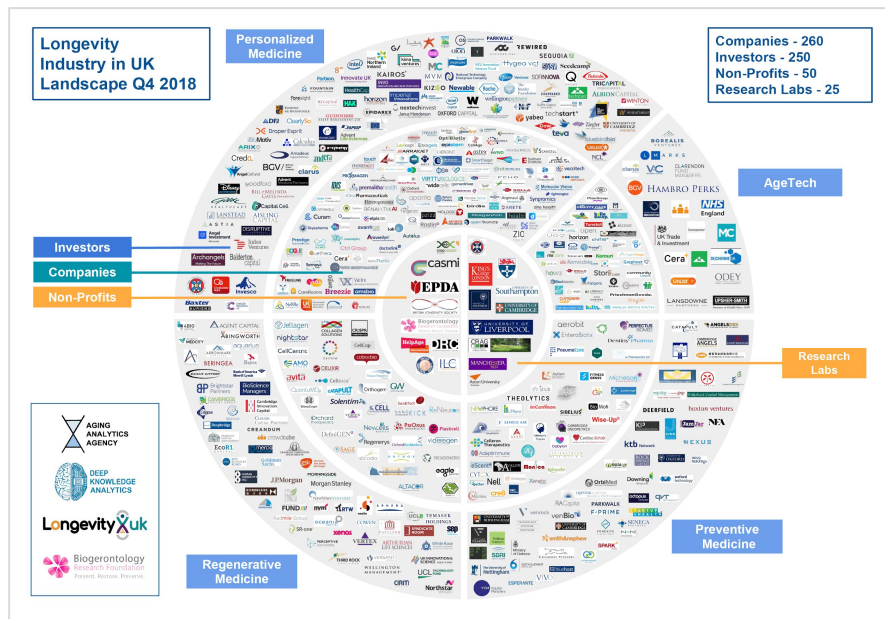


All “Longevity Leaders” featured on the platform have a strict focus on practical application, real-world clinical translation and the development of market-ready products and services.



# Longevity Industry in UK and Switzerland

Aging Analytics Agency was the first company to produce comprehensive special analytical case studies on the Longevity Industry ecosystem in the UK (1000+ pages and 2 editions) and Switzerland (500+ pages), providing an in-depth overview of major trends, developments and regional differentiating factors, and profiling hundreds of major players including companies, investors, non-profits, R&D hubs and influencers. This analytical experience and expertise will be used as a major basis for selecting relevant UK and Swiss entities for the IT-Platform and vendors for the Marketplace.



# B2C Dashboard for Retail Users

LONGEVITY MARKETPLACE

# Major Use Cases

## Longevity Club Members and Longevity Bank Clients:

- Access to a highly diverse marketplace of products and services across the entire scope of Longevity, Wellness and Healthy Living (all the way from healthspan to wealthspan).
- Discounts on Marketplace purchases obtainable through Longevity Reward Points that are generated every time they use their Longevity Card.
- Targeted real-time recommendations on local and global products and service providers best-suited to help achieve and surpass their current Longevity Goals.
- AI-driven personalized health recommendations and suggestions, based on biomarker analysis, the results of a comprehensive diagnosis of the client's health status, on how to promote and maintain a healthy lifestyle and slow aging.

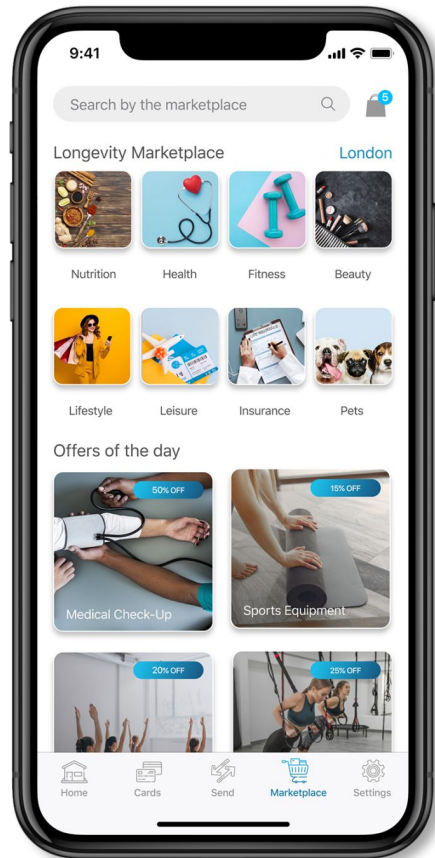
## Longevity Vendors:

- Suppliers of Longevity, health and wellness-focused products and services will be able to obtain access to a much larger, and extremely relevant (i.e., highly focused) client base by joining the platform.
- Capacity to significantly expand their market and target demographic in exchange for giving up a small portion of their profits (access fee for being a vendor on the platform), AKA the “GroupOn” business model.
- Heightened marketing and public visibility, and access to Longevity Bank’s sophisticated Marketing Engine.
- Potential visibility to investors via the Investment Analytics Dashboard.

## Major Corporate Vendors:

- Large corporate vendors, such as major Pension Funds and Insurance Companies interested in Longevity, can benefit from gaining access to a highly targeted and qualified set of individuals looking to maintain very healthy lifestyles, with a large unmet desire for progressive financial institutions willing to financially underwrite their efforts to maximize their Healthy Longevity.





Longevity Marketplace offers the World's Best Products and Services in the Industry, Exclusively Featuring Scientifically and Technically Validated Vendors

## B2C Dashboard Special Features

AI-driven Personalized Products/Services

AI-powered Categorized Products/Services

Integrally Linked with Longevity Bank's Mobile App and Longevity Club Ecosystem

AI-driven Personalized Health Recommendations

Data and Transaction Security Using Blockchain Technology

Longevity Reward System and Internal Cryptocurrency

# The Best Ideas Found around the World Bundled in One App



Marketplace  
&  
Discounts



Longevity Club &  
Longevity  
Marketplace



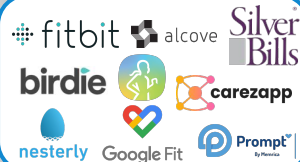
Current  
Accounts  
&  
SME Banking



Longevity Card



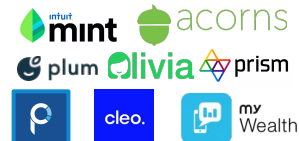
HealthTech  
&  
AgeTech



Longevity Platform  
& Mobile App



AI  
&  
WealthTech



Longevity Wealth  
Planner & Financial  
Advisor



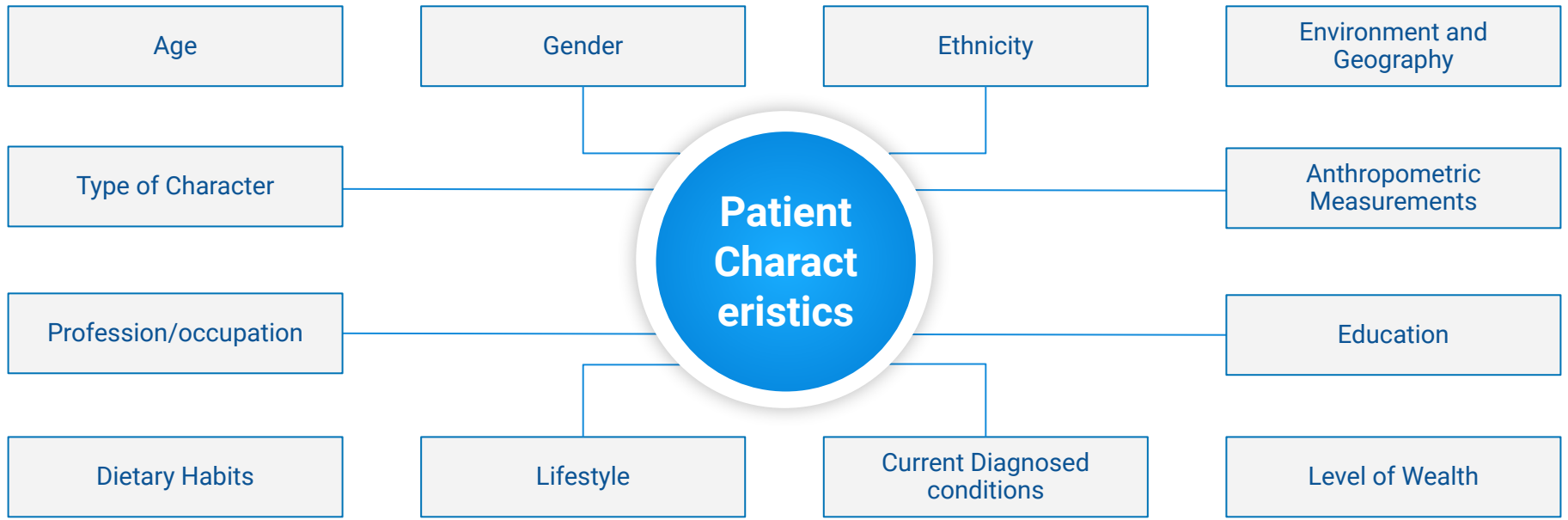
Telemedicine  
&  
InsurTech



Longevity Tracker &  
Healthy Lifestyle  
Coach

# AI-driven Personalized Products/Services

**B2C Dashboard** is a virtual online store where clients can use their **Longevity Banking Card** to purchase products and services across full scope of longevity. Products and services will be provided in form of recommendations, based on the **questionnaire** which contain detailed information about the health, lifestyle and daily habits of patients. MarTech system will allow the Longevity Club members to promote their products and services among both corporate Longevity cardholders, as well as general Longevity card users. MarTech system **enables optimized matching between providers of services and customers**, which makes it absolutely unique longevity-focused marketing platform.



# AI-driven Categorized Products/Services

Products and services on the Longevity Marketplace will be provided in the form of a general list with categories (on the left side of the screen). They will be added to the Marketplace ecosystem, analyzed using our AI technology and categorized using the clustering method.



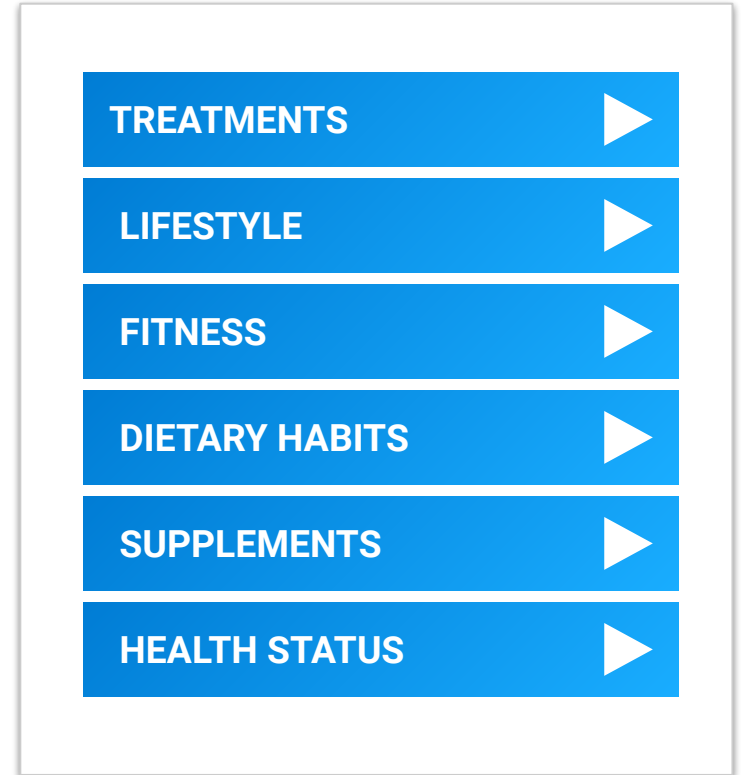
## Simplified Customer Journey Map

Click on the left side menu and choose specific category or use search engine to find a product or service based on different characteristics.

Select a particular product or service and buy it using Longevity Banking Card or using Longevity Membership Card Discounts.

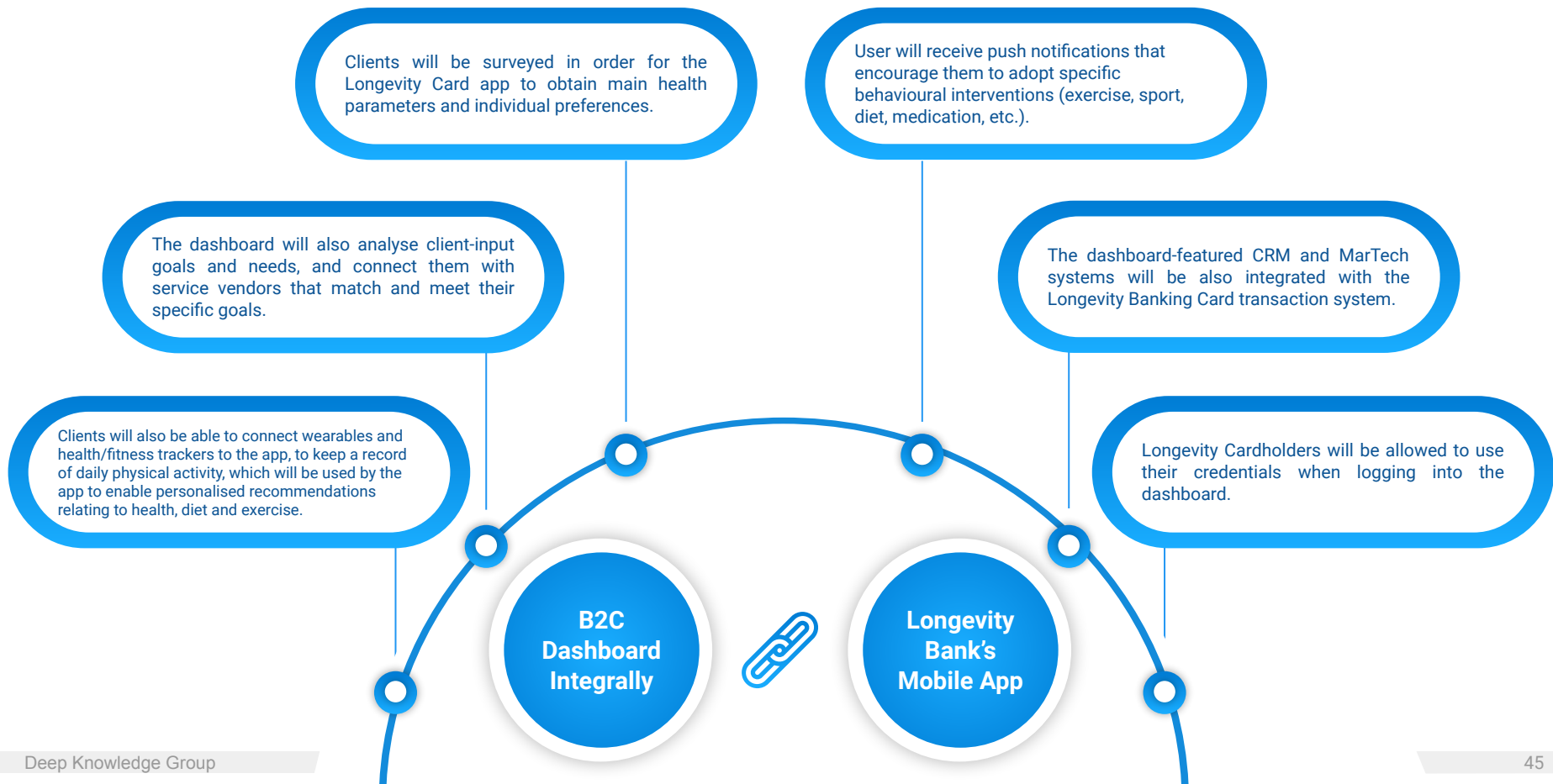
For each purchase, a user receives Longevity reward points. All points can be exchanged on discounts or products. For example, a user buys access to an mHealth App, get 100 points, and spends them to get 15% off on medical checkup.

Get access to the premium services available for the Longevity Membership Card owners.

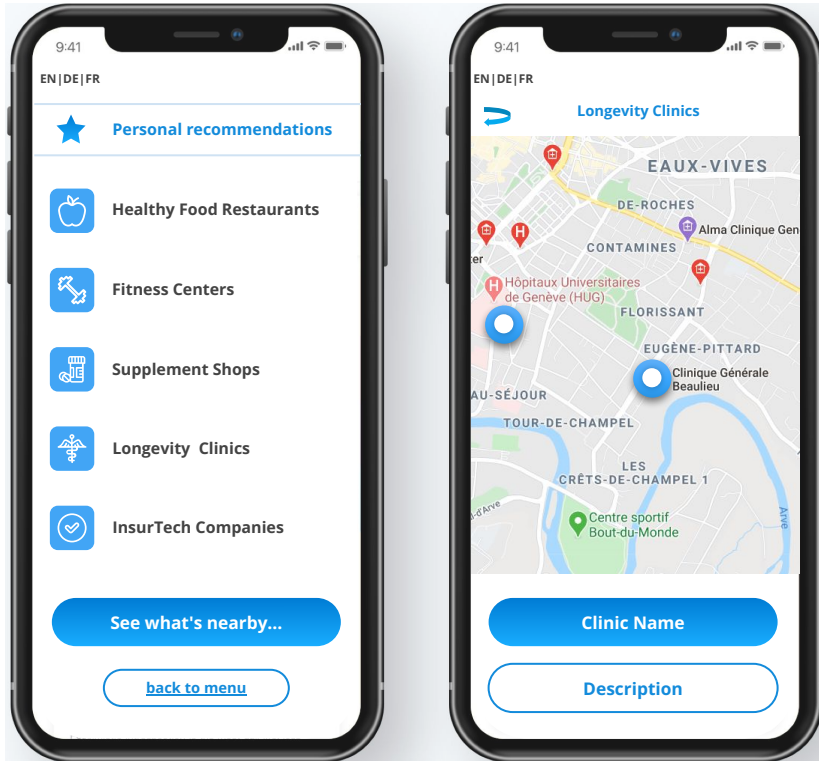


*List with Categories Prototype*

# B2C Dashboard Integrally Linked to Longevity Bank's Mobile App



# AI-Driven Personalized Health Recommendations



*User interface languages: English, German and French*

The dashboard is integrated with Longevity Bank's mobile app, which uses AI assistants to provide daily targeted recommendations to Longevity Cardholders on ways that they can optimize their Healthy Longevity across its full scope (all the way from healthspan to wealthspan).

The Longevity Card Mobile App utilizes **AI-driven smart-matching** in order to suggest relevant products and services from the Longevity Marketplace based on each client's unique profile, including their current: **physical and mental health**, evaluated by in-depth biomarker analysis, **financial status, language and location**.

Using these data points as the basis for connecting them with the most relevant products, services and tools available online and physically (within their area of residence) to optimize and improve their personal Healthy Longevity.

Example recommendations include: where to find healthy food restaurants and grocery stores, progressive gyms and fitness centers, supplement shops, personalized and precision health clinics, insurance companies providing the best modern InsurTech solutions (rewarding clients for maintaining a healthy lifestyle, and covering products and services aimed at maintaining) a healthy lifestyle.

# Customer-oriented Service

Additionally, the **dashboard** (and its linked Longevity Card Mobile App) will collect both:

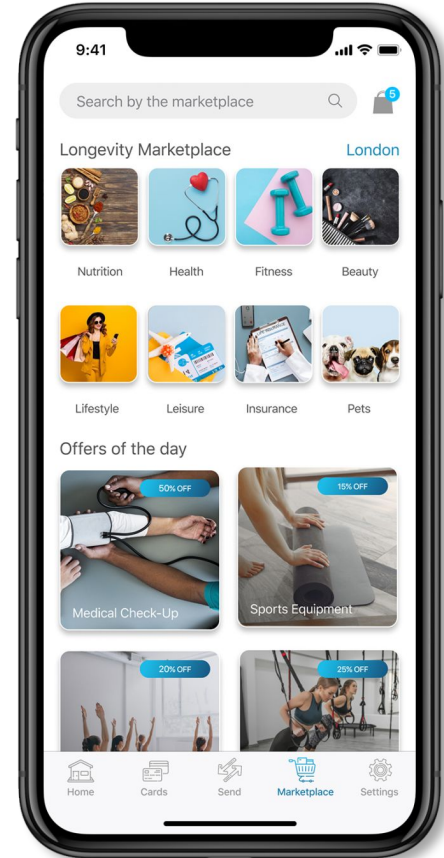


Client-specific satisfaction ratings and aggregated, marketplace user-based wide satisfaction ratings for all products, services and for all vendors.



**Client satisfaction ratings that measure how well they feel their goals are being met** and their specific needs are being satisfied.

These 2 data inputs will then serve as the basis for the Longevity Card mobile app's real-time **recommendations** on new products and services that can help them achieve their goals faster.



# Longevity Reward System

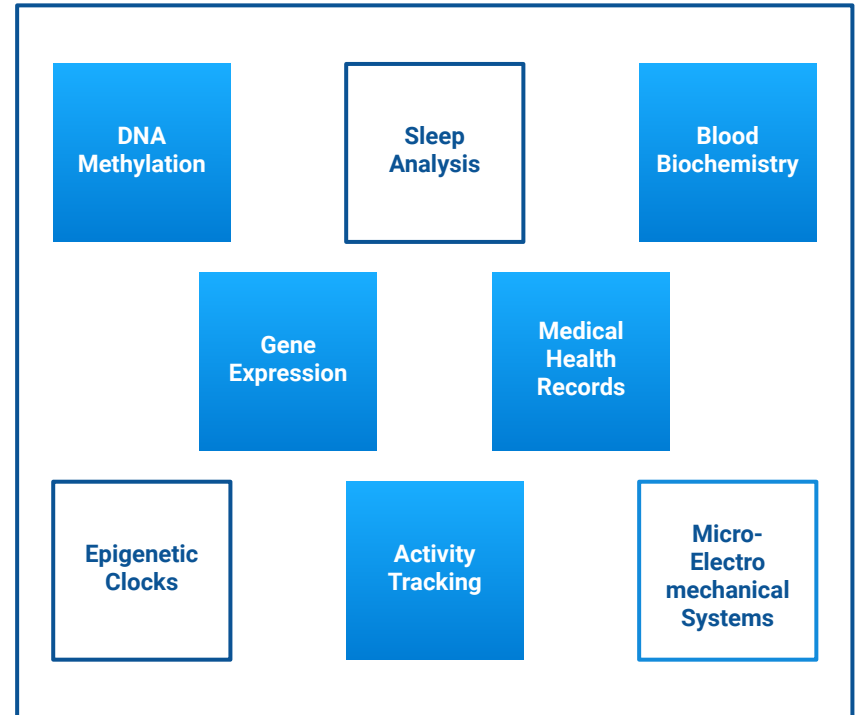
A **key element** that drives the users' interactions with Longevity is the Longevity Score, an overall rating that users are **initially assigned** based on the data they submit and initial health and **fitness assessment**.

The score will be **calculated** using a proprietary algorithm based on biomarkers of aging that employs **machine and deep learning techniques** that focus on the users' **performance, activity,** and behavior patterns.

Additionally, users will be able to unlock **premium services** by improving their longevity score. **The fully automated personal trainer of Longevity** will provide users with advice and guidance on how to **boost their longevity score**.

The **Longevity score** acts as an aging clock that is capable of accurately calculating the "**biological age**" of a user; it is quite possible, and often likely, for a person's **biological and chronological age** to differ significantly.

## Example of Biomarkers Used to Identify a Longevity Score:





# Longevity Reward Points

## REFER

Invite your Friends, Family Members and Co-Workers to Join Longevity Card and Get Free Longevity Points.

## USE

Use your Longevity Banking Card and Integrated Health App Actively and Earn More Longevity Points and Perks.

## REPRESENT

Build Longevity Ecosystem with Us: Become Our Ambassador, Grow the Community and Promote Healthy Lifestyle.

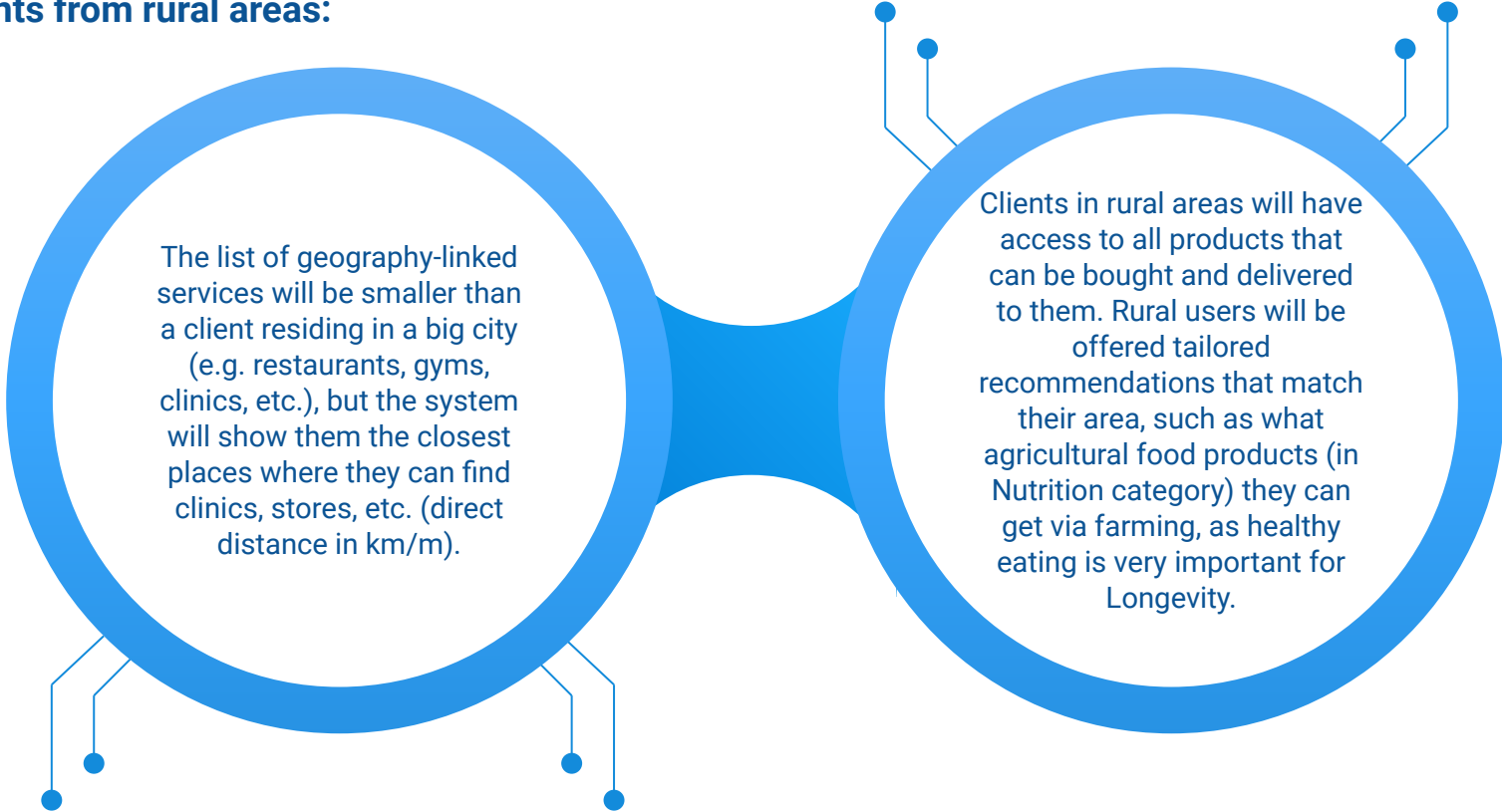
## PROVIDE

Provide Us with your Daily Fitness Activity via Wearables and Get Special Offers and Additional Deals and Discounts.

No Matter What is Your Age, Occupation or Location.  
On Longevity Marketplace, You Will Earn Rewards for Being Healthy.



## For clients from rural areas:



The list of geography-linked services will be smaller than a client residing in a big city (e.g. restaurants, gyms, clinics, etc.), but the system will show them the closest places where they can find clinics, stores, etc. (direct distance in km/m).

Clients in rural areas will have access to all products that can be bought and delivered to them. Rural users will be offered tailored recommendations that match their area, such as what agricultural food products (in Nutrition category) they can get via farming, as healthy eating is very important for Longevity.

# Longevity B2C Cards (Banking + Membership)

Our Members will have the unique opportunity to choose between a Longevity Club Membership Card, Longevity Banking Card or All-in-One Card with the full suite of features, products and exclusive discounts and premium access to full package of



LONGEVITY BANKING CARD



LONGEVITY CLUB MEMBERSHIP CARD

# Longevity Club Membership Card Features



Access to Proprietary, Consumer-Focused Longevity Reports covering different aspects of the industry



Longevity Club Membership Card offers access to a List of Longevity Clinics, Services and Doctors in Your Regions



Ability to contact experts specializing in different aspects of the Longevity Industry



Intelligent recommendations with gamification elements for workouts and meditations based on clients' preferences



Knowledge and Guidance of Longevity Diagnostics allowing to effectively slow down the aging process



A unique PC Quest Game provide an excitement VR-journey through your body to promote and maintain a healthy lifestyle

# Account Features



UK IBAN



MULTI CURRENCY  
ACCOUNTS



DEBIT CARD



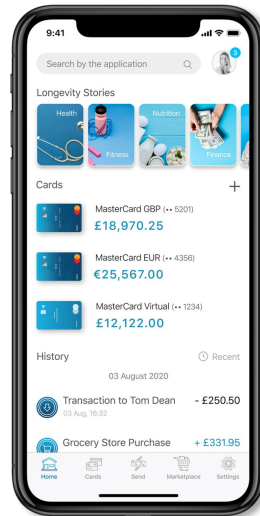
MONEY  
TRANSFERS



CASH LOAD



LONGEVITY  
MARKETPLACE



PERKS



FAST  
SIGN UP



REAL-TIME  
NOTIFICATIONS



TRAVEL  
INSURANCE



BUSINESS  
ACCOUNTS



24/7 SUPPORT

# In-App Banking Features

- Card freeze (on/off)
- Opposition of the card (on/off)
- Withdrawal (on/off)
- Online payment (on/off)
- Contactless payment (on/off)
- Card limits (expenses / withdrawals)
- Payment by geographical area (euro zone / europe)
- Payment by currency (euro / gbp)
- Payment by time bands (9h > 21h)
- Payment per day (working days / exclusion sunday)
- Shared payment (couple, roommate, parent-child)
- Payment by categories of merchants (restaurants, hotels)
- Payment by age group
- Card activation / order
- Payment by virtual card
- Pin code customization



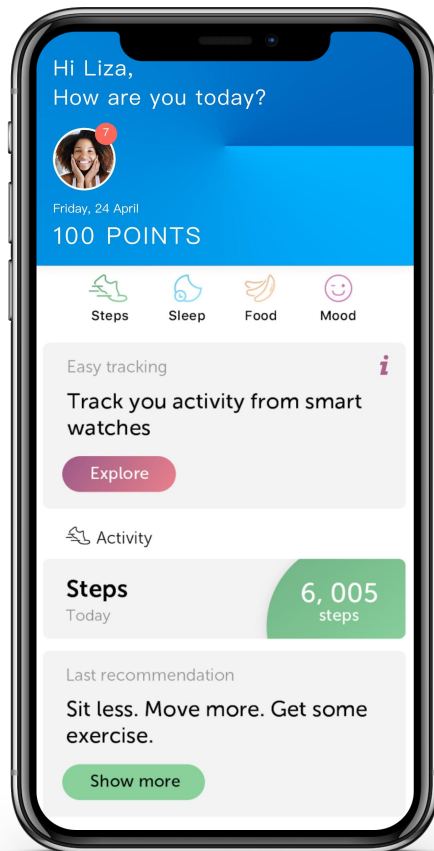
# Healthtech Integration

HEALTHSPAN  
AND FITNESS  
GAMIFICATION

LONGEVITY  
POINTS

DAILY ACTIVITY  
ANALYSIS

SLEEP  
ANALYSIS



AI POWERED  
PERSONALISED  
RECOMMENDATIONS

WEARABLES  
COMPATIBLE

LONGEVITY  
STORIES

NUTRIENT  
TRACKING

# AgeTech Solution

PREVENTION OF FINANCIAL EXPLOITATION

ADVANCED ANTI-FRAUD SYSTEMS

VOICE CONTROL AND ASSISTANCE

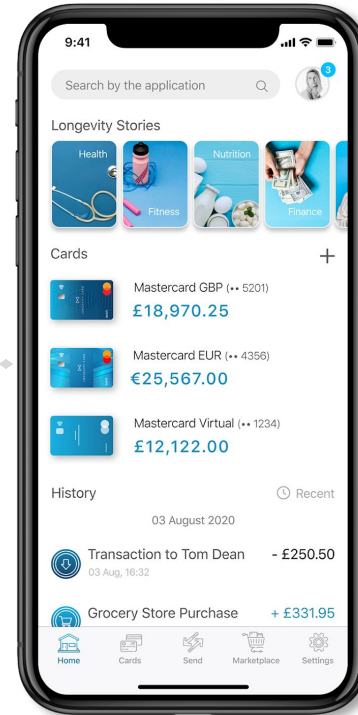
TAILORED USER INTERFACE

VIDEO CHAT CUSTOMER SUPPORT

JOINT FAMILY ACCOUNTS

MARKETPLACE FOR SENIOR GENERATION

TAILORED USER GUIDE AND TUTORIALS

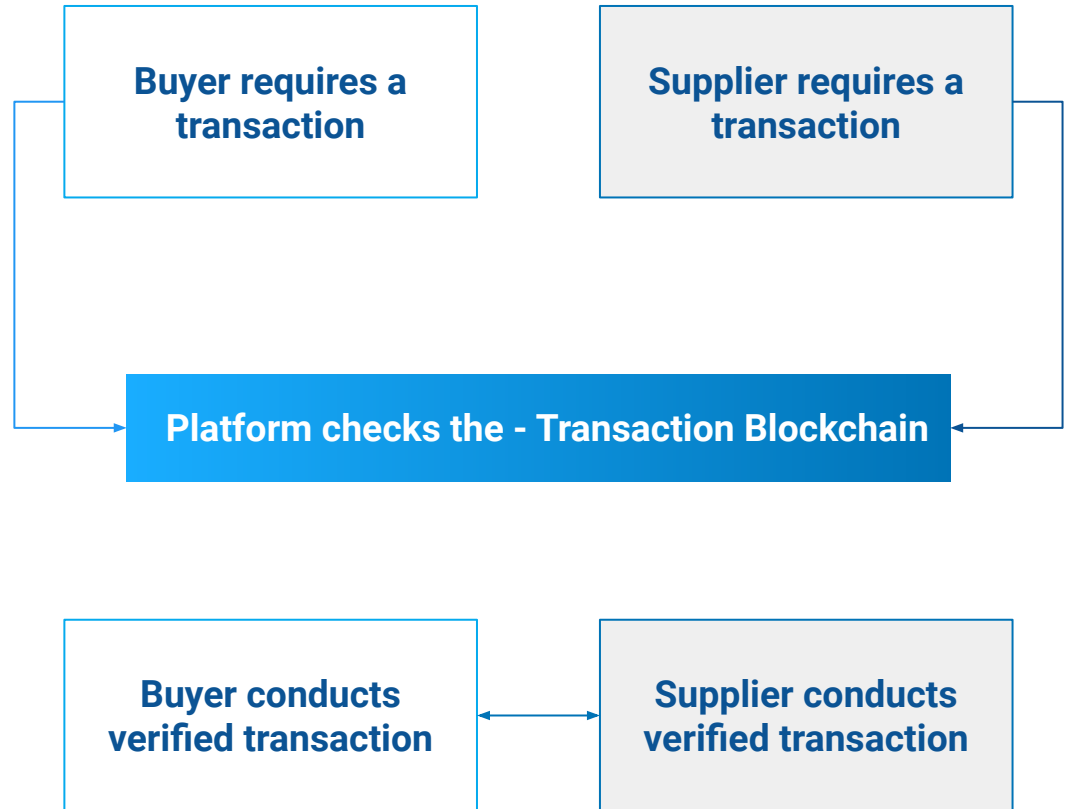




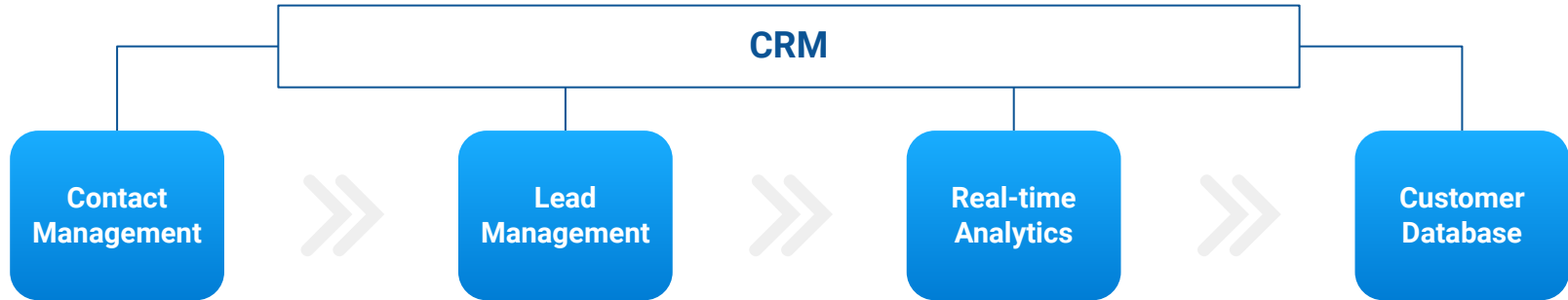
# Internal Cryptocurrency

B2C Dashboard users will allow its users to conduct secure transactions within the platform. This will enable optimized and less risky cash flow. Normally, buyers and suppliers should support the secureness of the transactions by themselves, which leads to additional expenses on both sides. As a result, such operations are at most as secure, as general transactions. At the same time, neither buyers nor suppliers are fully aware of the history of their transaction, which lowers both the secureness level, and the effectiveness of the transactions.

In order to overcome such obstacles, Deep Knowledge Group will provide its dashboard users with internal cryptocurrency, which will be designed as a private- or consortium-based blockchain technology. Such an approach will enable more secure transactions, enabling enhanced tracking, as well as optimizing the cash flow between parties since neither the buyers nor the suppliers won't need to maintain the secureness of the financial activities between each other.



# CRM System



Track the latest information about customers – from contact details to service conversations – is easily available to access and update.

The system enables stakeholders to see the pipeline activities, tasks and goals during the whole lead generation cycle.

Information and statistics is aggregated and presented in intuitive, meaningful dashboard displays that can be customized based on each individual's priorities.

The system enables stakeholders to keep all customers database in one place to track pipeline activities, tasks and targets, all the way from prospect through to conversion.

Big Data Analytic System goes further integrating full cycle CRM workflow to provide a complete, cloud-based ecosystem for customer data. CRM strategy is to build stronger relationships between organizations and their clients boosting their CLV (Customer Lifetime Value). An organization will store information that is related to their clients, and employees will analyze it to use it in forecasting and making reports. Some strategies of CRM software are planning for targeted marketing campaigns towards specific clients. The strategies used will be relying on the information that is coming from the CRM system. CRM software solution is commonly used by all kind of corporations. Important features of a CRM system include contact and lead management and dashboard-based analytics. And CRM systems are flexible and scalable. Businesses can leverage AI, integrate social media and go mobile – anywhere, and at any time.

# AI-driven Supply Chain Optimization

The optimisation of the supply chain will be provided based on the following resources:

- Information about the Longevity Reward Points transaction
- Location-related information
- Global comparative analytics

## Longevity Reward Points

Longevity Reward Points will be used as a transaction indicator of the dynamics of the product or service, allowing the optimization of the supply chain for the B2C Dashboard Longevity Club members.

## Location-related Information

Based on the information about the geographical location of the user, B2C dashboard will allow customers to predict the change in products supply through the analysis of the club members relocation.

## Comparative Analytics

Taking into account the existing market information of the longevity and other industries, B2C Dashboard customers will have an opportunity to assess, develop and optimise their supply chains.

Taking into account the amount of data that will be generated via the aforementioned sources, the most effective and reasonable solution that will allow to analyse such a huge amount of valuable information is AI. B2C Dashboard will be furnished with the cutting-edge AI-based clustering and predictive algorithms that allow to organize and analyze gathered information, as well as derive additional insights about the inner dynamics of the markets and their customers.

## AI Powered Interface Customization by Age, Geography, Gender and Occupation

Our products will have the unique feature of customization for large groups of different types of users. To achieve full differentiation and personalization, we will start with providing customization for the following user profiles.



### CUSTOMIZATION TYPES

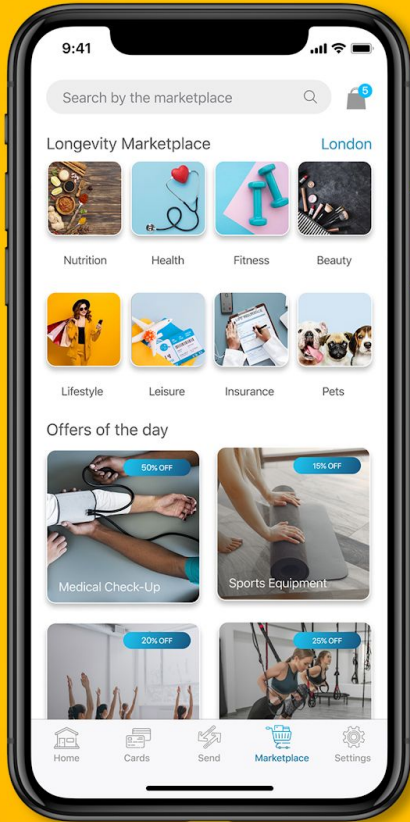
#### BY AGE RANGE

- 20-40
- 40-60
- 60-80
- 80-100
- 100-120

#### BY SUBSCRIPTION

- STANDARD
- PREMIUM
- BUSINESS

# B2C Dashboard: Longevity Marketplace



**One-Stop-Shop For A Whole Range  
of Available Longevity Products**



# B2B Dashboard for Corporate Users

## Corporate Longevity Cardholders and Clients:

- Access to a highly diverse marketplace of potential produce and service providers, enabling supply chain optimization
- Discounts on B2B marketplace purchases obtainable through Longevity Reward Points that are generated every time they use their Longevity Card
- Targeted real-time recommendations on local and global products and service providers.
- Free-of-charge analytics on how supply chains can be optimized

## Longevity Vendors:

- Suppliers of Longevity, health and wellness-focused products and services will be able to obtain access to a much larger, and extremely relevant (i.e., highly focused) client base by joining the platform,
- Capacity to significantly expand their market and target demographic beyond retail users and towards corporate and institutional buyers
- Heightened marketing and public visibility, and
- Potential visibility to investors via the Investment Analytics Dashboard.

# Main Concepts/Interface

B2B is the Second-level Marketplace Dashboard available only for Longevity Bank Institutional and Corporate Clients, and B2C marketplace vendors.

1. Corporate clients and vendors will benefit by using the Longevity marketplace to distribute their services, and to obtain services from other relevant clients and vendors at discounted, premium prices.
2. What such companies will sacrifice in terms of % of profits from marketplace sales going to Longevity Bank and exclusive client discounts, they will make up for by gaining an expanded user base for their products and services.

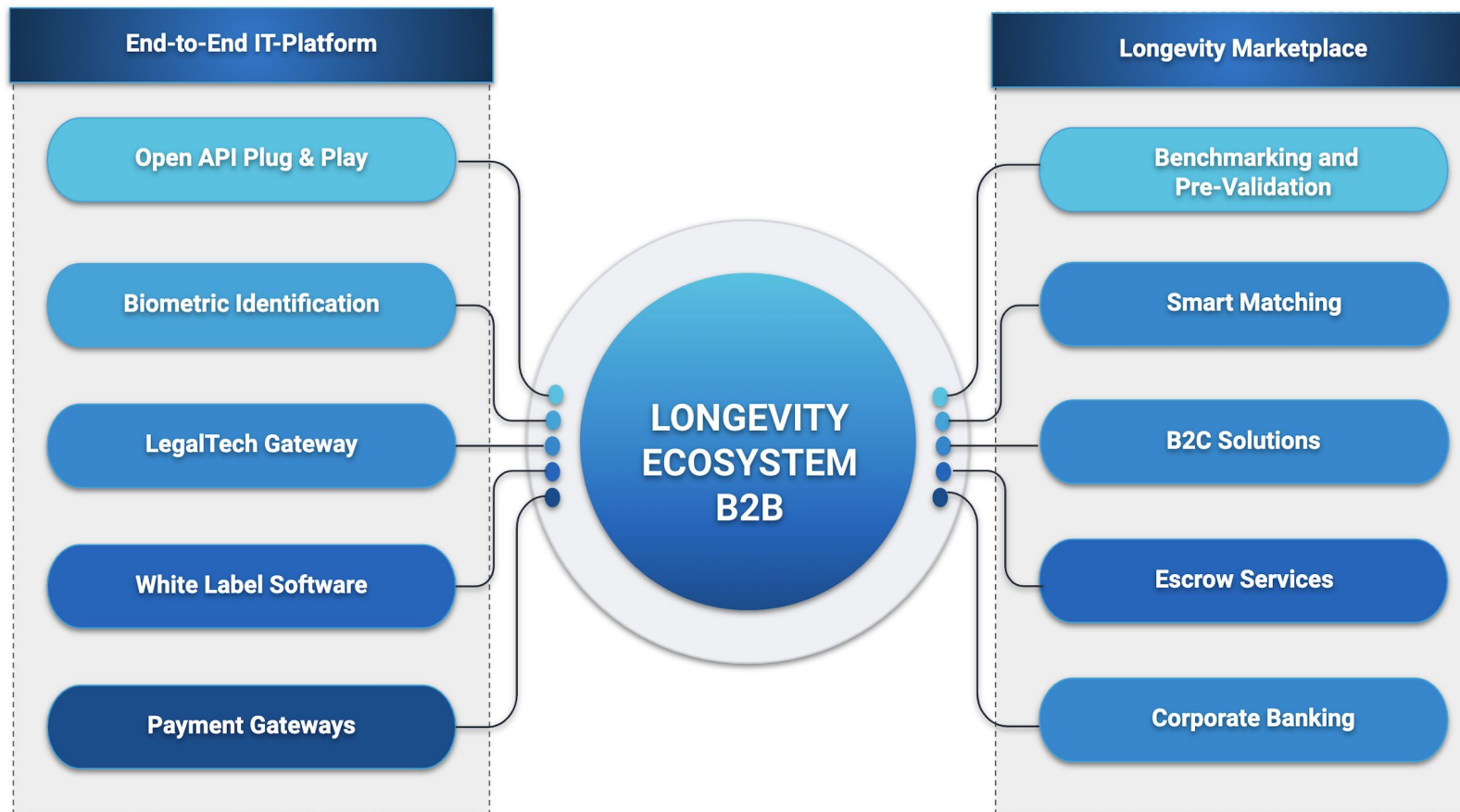
The B2B dashboard will incorporate smart matching by geography and product category, in order to connect relevant clients with relevant vendors. For example, it makes sense to match a local Geneva-based fitness club only to Geneva-based citizens or Longevity Bank clients that are currently visiting the region.

On the other hand, a company also based in Geneva that can ship their product anywhere, or offer their service online, should be matched with all B2B dashboard users that match their product/service category, regardless of their exact geography. Thus, smart-matching should occur by grouping different vendors and clients based on geography, geographic scope of their product and service, and their specific product/service needs.

**At first this Dashboard should be developed on Wix, and then software developers working within Longevity Bank itself will need to transform it to something built on a more professional platform and software language at a later stage.**

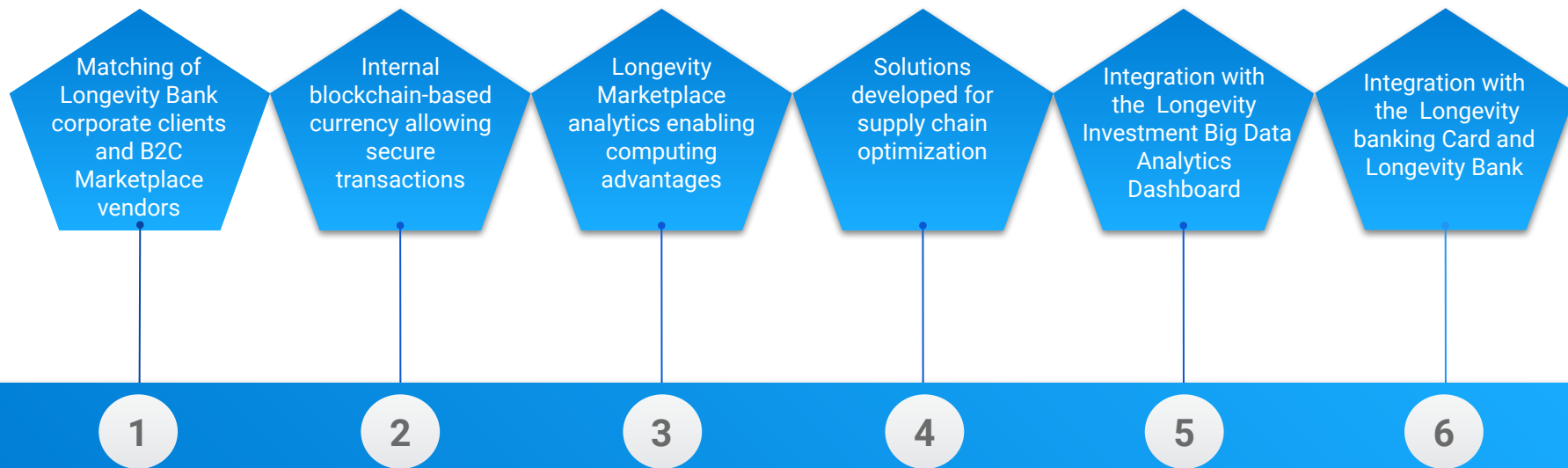


# Longevity Bank B2B Architecture



# Small Medium Enterprise Analytical Dashboard

## The Longevity B2B SME Analytical Dashboard Features



The B2B Analytical Dashboard will provide its customers with an ecosystem for promotion and cooperation. The platform will enable cooperation, promotion and purchasing for all types of Longevity-related companies, allowing expenditures optimization, as well as secureness enhancement. The Longevity B2B SME Analytical Dashboard will become a part of existing Longevity Dashboards ecosystem and operate as an extending market solution for companies looking for optimization of their operational processes.

# B2B Marketplace

Our B2B Dashboard will provide a marketplace platform for companies participating in the Longevity Industry. The main goal of this platform is to create feasible ecosystemic solution for both vendors (buyers) and suppliers. The B2B marketplace will allow its customers to promote their services via advanced MarTech system, as well as buy and sell their products. Additionally, the platform supports internal blockchain-based currency which will provide adequate solution for transaction security enhancement.

## B2B Marketplace Platform Features

Registration and onboarding of SMEs (corporate and business clients)

Convenient interface for SME's products and services placement and management

Internal communication via chat

MarTech system

Real-time analytics on SME's performance

Data Security



*An analogue technical solution, Longevity Investment Big Data Analytics Dashboard, can be seen above*

# Why Longevity Marketplace for B2B?

## Why HealthTech SMEs Desire Specialized FinTech B2B Platform?

Today even the most progressive financial institutions are lagging behind the innovation progress. There has never been a challenger or a traditional bank that focused on developing financial services for progressive emerging HealthTech, mHealth, Wellness companies, delivering for them adjusted and tailored B2B solutions.

That is the reason why Longevity Bank implements the following advanced technological solutions to meet the financial needs of these companies:

### Artificial Intelligence

AI will enable personalized financial products that provide a comprehensive view of investments, taxes, insurance, and regulation without unneeded complexity.

### Blockchain

Blockchain back-end enables opportunity to enable and integrate multiple existing advanced solutions, focused on creation of secured and transparent financial environment.

### LegalTech

Providing the ability to create and sign contracts online in a few minutes to accelerate the business growth and cut legal costs for SMEs.

### WealthTech

Robo advisors, digital brokers and other WealthTech products designed for people expecting to live 100 years and beyond.

### MarTech

Advanced technological solutions for marketing and advertising adapted for the most complex longevity industry.

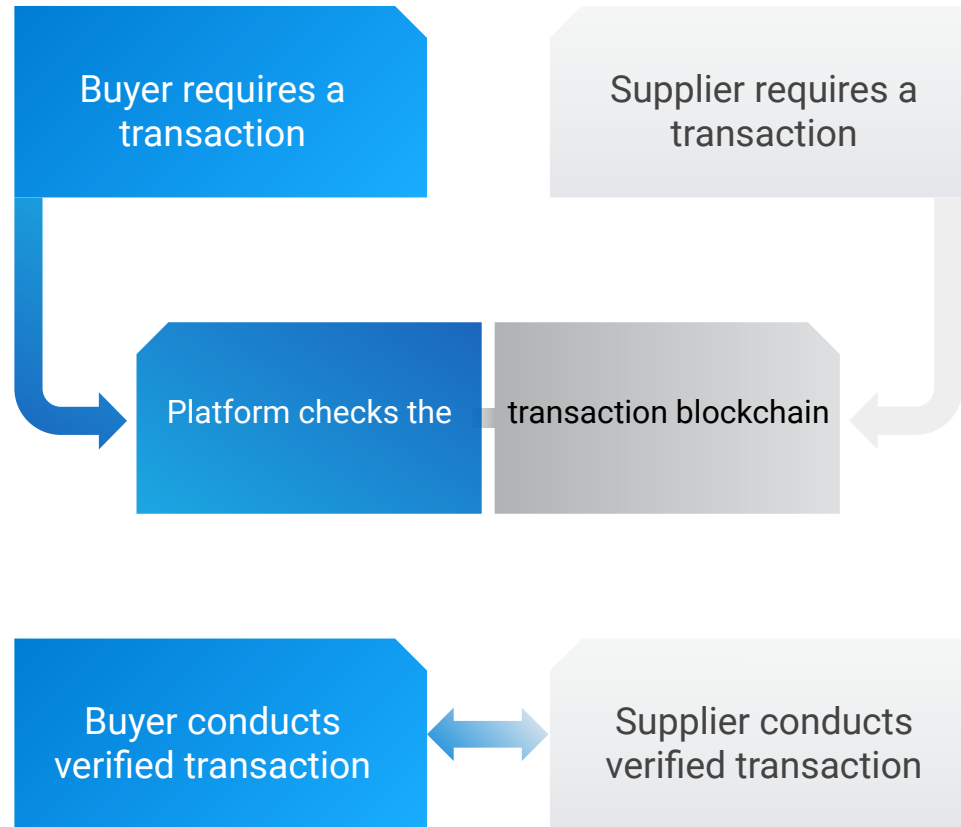
### Escrow Services

Using a licensed escrow service to buy and sell merchandise, services and more is the most convenient way to complete transactions online.

# Internal Cryptocurrency

B2B Dashboard users will allow its users to conduct secure transactions within the platform. This will enable optimized and less risky cash flow. Normally, buyers and suppliers should support the secureness of the transactions by themselves, which leads to additional expenses on both sides. As a result, such operations are at most as secure, as general transactions. At the same time, neither buyers nor suppliers are fully aware of the history of their transaction, which lowers both the secureness level, as well as the effectiveness of the transactions.

In order to overcome such obstacles, Deep Knowledge Group will provide its Dashboard users with internal cryptocurrency, which will be designed as a private- or consortium-based blockchain technology. Such an approach will enable more secure transactions, enabling enhanced tracking, as well as optimizing the cash flow between parties since neither the buyers nor the suppliers won't need to maintain the secureness of the financial activities between each other.

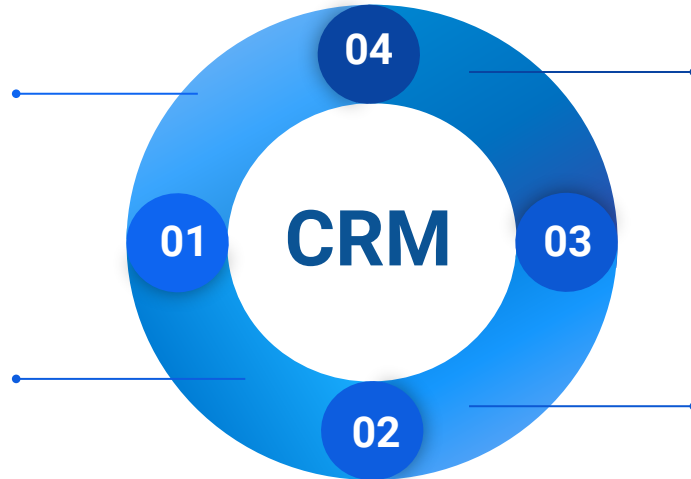


## Contact management

Track the latest information about customers – from contact details to service conversations – is easily available to access and update.

## Lead management

The system enables stakeholders to see the pipeline activities, tasks and goals during the whole lead generation cycle.



## Customer Database

The system enables stakeholders to keep all customers database in one place to track pipeline activities, tasks and targets, all the way from prospect through to conversion.

## Real-time Analytics

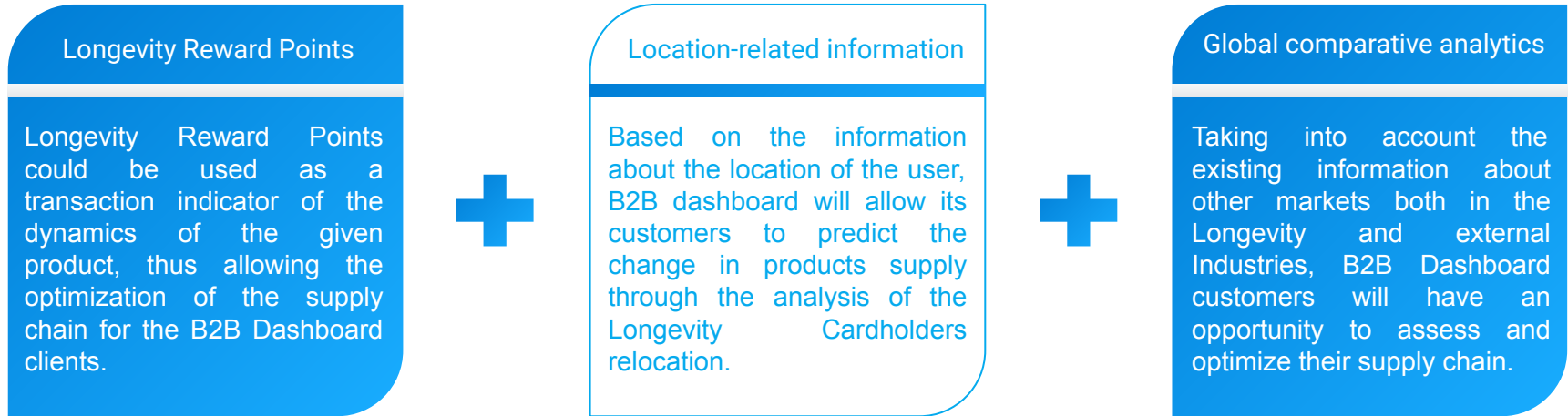
Information and statistics is aggregated and presented in intuitive, meaningful dashboard displays that can be customised based on each individual's priorities.

Big Data Analytic System goes further integrating full cycle CRM workflow to provide a complete, cloud-based ecosystem for customer data. CRM strategy is to build stronger relationships between organizations and their clients boosting their CLV (Customer Lifetime Value). An organization will store information that is related to their clients, and employees will analyze it to use it in forecasting and making reports. Some of the strategies of CRM software are planning for targeted marketing campaigns towards specific clients. The strategies used will be relying on the information that is coming from the CRM system. CRM software solution is commonly used by all kind of corporations. Important features of a CRM system include contact and lead management and dashboard-based analytics. And CRM systems are flexible and scalable. Businesses can leverage AI, integrate social media and go mobile – anywhere, and at any time.

# AI-driven Optimization of Supply Chain

The optimization of the supply chain will be provided based on the following resources:

- Information about the Longevity Reward Points transaction
- Location-related information
- Global comparative analytics

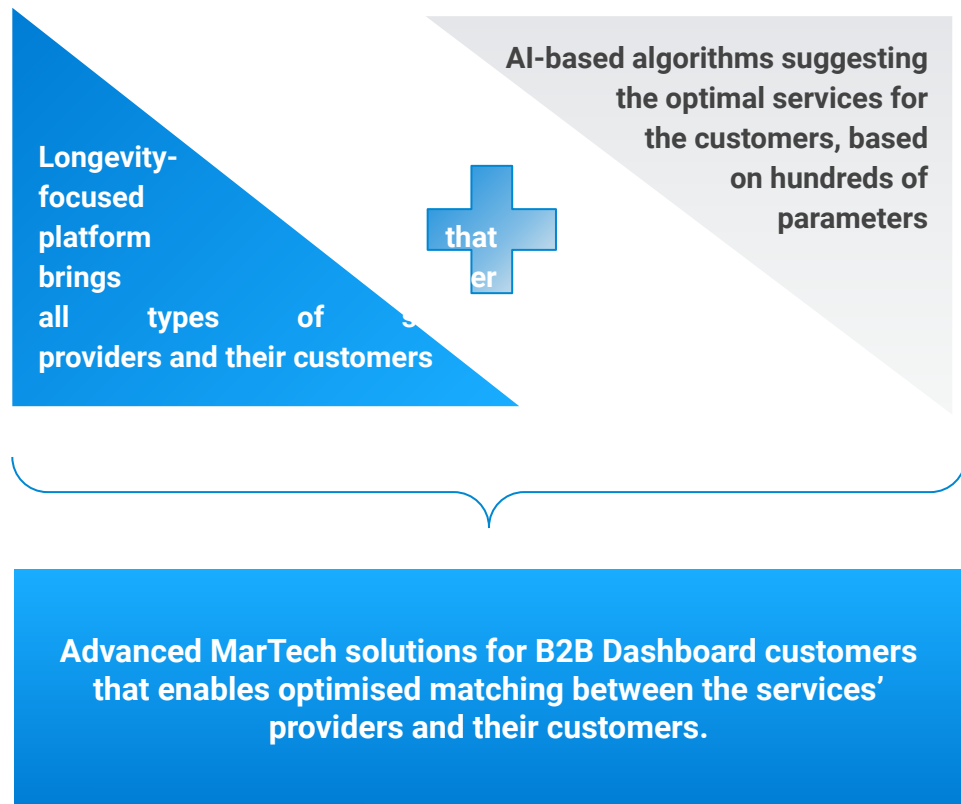


Taking into account the amount of data that will be generated via the aforementioned sources, the only reasonable solution that will allow to analyse such information is Artificial Intelligence. B2B Dashboard will be furnished with the cutting-edge AI-based clustering and predictive algorithms that allow to structure and analyse gathered information, as well as derive additional insights about the inner dynamics of the markets and their customers.

# MarTech System

The significant part of the B2B Dashboard is its marketplace system. This solution will allow its customers to promote their product and services among both Corporate Longevity Cardholders, as well as general Longevity Card users. Such structure implies the existence of the unique, Longevity-focused marketing area. This will provide the solution for the existing matching problem, when advertising misses its target audience due to the incoherence between the products or services being advertised and actual audience.

Additionally, MarTech system will enable the analysis of all important statistics and thus allow to assess the effectiveness of the given marketing campaign performed by the Dashboard customer.





# B2B Dashboard Integration with Longevity Banking Card

An important solution provided by the DKG is the integration of the B2B2 Dashboard with the Longevity Banking Card, this will enable the following features of the Dashboard:

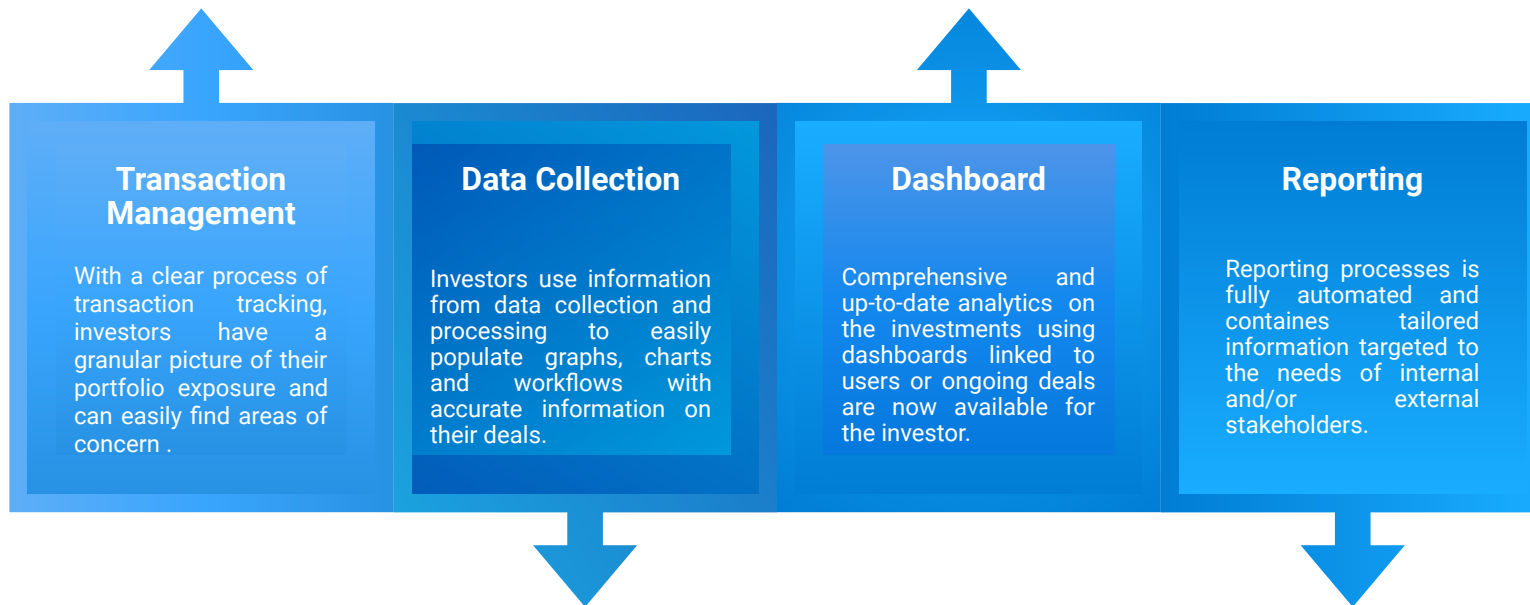
- User will receive push notifications that provides main information about today's market structure
- The dashboard will also analyze client-input goals and needs, and connect them with service vendors that match and meet their specific needs
- In case if Longevity Banking card is used for operations on platform, the customers will also receive Longevity Reward Points
- The Dashboard-featured CRM and MarTech systems will be also integrated with the Longevity Banking Card transaction system
- Additionally, Corporate Longevity Cardholders will be allowed to use their credentials when logging into the Dashboard.



*An analogue technical solution, Longevity Investment Big Data Analytics Dashboard, can be seen above*

# B2B Dashboard Integration with Longevity Investment Bank Platform

**Longevity Investment Bank platform** resolves the principle problems and obstacles that arise from target identification and market analysis creating a convenient and effective way for investors to allocate capital quickly and safely.



Integration with Longevity Investment Bank platform with LegalTech & InvestTech focus provides wide exposure to analytical tools in the dashboards and suggest the creation of the built-in tools on the IBP. It provides clear vision of an investment's lifecycle – from selection to completion through the hold period and to exit. With installed Longevity Investment Bank platform investors can analyse data specific areas for each deal, enabling them to make informed decisions with respect to the portfolio performance.

# Main Types of Users

The main types of users for the B2B dashboard will be Longevity companies looking to expand their institutional user/client base, find relevant suppliers for their own product and service lines, and optimize their supply chains.

Companies (mainly larger companies and corporations) active in the following sectors will be the ideal candidates for using the platform:

**Precision Medicine**

**Diagnostics & Prognostics**

**mHealth**

**AgeTech**

**WealthTech**

**InsurTech**

**Mental Wellness**

**Physical Fitness**

**Personalized Medicine Clinics**

**Supplements**

**Advanced Cosmetics**

**Financial NeuroTech Corporations**

# Longevity Card



[longevity.cards](https://longevity.cards)



**Longevity Card** is the new way to **manage** your **money** and **lead** a healthy **lifestyle** in one app.

We are making mobile banking experience **easier** and **safer** for people of **all ages** by developing **new financial products in combination with cutting edge HealthTech and AgeTech** designed for users who are planning to **live extra long lives** and want to remain high functioning and **financially stable** throughout.

**Longevity Card** is the part of the long-term **Longevity Bank Project**, the first bank to on-board AgeTech, HealthTech, Data Science and AI, aiming to transform the traditional banking into the age and longevity focused.

## LONGEVITY ECOSYSTEM



- Single Longevity ID for all products;
- Longevity Banking Card;
- Longevity Club Card;
- Longevity Mobile mHealth App;
- Longevity Marketplace;
- Longevity Rewards;
- Longevity Club Events;
- Proprietary Analytics and News;
- Longevity Business Account;
- Wallet featuring ecosystem products;

## ROBO ADVISORS AND ASSISTANTS



- Voice Assistant;
- Chatbot;
- Longevity Stories;
- Financial Planner;
- Personalized Offers with up to 30% cash-back / reward points;
- Big Data and Machine Learning;
- Biometrics and other technologies;

## OFFERS FROM PARTNERS IN VARIETY OF INDUSTRIES

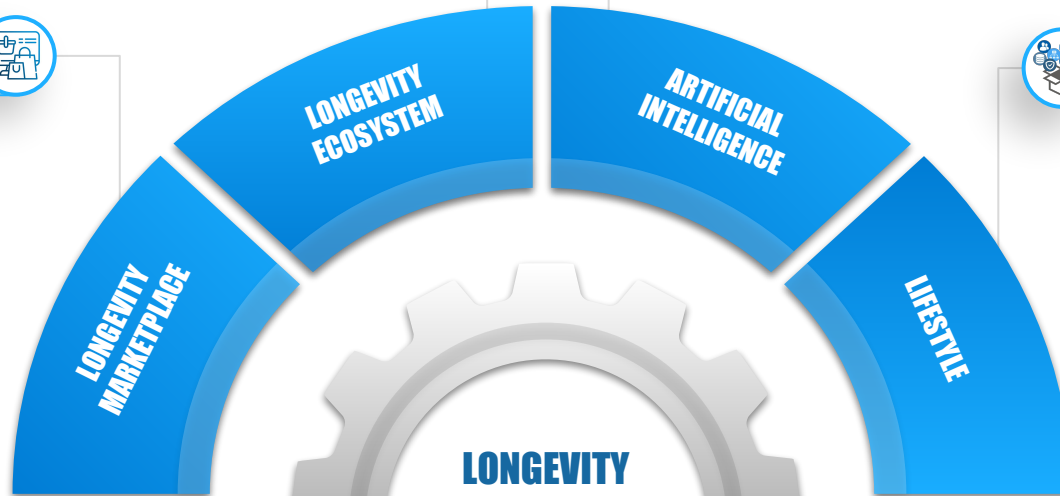


- Products and Online Retail;
- Health and Beauty;
- Fitness and Wellness;
- Telemedicine;
- Nutrition and Vitamins;
- Health Diagnostic Services;
- Prognostic Services;
- Yoga;
- Local GPs;
- Education;

## INTEGRATION OF OWN SERVICES



- mHealth;
- Insurance;
- Personal Tips;
- Accounting;
- Travel;
- Shopping;
- Healthy Lifestyle Coach;



# CARD

LONGEVITY  
REWARDS

LONGEVITY CARD FOR  
ELDERLY

DAILY  
BANKING

PAYMENTS AND  
TRANSFERS

## LONGEVITY CARD LOYALTY PROGRAM



- Management of longevity points, bonuses and discounts;
- Referral Program;
- Rewards for Healthdata;
- Longevity Ambassador Program;
- Additional discounts for gaining advanced loyalty levels;

## SPECIALIZED FINANCIAL PRODUCT FOR SENIORS



- Banking Services for people 70+ years old;
- Transaction limits and spending control;
- Prevention of financial exploitation;
- Children and grandchildren can be assigned tasks and earn rewards for their grandparents for their completion;
- Lifestyle services for Elderly;
- Longevity Elderly App;
- Implementation of AgeTech;

## PAY, SEND AND RECEIVE MONEY FAST



- Domestic and International Transfers;
- Direct Debits;
- SEPA Payments;
- Faster Payments;
- SWIFT Payments;

## MANAGING YOUR FINANCE HAS NEVER BEEN SO EASY



- All Longevity Card financial products;
- Debit and Prepaid Cards;
- ATM Withdrawals;
- Cash loading in the partner network;
- Post offices cash loading;
- Itemised receipts;
- Filter-enabled expense statistics;
- Statement and other document requests;
- 24/7 live customer support;
- Apple Pay, Samsung Pay, Google Pay;



# Longevity Card in Press



[READ THE ARTICLE](#)

"Pioneers of the new world: Your winners. After a wave of nominations from our readers, we have selected over 80 European founders and companies shaping the post-pandemic world."

## FINTECH FUTURES

[READ THE ARTICLE](#)

"Longevity Card users can also earn 'Longevity Points' by tracking their daily activity and nutrition through the app, which the fintech will do through an artificial intelligence (AI) healthtech integration. They can then spend these on products within the marketplace ecosystem."



[READ THE ARTICLE](#)

"Currently Longevity Card is in the process of creating a focus group of 70+ aged people, which will be responsible for making the seamless user journey for the Seniors."



[READ THE ARTICLE](#)

"Longevity Card aims to make users' mobile banking experience more convenient and intuitive for all ages. It will offer Healthtech and Agetech services that include financial products designed specifically for people who may live live extra long lives and would like to remain high functioning and financially independent."



[READ THE ARTICLE](#)

"Longevity Card is part of a project that will transform traditional banking into the health- and longevity- focused generation of financial services."

## VERDICT

[READ THE ARTICLE](#)

"There has never been more emphasis on physical fitness: every day there seems to be a new workout or meal plan designed to get us into shape. But what if there were also a financial incentive? Meet Longevity Card, which combines maintaining a healthy lifestyle with money management."

## Forbes

EDITORS' PICK | 6,787 views | Jan 27, 2020, 05:00am

### The Next Generation Of Banking Consumers Are Baby Boomers (Not Gen Z)



**Ron Shevlin** Senior Contributor @ Fintech  
*Observations from the Fintech Shark Tank*

READ THE ARTICLE



One UK-based neobank has already launched to address these new banking needs: Longevity Bank [...]will make online and mobile banking experience easy and safe for the senior generation, raising trust to banking technology among 60+ aged people."

## SWI swissinfo.ch

READ THE ARTICLE

SWI swissinfo.ch

Swiss perspectives in 10 languages

Banking & Fintech

### Banking on a long life: longevity as a financial service



▲ Walking the walk - many aspire to a long life but not all people tailor their lifestyle to this pursuit. Keystone / Christoph Soeder

"Longevity may seem a curious subject in the middle of a pandemic that has a higher mortality rate among the elderly than other age groups. But maybe this makes longevity a more compelling subject right now. The proposed Longevity Bank, which is aiming for a Swiss launch early next year.."

## PAPERJAM

Business zu Lëtzebuerg

READ THE ARTICLE

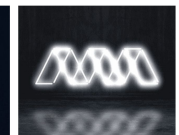
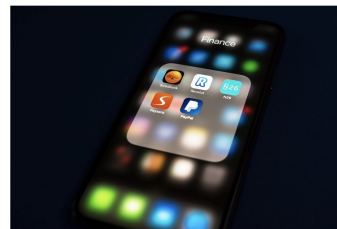
FINTECH

### Le big bang des banques, néobanques et néonéobanques



Écrit par **Thierry Lebro**  
Publié Le 31.01.2020 - Édité Le 31.01.2020

Partager



TOP  
LUS | RECOMMANDÉS

- 1 **RECOMMANDÉ**  
Le rapport Waringo pointe le rôle de la Grande-Duchesse
- 2 **RECOMMANDÉ**  
Malaise évident à la Cour grand-ducale

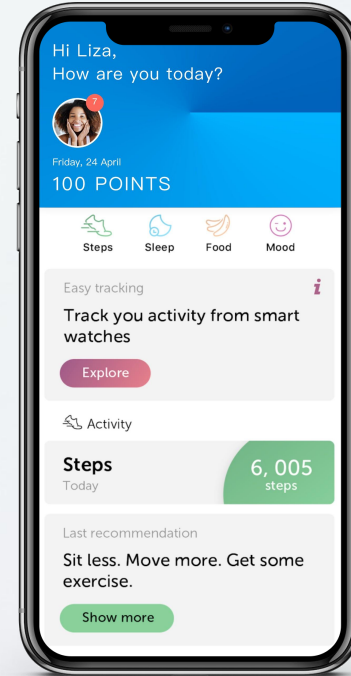
Les néobanques veulent doubler leur clientèle cette année, face à des banques traditionnelles qui se redévoient de plus en plus vite, et face à des néonéobanques qui poussent avec de nouvelles idées... (Photo: Shutterstock)

2020 sera l'année des néobanques, ont assuré les experts au Paris

Comme cet étonnant projet britannique: la Longevity Bank se lancera cette année, à Londres et en Suisse, pour viser spécifiquement une clientèle de plus de 60 ans, qui a des besoins spécifiques, liés par exemple à des questions de santé, mais aussi d'UX.

"Like this astonishing British project: the Longevity Bank will launch this year, in London and Switzerland, to specifically targeting 60+ audience, who has specific needs, linked for example to not only health issues, but also to UX."

LONGEVITY  
CARD

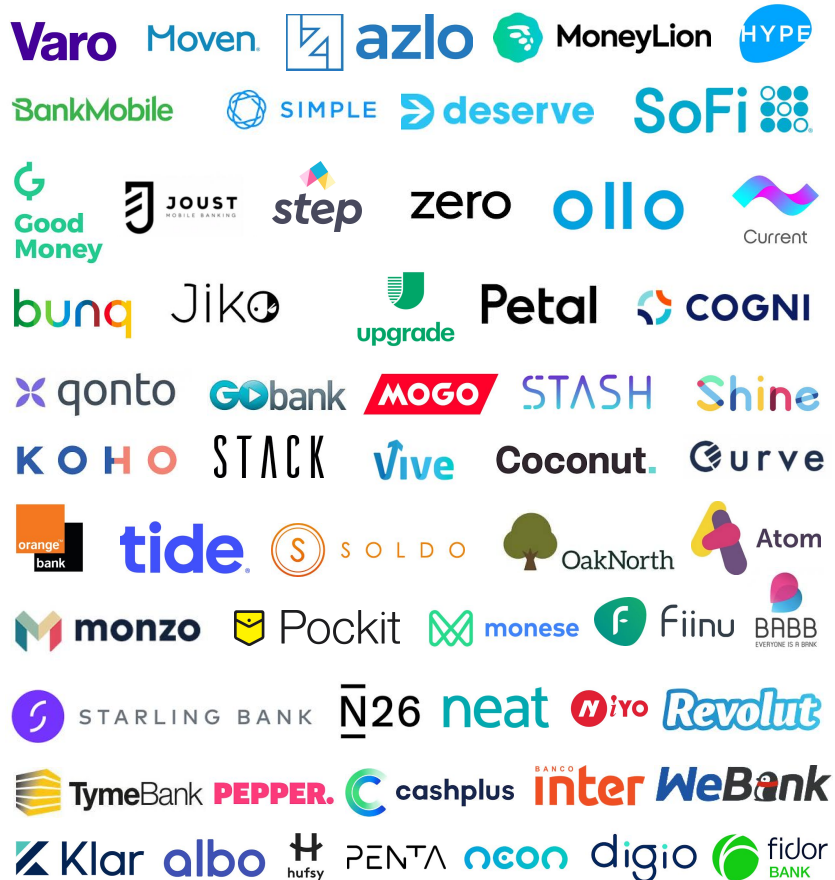


HEALTHY LIFESTYLE JOURNEY  
IN YOUR BANKING APP

Today we can see a significant raise of Challenger Banks, redefining the banking Industry by connecting with a New Generation of mobile-first consumers, **But** none of them offers financial products to meet the needs of **The 60+ Generation**



# Challenger Banks Landscape



Challenger Banks are chasing income from the Middle-Age and Younger Generation, **While Missing 1 Billion** Consumer or **15 Trillion** dollar market opportunity, developing financial products only for a Limited Age Category

*“Age Is an Issue of Mind Over Matter.  
If You Don’t Mind, It Doesn’t Matter”*

Mark Twain

---

Longevity Card Will Employ Senior Citizens  
as a Part of its Team to Design Age Friendly  
Products and Increase the Level of Senior  
Generation’s Trust to Modern Financial  
Institutions and Banking Technologies



# Longevity Investment Dashboard

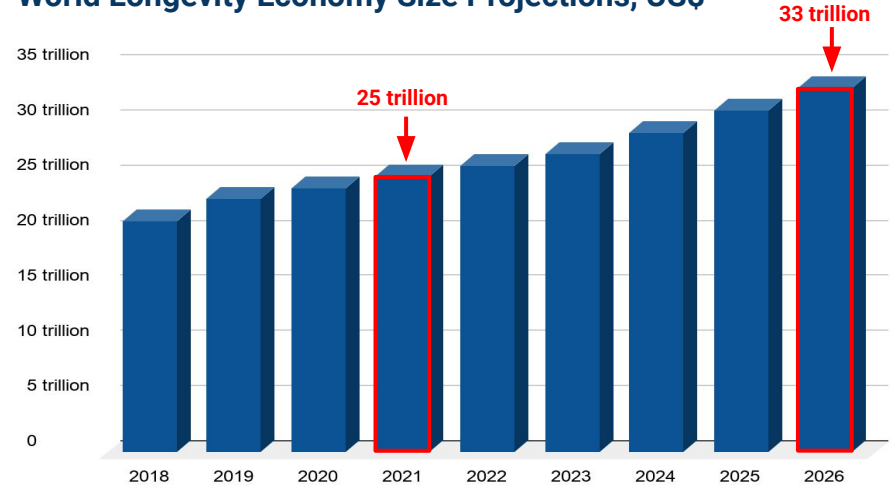
# Longevity Investment Analytics

## About Longevity Investment Big Data Analytics Dashboard

Longevity investment analytics dashboard developed by Aging Analytics Agency (AAA) is aimed at producing **knowledge-based validated investment insights** covering various sectors of longevity industry forming 4 major groups: longevity financial industry, longevity R&D, longevity medicine, and longevity technology.

The project is dedicated to generating **advanced data-driven quantifiable investment recommendations** in order to conduct **tangible, fast, comprehensive, and inexpensive SWOT analysis and due diligence** for longevity companies and investors, as well as **real-time financial analytics and consulting** for publicly traded corporations in longevity sectors, which includes 3 stages: data parsing, AI-driven data analysis, and user-friendly data visualization.

## World Longevity Economy Size Projections, US\$



The analytics can deliver value to investors looking for funding targets and companies analyzing their competitors

### Investors

- SWOT analysis of investment targets.
- Due diligence of portfolio companies.
- Stock market analysis.
- Analysis of the strategies of leading industry investors.

### Companies

- SWOT analysis of competitors.
- Automated business development recommendations generation.
- AI-based matching with investors.



# Longevity Investment Big Data Analytics Dashboard



# Database Major Parameters

## Entities

20 000+ companies

8000+ investors

400+ hubs

5000+ leaders

## Data Points

4 800 000 + data points

1000+ parameters

30+ vectors

100+ subvectors

## Sectors

4 categories

16 sectors

120+ subsectors

150+ countries

## Data Types

15+ types of entities

100+ subtypes of entities

10+ data types

3 data layers

# Longevity Big Data Investment Analytics: Key Analytics and Consulting Services

## Services for Companies

Deep SWOT Analysis

Benchmarking and Ranking

R&D Optimization

Recommendations on Hiring Specialists

Analysis of Relevance of Prospective Investors

Matching with Prospective Investors

Support of the Deal Making

## Services for Investors

Portfolio Optimization

Automated Data-driven Due Diligence

Investment De-risking

Investment Target Selection

AI-based SWOT Analysis of Investment Targets

Competitor Strategies Analysis

Matching with Partners

**Our key analytics and consulting services will provide your organization with an access to a highly specialized data-driven AI-based expertise and wide array of advanced analytical products**

# Big Data Analytics Dashboard

## Dashboard Overview

Aging Analytics Agency is building a sophisticated cloud-based engine for advanced market and business intelligence in various longevity sectors. It includes data mining engine, infrastructure for expert data curation, and advanced visualization dashboards, including mindmaps, knowledge graphs, and 3-dimensional visualizations.

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

## Commercial Value

- Data-driven insights about the emerging areas in the longevity medicine, fintech, and spacetechnology research and technology, including pharmaceutical, biotech, medical devices, and healthcare tech industries.
- Investment advisory and actionable insights about primary and secondary markets.
- SWOT analysis of most promising entities and technologies, providing a clear view of opportunities and risks.
- Identification of growth opportunities, including partnerships, technology deals, and investment prospects.
- Competitive intelligence.
- Business and technical due-diligence and more.

## Who Can Benefit

- Investment institutions, funds, investment banks;
- Private and public companies related to the longevity industry;
- Research institutions, universities;
- Technology vendors and contract research organizations;
- Startup hubs, accelerators;
- Consulting companies and agencies.

# Data Analysis Pipeline

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

## Data Aggregation

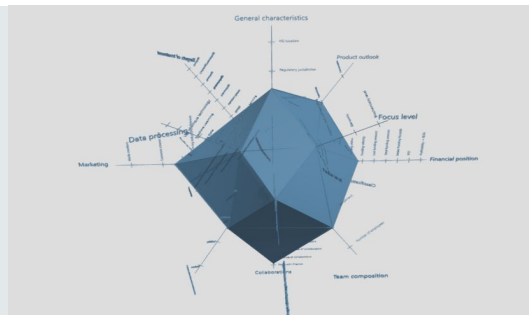
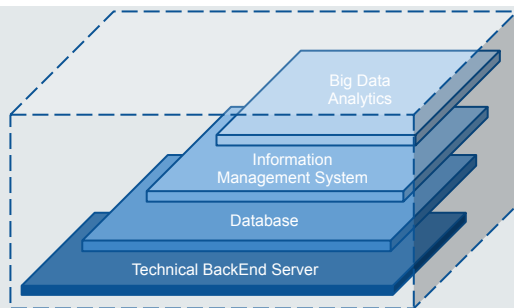
Automatized data parsing, aggregation, optimization, and management via using open-access and proprietary online databases, and expert opinion aggregation. Real-time database updates and structure building. Cooperation with companies, hubs, and investors regarding data aggregation and data quality check.

## Data Analysis

Machine learning and deterministic scoring algorithms aimed at ranking, valuation, SWOT analysis, correlation analysis, and recommendation generation. Data analysis combines financial and technological analysis, AI insights and expert opinions, machine learning and deterministic formulas.

## Data Visualization

SWOT analysis, competitor matching, and due diligence results are delivered in readily available, user-friendly form through advanced visualization mechanisms (3-dimensional and 4-dimensional radar charts). Diagrams visualize not only the results of the analytics, but the algorithms themselves, in order to prevent “black box” problem.



# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Aging Analytics Agency offers state-of-the-art interactive online AI-based **SWOT analysis system** covering more than 20000 companies in various longevity sectors.

The product allows to conduct initial data-driven due diligence of the companies **instantly, automatically, and holistically** by comparing 200-300 data points for each company combined in the 10-20 vectors of business development.

The results of the analysis are represented in easily perceived form of 2-dimensional and 3-dimensional radar charts.



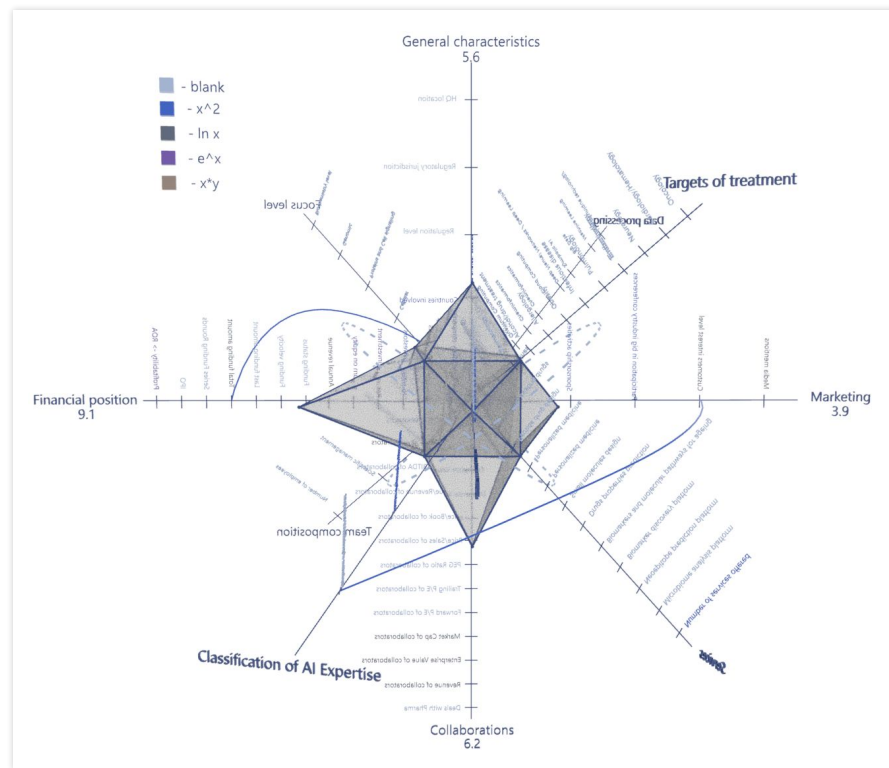
## Applications

Real-time SWOT analysis of longevity companies and investors

Analysis of closest competitors and comparison of related companies

Automatized algorithmic due diligence

Detection of the most prospective investment targets



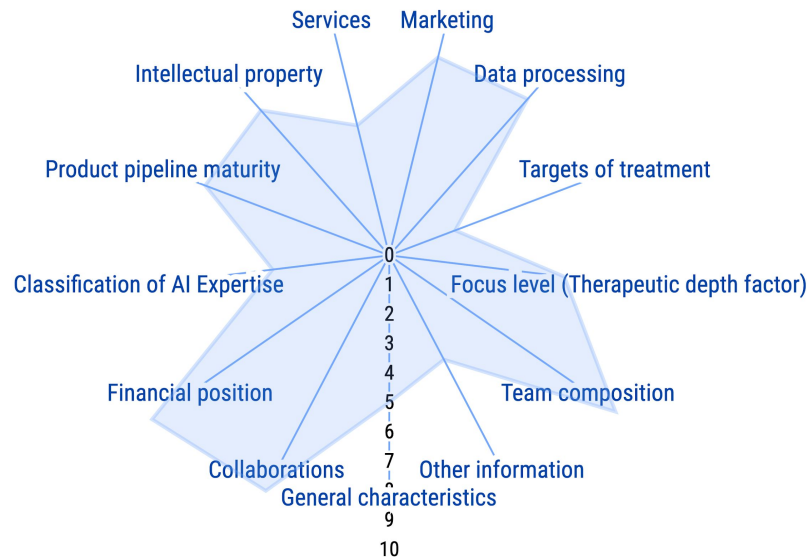
# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Automated SWOT analysis system allows to replace long, resource-requiring, manual, and unsystematic process of due diligence, investment analytics, and investment targeting by a real-time available product extracting insights from the **largest in the world longevity industry database** with the help of **deep learning algorithms and multidimensional polynomial formulas** calibrated by combining **expert opinions with big data analysis**.

This enables to conduct an investment analysis which is **faster, more precise, and cheaper** at the same time, since it is being done automatically, permanently, without essential human interaction, and using more data points.

## Database, AI and ML algorithms overview

Parameters	1000+ parameters with appropriate weights combined into 30+ vectors
Data points	4 800 000 data points which are being updated permanently
Algorithms	Deep neural networks, polynomial formulas with mathematical transformations, regression models
Data aggregation	Automated parsing, extrapolation using machine learning, feedback from companies



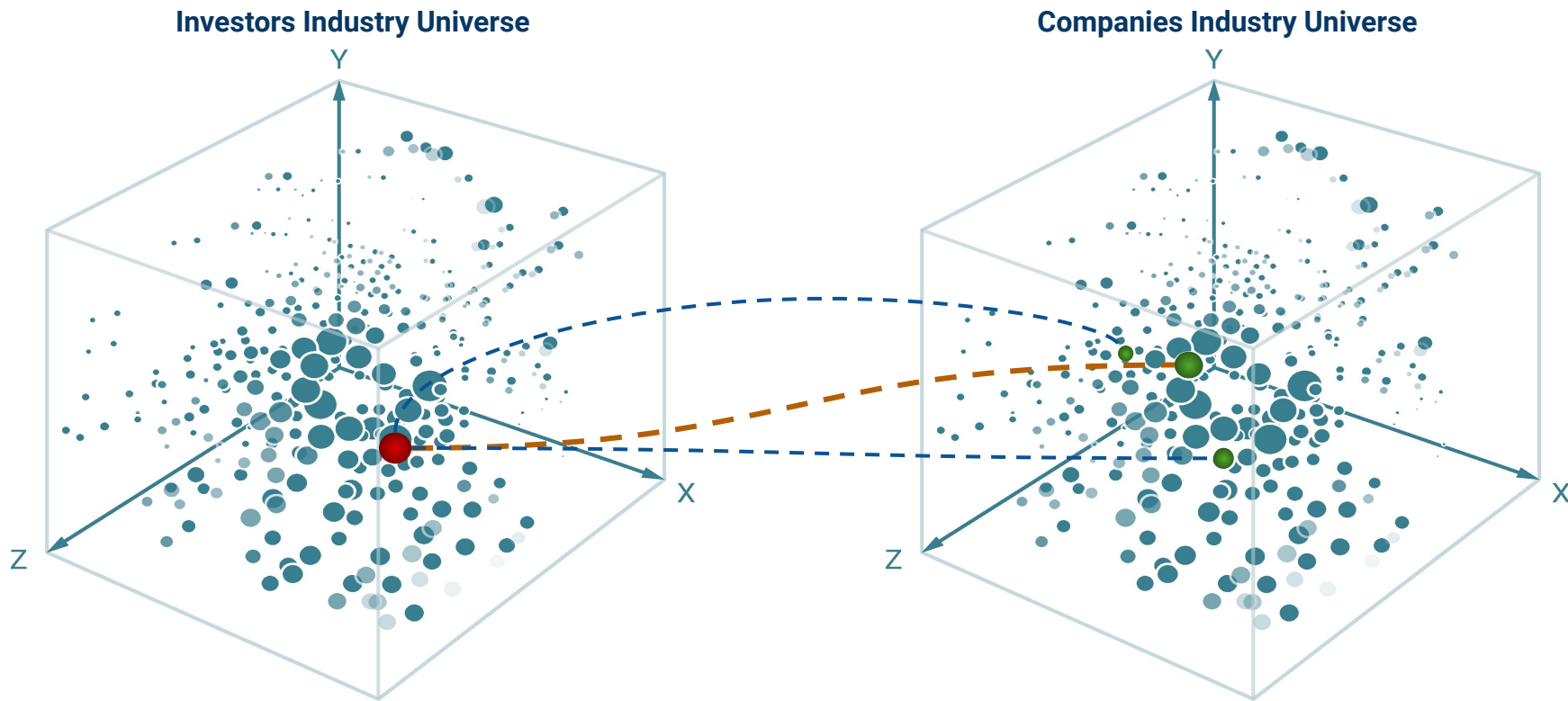
# Our Technologies

The technologies (AI, ML, algorithms, data aggregation, mathematical transformations) that are applied for each of our products are listed below.

SWOT Analysis	Data Aggregation	Forecasting	Clusterization and Competitor Analysis
Polynomial formulas, multidimensional vector spaces	Data extrapolation through regressions	Neural networks with LSTM layers for time series data analysis	Unsupervised machine learning for companies clusterization
Mathematical transformations: logarithmic, exponential, parabolic, multiplicative	Data extrapolation through deep neural networks	Recurrent neural networks to extract complex hidden connections from the data	K-Means algorithm for companies clusterization
Business development harmonization analysis: definite integrals, standard deviation	Natural language processing for tag cloud creation	Brownian motion modelling for stock market forecasts	Calculation of the distance between companies in multidimensional space
Variance-covariance analysis of the parameters of the companies	NLP-based data parsing	GARCH model	Convolutional neural networks for the identification of the companies with similar patterns
Linear algebra	Deep neural networks for data structuring	Real option analysis, scenario planning	Using tag clouds to categorize companies

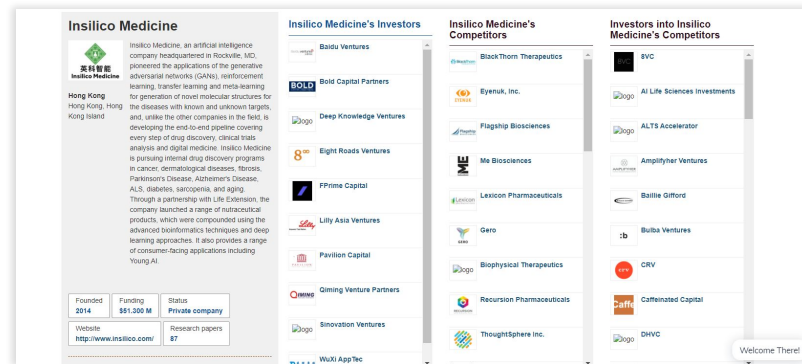
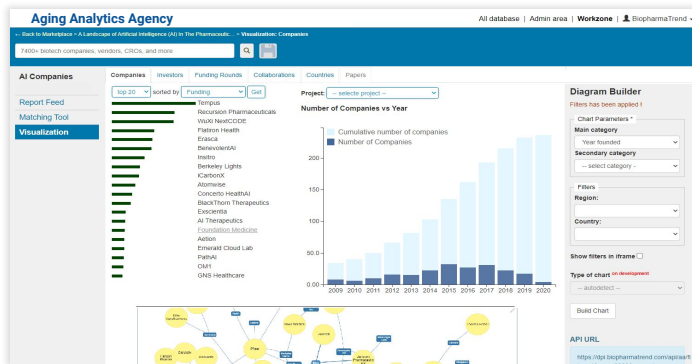


# Multidimensional Big Data Analytics Vector Space

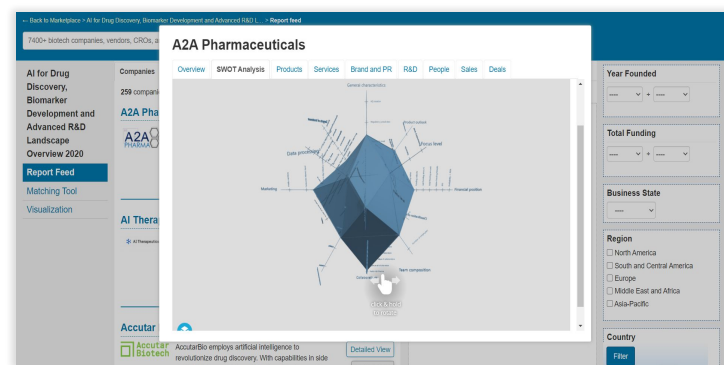


The system enables targeted and intelligent smart-matching between investors and portfolio candidates based on specified sectors and qualifying criteria (e.g. highly-targeted ratios of rankings in specific areas).

# Big Data Analytics Platform Features



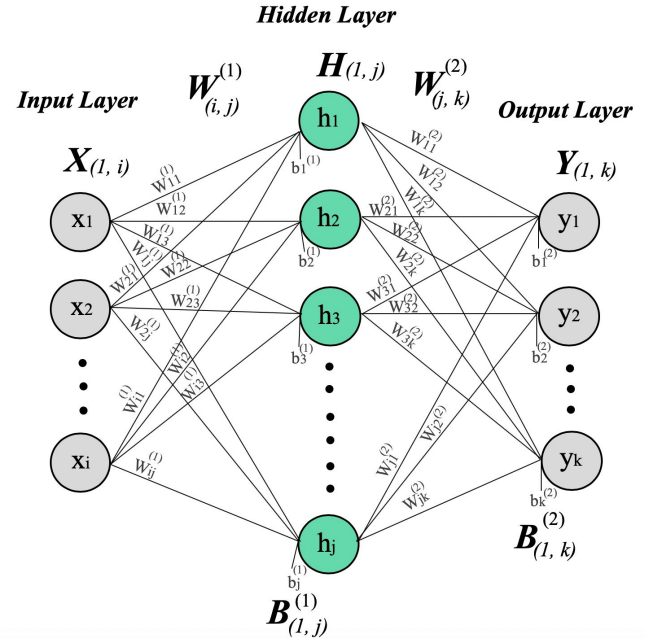
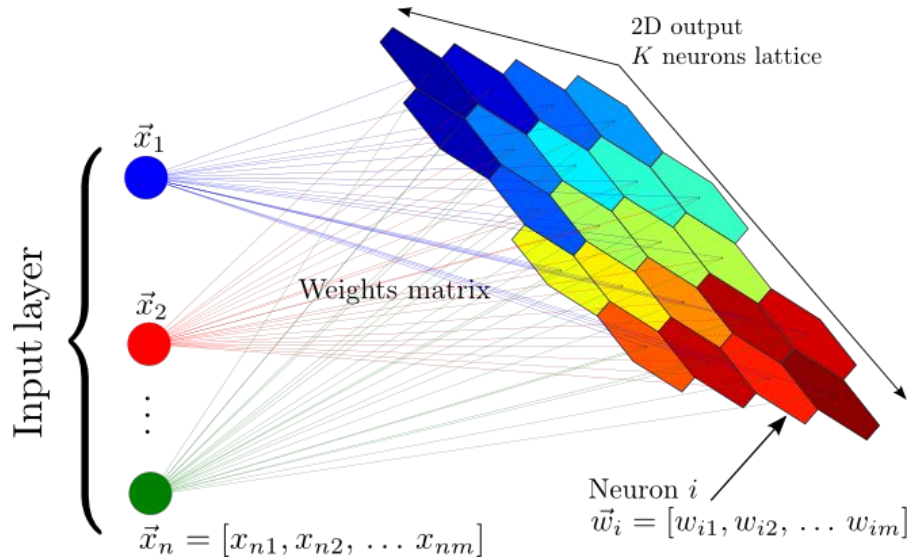
The analytics platform offers a suite of resources and capabilities, including a comprehensive database of data and user-friendly search, visualization, and matching capabilities, as well as dynamic SWOT analysis - allowing for revealing actionable quantifiable insights about longevity markets and players.



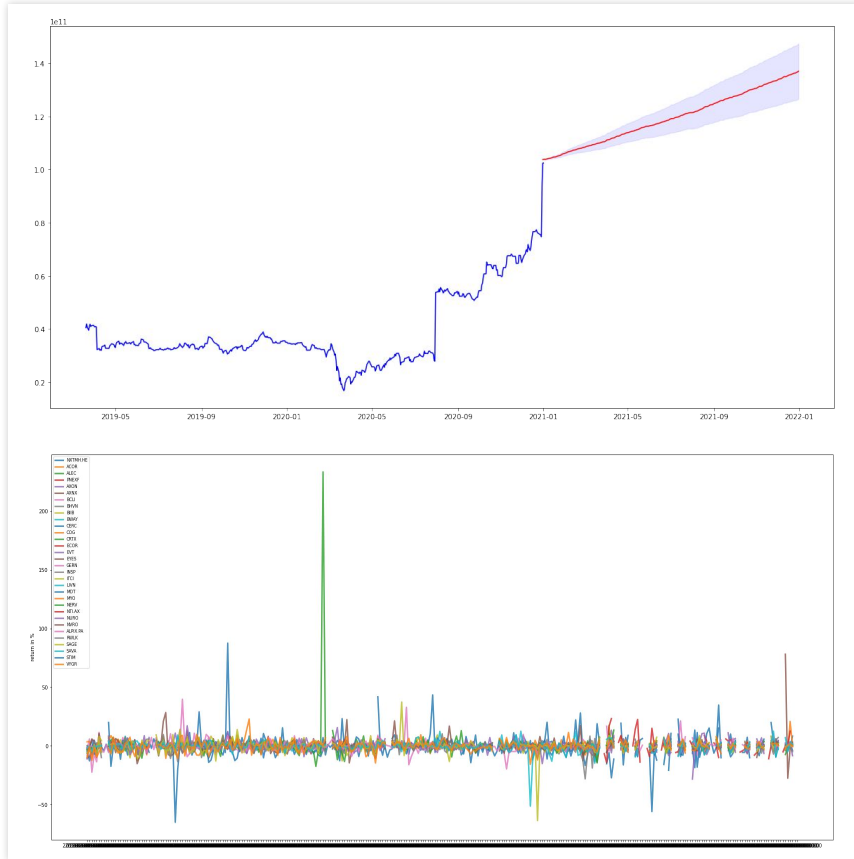
# Deep Learning for Longevity Investing Analytics

Aging Analytics Agency extensively applies deep learning algorithms to extract value from the longevity industry database. Deep neural networks are used for the **data points extrapolation, financial indicators forecasting, prediction of quantitative parameters of the companies and investors, and for the clusterization and categorization of the companies.**

We tune our algorithms by adjusting the architectures, types of neurons, activation functions, loss functions, and optimization methods.



# Stock Market Analysis



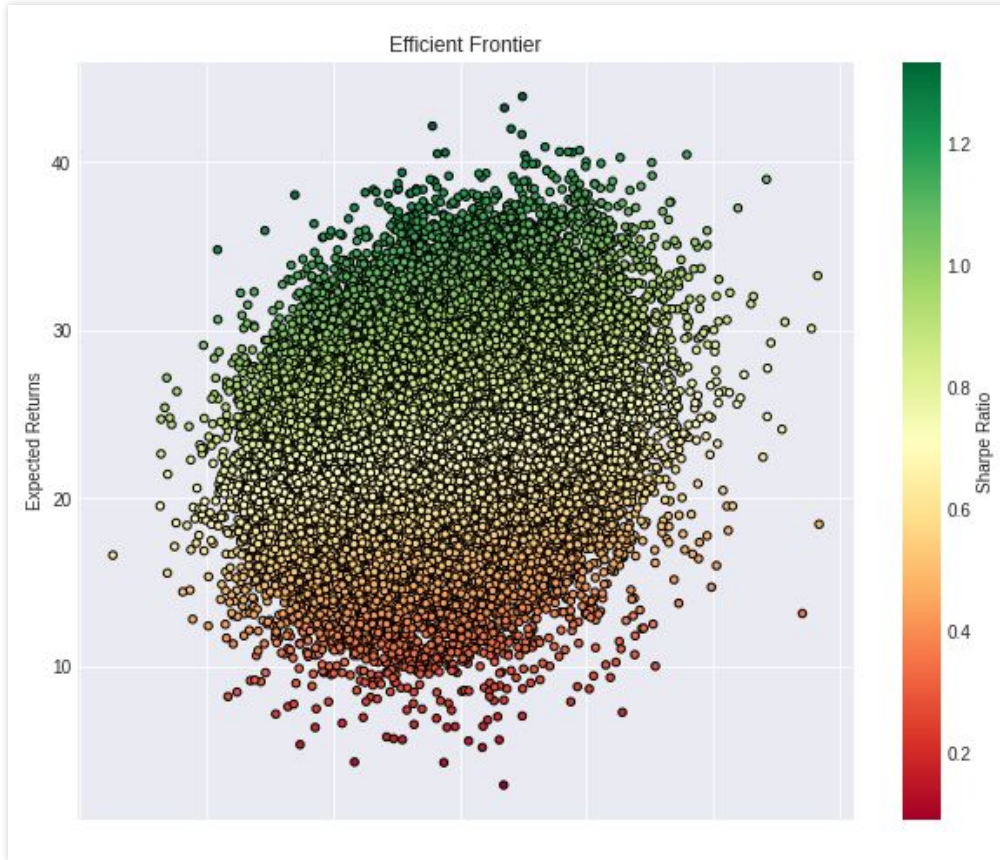
We provide **real-time data-driven AI-based stock market analytics and forecasting** related to various longevity sectors, such as geroscience, longevity gene therapy, and longevity neurotech.

The analytics includes:

- Portfolio optimization tools;
- Econometric analysis of stock prices dynamics;
- Stochastic simulations of stock prices and their derivatives;
- Technological evaluation of R&D process in longevity corporations;
- De-risking of stock market investments;
- Financial databases;
- Financial projections;
- Risk management metrics;
- Advanced trading strategies analysis including options and exotic derivatives;
- Fundamental analysis of deep tech stock prices.

We construct **specialized thematic stock indices** representing the dynamics of longevity sectors which serve as the foundation for the development of **longevity exchange traded funds**. These indices include not only relevant publicly traded corporations, but financial derivatives, funds, and bonds as well.

# Stock Market Analysis



Both conventional econometric models and advanced **artificial intelligence and deep learning tools** are applied to extract value from stock market data.

Financial analytics is combined with technological evaluation of the companies.

Stock market dataset which is being updated in real time provides **a concrete, quantifiable data-driven framework for longevity development hypothesis testing.**

**Stock market simulations** enable to test various trading strategies and investment principles.

Neural networks with LSTM layers for time series data analysis

Recurrent neural networks to extract complex hidden connections from the data

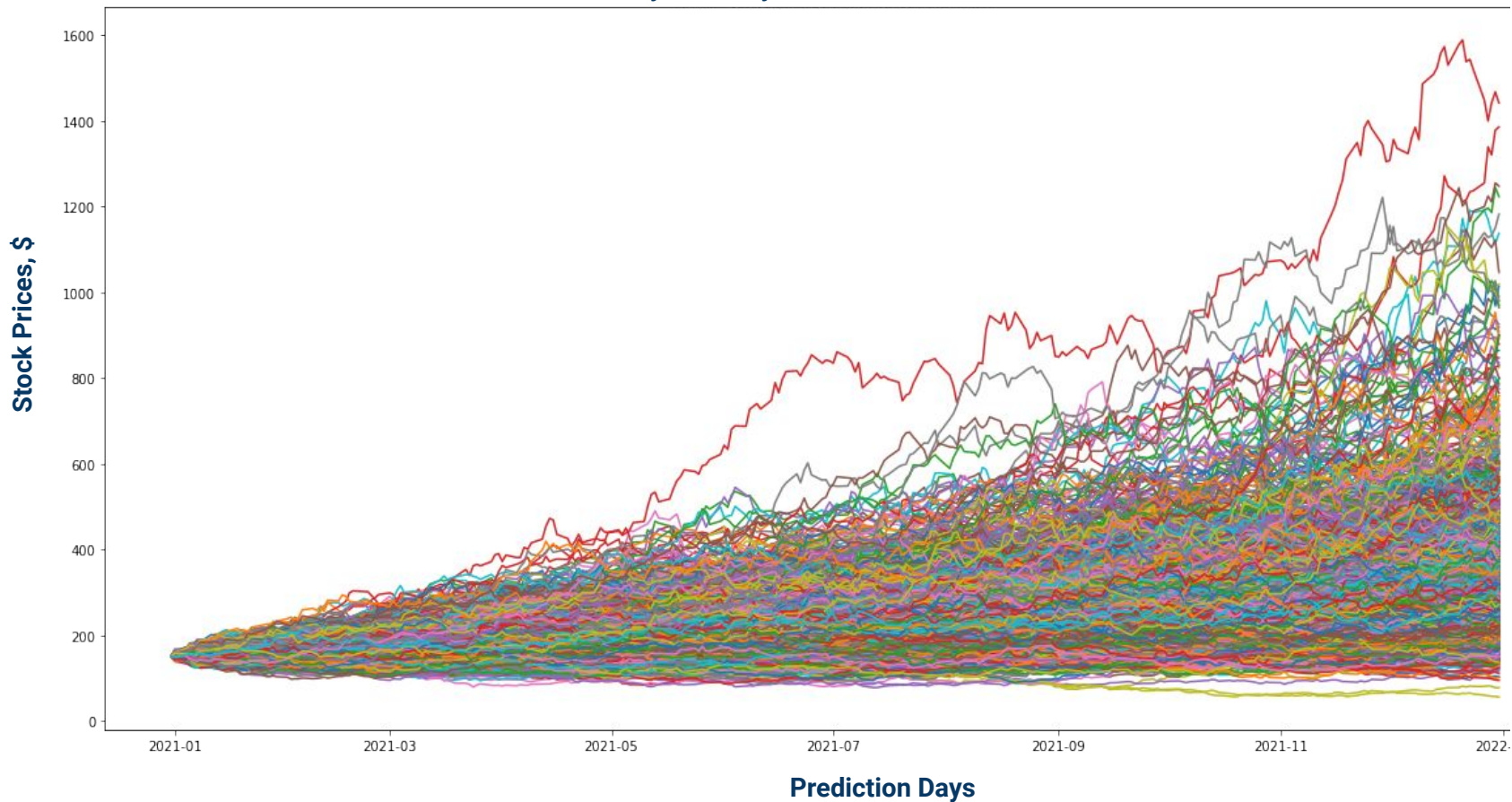
Brownian motion modelling for stock market forecasts

GARCH model

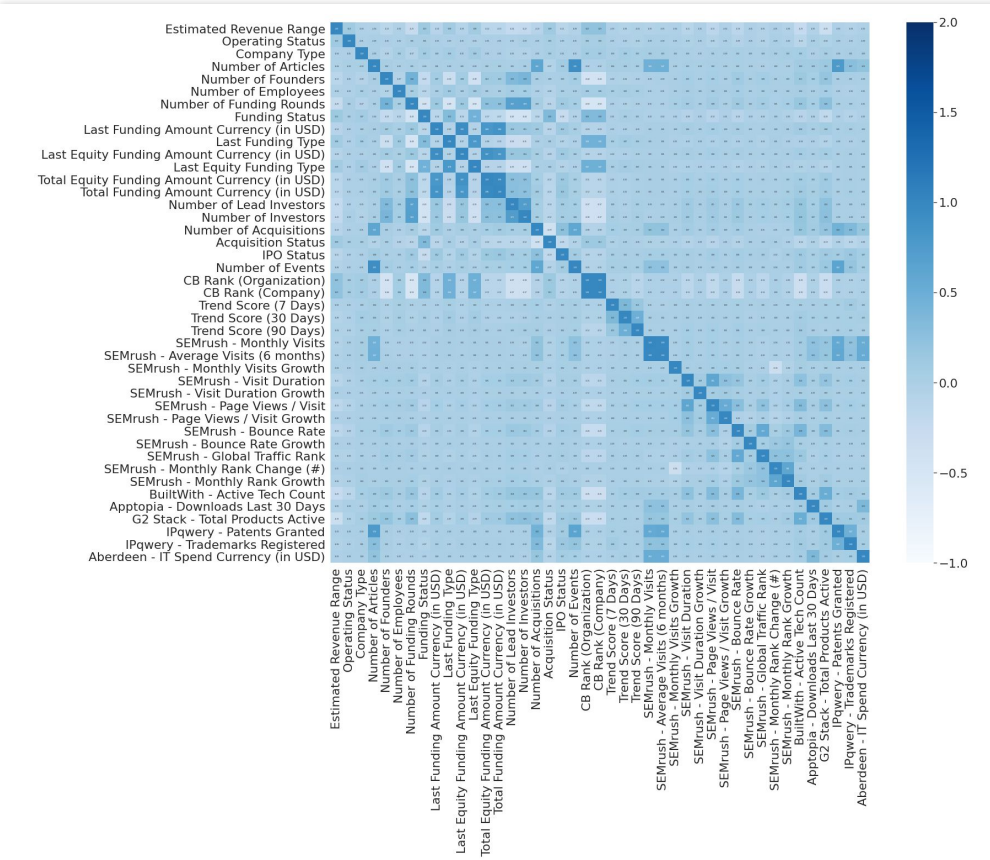
Real option analysis, scenario planning

# Simulating Stock Prices Using Geometric Brownian Motion

Daily Volatility : 0.028780648



# Variance-Covariance Analysis



Variance-Covariance and correlation analysis allows us to observe the connections between various parameters of the companies.

In order to extract intelligent, quantifiable, and actionable insights from this data, we apply statistical analysis of the dataset (skewness, kurtosis, outliers).

This approach is enhanced by regression analysis and the application of deep neural networks, as well as by expert opinion aggregation.

Variance-covariance matrices

Correlation matrices

Statistical analysis (skewness, kurtosis, outliers)

Principal component analysis

Non-linear regressions

# Services Overview: Companies

## Our services will help your company to:

- Obtain a better understanding of your market positioning and to enhance your value proposition to the market;
- Engage with a number of top executives of tech corporations and to establish commercial relationships (deals, collaborations, contracts, etc.) with them;
- Raise a new investment round in the future;
- Conduct competitive, comparative and SWOT analysis.

## Specific scope of services we can provide:

Deep Comparative/Competitive analysis	●	Identification of your competitors
Financial projections of the company	●	Analytical preparation for the IPO
Deep SWOT analysis	●	Benchmarking
Smart matching with potential investors	●	Identification of key market trends influencing your position
Identification of the most relevant potential clients/partners	●	Identification of your strengths and unique advantages and improvement of your competitive positioning
Competitor matching	●	Advanced human resources management
Product maturity evaluation	●	Company ranking and scoring



# Services Overview: Investors

## Our services will help the investors to:

- Select the most prospective investment targets - longevity startups with the opportunities of producing tangible disruptive results;
- Track the behavior and investment strategies of your competitors;
- Attract funding to your institution;
- Reallocate resources to more promising sectors and entities.

## Specific scope of services we can provide:

Deep Comparative/Competitive analysis	●	Identification of your competitors
Identification of the most promising investment targets	●	Analysis of the behavior and strategies of the competitors
Deep SWOT analysis of portfolio companies	●	Benchmarking
Ranking and scoring	●	Financial risks assessment and development of de-risking strategies
Data-driven automatized due diligence	●	Identification of your strengths and unique advantages and improvement of your competitive positioning
Real-time stock market analytics and forecasting	●	Development of investment strategies based on the individual risk preferences
Competitor matching	●	Potential partners matching

# Competitor Matching

Longevity companies and investors may benefit from identifying their closest competitors and similar companies in terms of technologies, products, R&D processes, and team compositions. We provide them with **AI-driven big data analytics tools** that enable **smart competitor matching, calculation of the distance between companies** in terms of their business development, location of the companies and investors in multidimensional vector space.

**We also apply smart automatized multiparametric companies clusterization** via the application of unsupervised machine learning.

The screenshot displays a web interface for 'AI Companies (Drug Discovery)'. It features a search bar at the top left. The main content area is divided into several sections:

- Insilico Medicine:** A detailed profile of the company, including its location (Rockville, MD), a description of its AI-driven drug discovery pipeline, and a table of key metrics.
- Insilico Medicine's Investors:** A list of investors such as A-Level Capital, Baldu Ventures, Bold Capital Partners, Deep Knowledge Ventures, Eight Roads Ventures, F-Prime Capital, Formic Ventures, Juvenescence, Lilly Asia Ventures, Longevity Vision Fund, and Pavilion Capital.
- Insilico Medicine's Competitors:** A list of competitor companies including Genialis, Engine Biosciences, E-therapeutics, SEngine Precision Medicine, Nanna Therapeutics, Anima Biotech, Intomics, Euretos, Cellarity, Cloud Pharmaceuticals, and Foundation Medicine.
- Investors into Insilico Medicine's Competitors:** A list of investors for the competitors, including 500 Startups, 6 Dimensions Capital, AME Cloud Ventures, ARCH Venture Partners, Alexandria Real Estate Equities, Alexandria Venture Investments, Allen & Company, Alumni Ventures Group, Amplify Partners, Baldu Ventures, and Baillie Gifford.

Founded	Funding	Status
2014	\$51.300 M	Private company

Webials	Patents	Research papers
<a href="http://www.insilico.com/">http://www.insilico.com/</a>	7	75

## AI and Data Analysis Tools for Competitor Matching

Unsupervised machine learning for companies clusterization

K-Means algorithm for companies clusterization

Calculation of the distance between companies in multidimensional space

Convolutional neural networks for the identification of the companies with similar patterns

Using tag clouds to categorize companies

# Interactive Network Diagrams

It is crucial to define a company or an investor in the context of the existing industry infrastructure. Identification of key company's collaborators and partners is a valuable addition to the **automatised quantitative SWOT analysis and competitor matching tools**.

Our platform enables investors or competitors to evaluate the prospects of the company by looking at its place in the industry networks, including **collaborations, partnerships, funding rounds, scientific cooperation, connections of R&D teams and higher management, and the level of the similarity of the markets**.



## Tools for Industry Connections Building

- Funding rounds analysis
- Collaboration analysis
- Team networks analysis
- Comparative analysis of business development
- Market closeness analysis

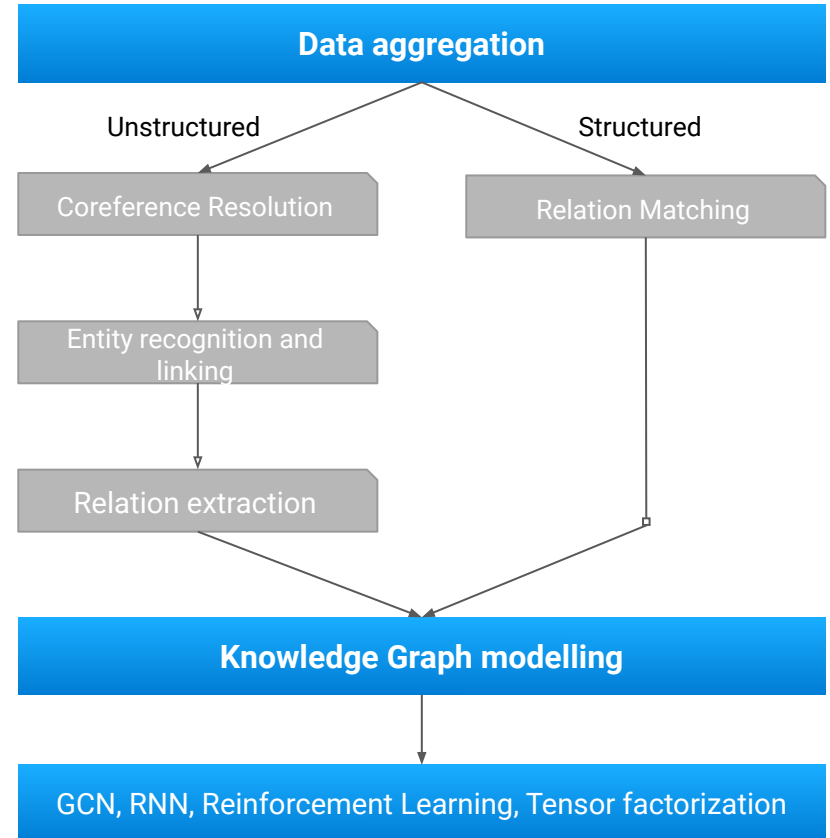
# Natural Language Processing for Data Aggregation

**Aging Analytics Agency is implementing Natural Language Processing for data aggregation and market assessment.**

Concerning the amount of data generated on the everyday basis, we see an urgent need in optimization and additional advancements in the data gathering and data analysis processes. This led us to the implementation of the advanced NLP-techniques used for the intellectual data parsing. Such technology allows us to gather multiparametric, high-dimensional data. Aging Analytics Agency uses graph-based databases enabling the enhanced analysis of such data.

The ultimate goal of NLP-based data gathering is the creation of Knowledge Graphs for all sub-sectors of the Longevity Industry, including the AI in Pharma market. These graphs will allow to assess and analyze both structured and unstructured data, including but not limiting to:

- financial statements
- reports and sites
- investors and their relations to other companies
- patents
- scientific data
- collaborations
- other.



# Risk vs. Diversification Analysis of Leading Longevity Investment Funds

	Longevity Investment Fund	Investment Focus	Research Focus	Funding Round Focus	Geographical Distribution of Assets	Investment Strategy
1	LifeBio Venture Partners	Diversified Portfolio	Human Life Extension	Diversified Portfolio	Diversified	Competitive
2	Longitude Capital	Diversified Portfolio	Human Life Extension	Diversified Portfolio	Concentrated	Competitive
3	LifePoint Capital	Diversified Portfolio	Human Life Extension	Diversified Portfolio	Diversified	Competitive
4	Generative Ventures	Digital Health	Human Life Extension	Early Stage Venture	Concentrated	Middle Risk Level
5	Gene Ventures	Digital Health	Human Life Extension	Early Stage Venture	Diversified	Middle Risk Level
6	Advent Life Sciences	Drug Discovery	Human Life Extension	Diversified Portfolio	Diversified	Middle Risk Level
7	Proton Capital Partners	Drug Discovery	Human Life Extension	Diversified Portfolio	Diversified	Middle Risk Level
8	Longevity Vision Fund	Diversified Portfolio	Preclinical Trials (Mice)	Early Stage Venture	Diversified	Middle Risk Level
9	8K Capital Management	Drug Discovery	Human Life Extension	Diversified Portfolio	Diversified	Middle Risk Level
10	Ascendence	Drug Discovery	Preclinical Trials (Mice)	Diversified Portfolio	Diversified	Middle Risk Level
11	V Capital	Diversified Portfolio	Diversified	Early Stage Venture	Diversified	Middle Risk Level
12	Stemcell	Digital Health	Human Life Extension	Early Stage Venture	Concentrated	Middle Risk Level
13	Proton Seed Capital	Diversified Portfolio	Human Life Extension	Early Stage Venture	Diversified	Middle Risk Level
14	Regenerative Longevity Investment Venture Fund	Diversified Portfolio	Human Life Extension	Late Stage Venture	Concentrated	Middle Risk Level
15	Technic Capital	Digital Health	Human Life Extension	Early Stage Venture	Concentrated	Middle Risk Level

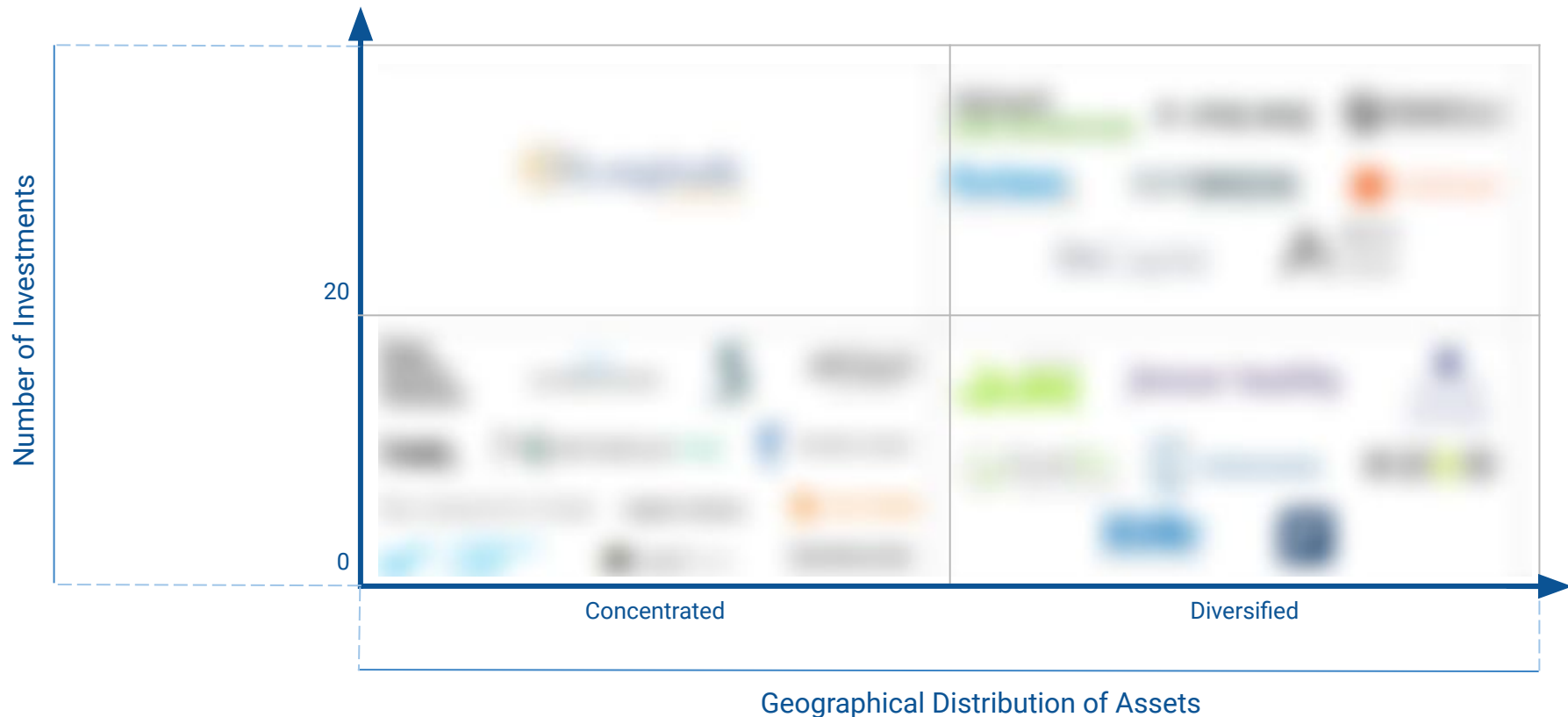
# Risk vs. Diversification Analysis of Leading Longevity Investment Funds

	Longevity Investment Fund	Investment Focus	Research Focus	Funding Round Focus	Geographical Distribution of Assets	Investment Strategy
16	AKOIA Venture Partners	Diversified Portfolio	Preclinical Trials (Mice)	Diversified Portfolio	Diversified	Middle Risk Level
17	Life Biosciences	Drug Discovery	Preclinical Trials (Mice)	Early Stage Venture	Diversified	High Risk Level
18	Salutivest Investments	Drug Discovery	Preclinical Trials (Mice)	Diversified Portfolio	Diversified	High Risk Level
19	Orionet	Drug Discovery	Preclinical Trials (Mice)	Late Stage Venture	Diversified	High Risk Level
20	Next Bio Ventures	Drug Discovery	Human Life Extension	Early Stage Venture	Concentrated	High Risk Level
21	Agentic Ventures	Drug Discovery	Preclinical Trials (Mice)	Early Stage Venture	Concentrated	High Risk Level
22	AKOIA	Diversified Portfolio	Preclinical Trials (Mice)	Early Stage Venture	Diversified	High Risk Level
23	Methuselah Fund	Drug Discovery	Preclinical Trials (Mice)	Early Stage Venture	Concentrated	High Risk Level
24	The Longevity Fund	Drug Discovery	Preclinical Trials (Mice)	Early Stage Venture	Concentrated	High Risk Level
25	IS Fund	Drug Discovery	Preclinical Trials (Mice)	Diversified Portfolio	Concentrated	High Risk Level
26	Vidaris Venture Partners	Drug Discovery	Preclinical Trials (Mice)	Diversified Portfolio	Diversified	High Risk Level
27	Deep Science Ventures	Drug Discovery	Preclinical Trials (Mice)	Early Stage Venture	Concentrated	High Risk Level
28	True Capital	Drug Discovery	Human Life Extension	Early Stage Venture	Concentrated	High Risk Level
29	Finghans Partners	Drug Discovery	Preclinical Trials (Mice)	Diversified Portfolio	Diversified	High Risk Level
30	Forever Healthy	Diversified Portfolio	Preclinical Trials (Mice)	Early Stage Venture	Diversified	High Risk Level

# Investment Analytics: Investment Specialization vs. Investment Approach

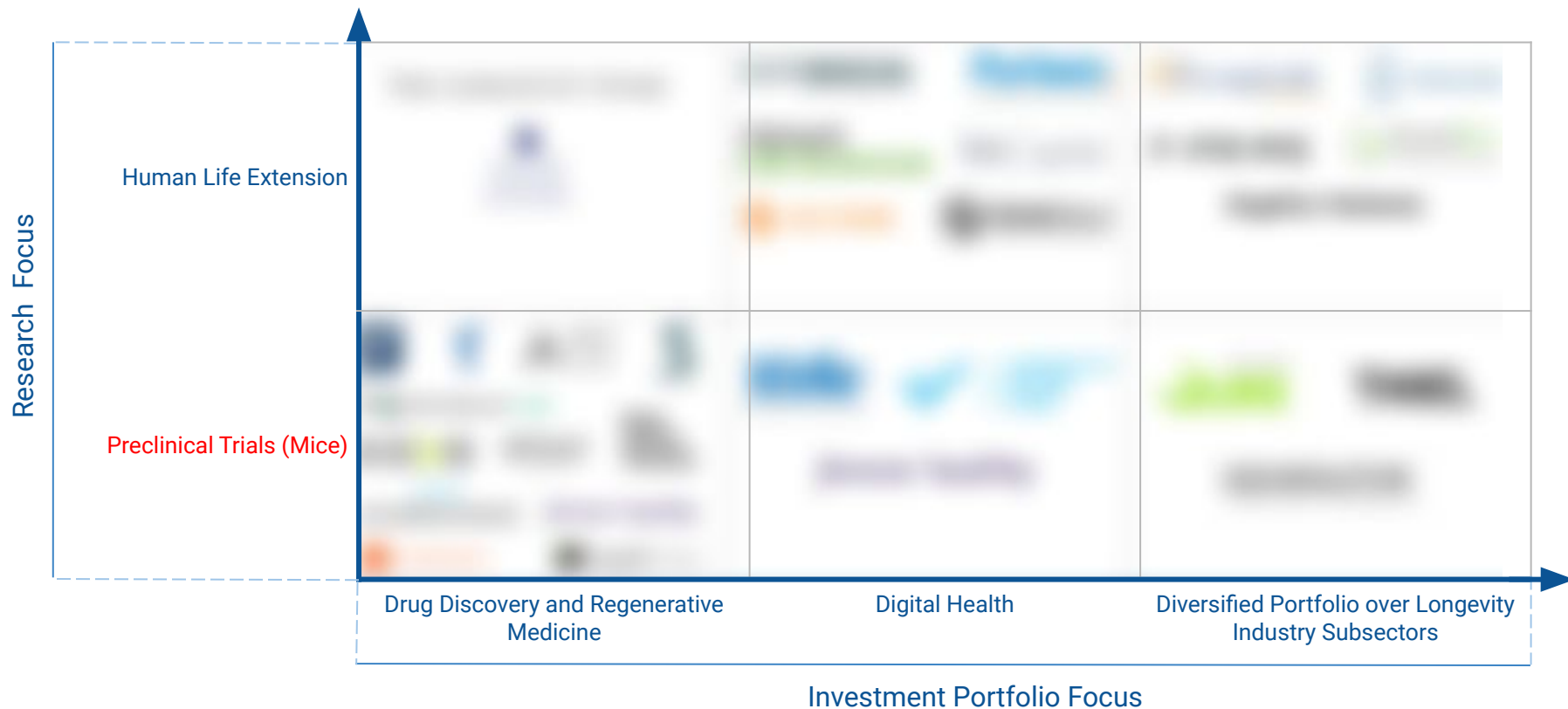


# Investment Analytics: Number of Investments vs. Geographic Diversification

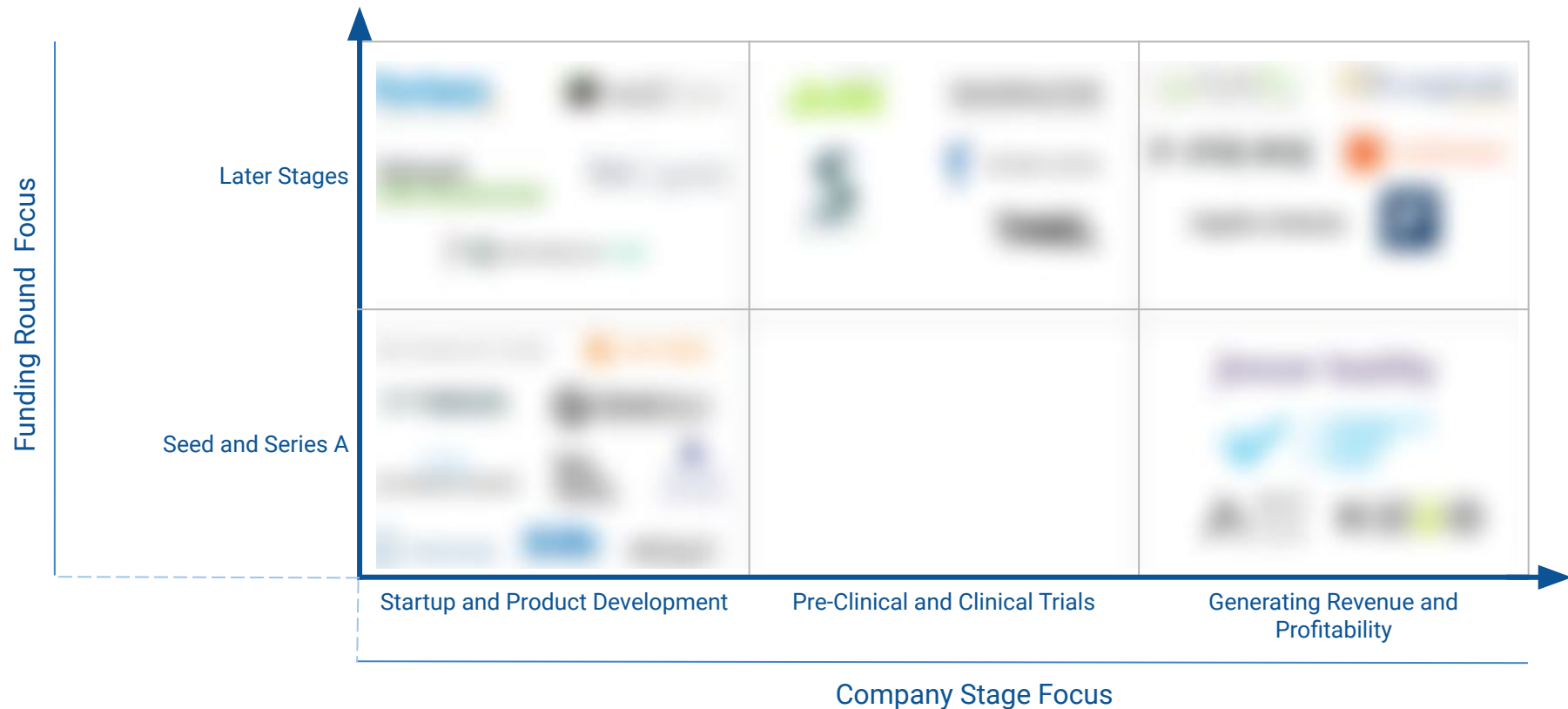




# Investment Analytics: Research Focus vs. Investment Portfolio Focus



# Investment Analytics: Founding Round Focus vs. Company Stage Focus



# Comparative Analysis of Longevity Companies

Company	High number of Longevity experts, large volume of scientific papers	High TRL (measure of market readiness)	Number of clinical trials completed, ongoing and planned	Management with history of successful IPO, merger and acquisitions	Large team and budget allocation for advanced R&D	Use of unique technology and IP
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# Top 20 Longevity Investors

Top Longevity Companies	←	Investments overall	INVESTORS	Investments Overall	→	Top Longevity Companies
		9	 Triommat  SEQUOIA Sequoia Capital	9		 Moderna  Novartis
		8	 3iV 3iV  GS Fund	8		 Moderna  Pfizer
 Schering-Plough  Insitro		8	 GV GV  Data Collective	8		 Moderna  Novartis
 Moderna  Novartis		8	 AME AME Cloud Ventures  Zephyr Zephyr	7		 Moderna  Novartis
 Moderna  Novartis		6	 Khosla Ventures Khosla Ventures  Andreessen Horowitz	6		 Insitro  Pfizer
		6	 Sequoia Capital Partners Sequoia Capital Partners  PILLAR Pillar Capital	5		 Novartis  Moderna  Novartis
 Pfizer		5	 General Catalyst General Catalyst  StarX StarX	4		 Pfizer
 Pfizer		4	 Sequoia Capital Sequoia Capital  Novartis Novartis	4		 Moderna  Novartis  Novartis
		4	 Novartis Novartis  Draper Associates	4		 Moderna
 Novartis GENS HEALTHCARE		3	 Novartis Novartis  3iV 3iV Startups	3		

# Forecasting of the Emerging Technologies and Assessment of Opportunities

**Due Diligence on Strength of the Emerging Technologies and Forecasting on Opportunities Likely to be Incorporated into Longevity R&D in 3-5 years.**

In order to compete in the future, it is crucial to be an early adopter of game changing technologies, like various “flavors” of AI landscape. To address this need, Aging Analytics Agency investment analytics services offer automatized strategic insights, including the following:



# Support of Longevity Companies for Matching with Prospective Investors

Multiple longevity industry sectors have a large potential to impact the whole economy essentially. Knowledge of the key investors in this industry is crucial for the survival and development of every company operating in the market.

## We deliver:



Data on seed rounds, private equity, corporate rounds, venture funding, grants, as well as other types of funding rounds and non-equity assistance will be collected and analysed according to various parameters set forth in our proprietary evaluation criteria methodology. All leading investors in longevity sectors are selected based primarily upon the following criteria groups:

**Investment strategies**

**Portfolio companies features**

**Technologies, tools, and team**

# Investment Analysis and Enhanced Due Diligence for Investment Funds



Using sophisticated quantitative analytical frameworks, we identify and provide recommendations on most promising startups, most undervalued or overvalued companies thus enhancing the process of investment target identification for large investment funds.

Enhanced due diligence for actual investment targets, conducting deep analysis of ratios of scientific and technological strength, management team strength, business development, marketing, IP and other pertinent metrics are applied to strengthen and somewhat automate the due diligence process of investment firms interested in this sector.

## Analysis includes the identification of the companies which:

- Have unique technology and advantage in some particular domain of longevity industry
- Are undervalued or currently early-stage and could be considered as an interesting potential investment target
- Have strong scientific background and validation in R&D
- Exhibit IP-compliance according to our infringement analysis, and can be considered as a reliable counterparty for corporate clients and partners



# Longevity Finance Analytics Dashboard

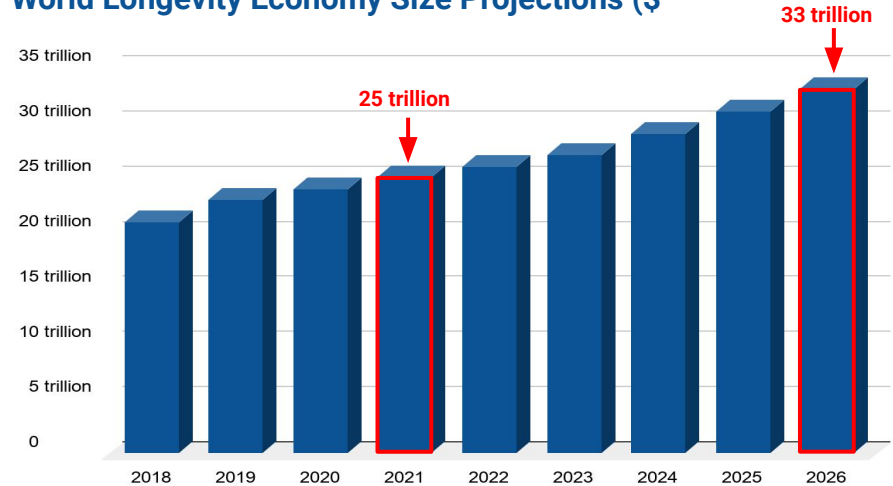
# Longevity Finance Analytics Dashboard

## About Longevity Finance Big Data Analytics Dashboard

Developed by Aging Analytics Agency (AAA), the Longevity Finance Analytics Dashboard is a licensed white-label solution designed for financial corporations (e.g. banks, pension funds, asset management firms, and insurance companies) looking to adjust their business models to longevity-focused banking and **tap into the multi-trillion market of 1 billion people** in retirement.

The project aims to provide **tangible, data-driven, fast, comprehensive, and inexpensive SWOT analysis, customized practical recommendations, benchmarking, forecasting, and guidance** needed to transform financial institutions for longevity-related challenges in the future.

## World Longevity Economy Size Projections (\$)

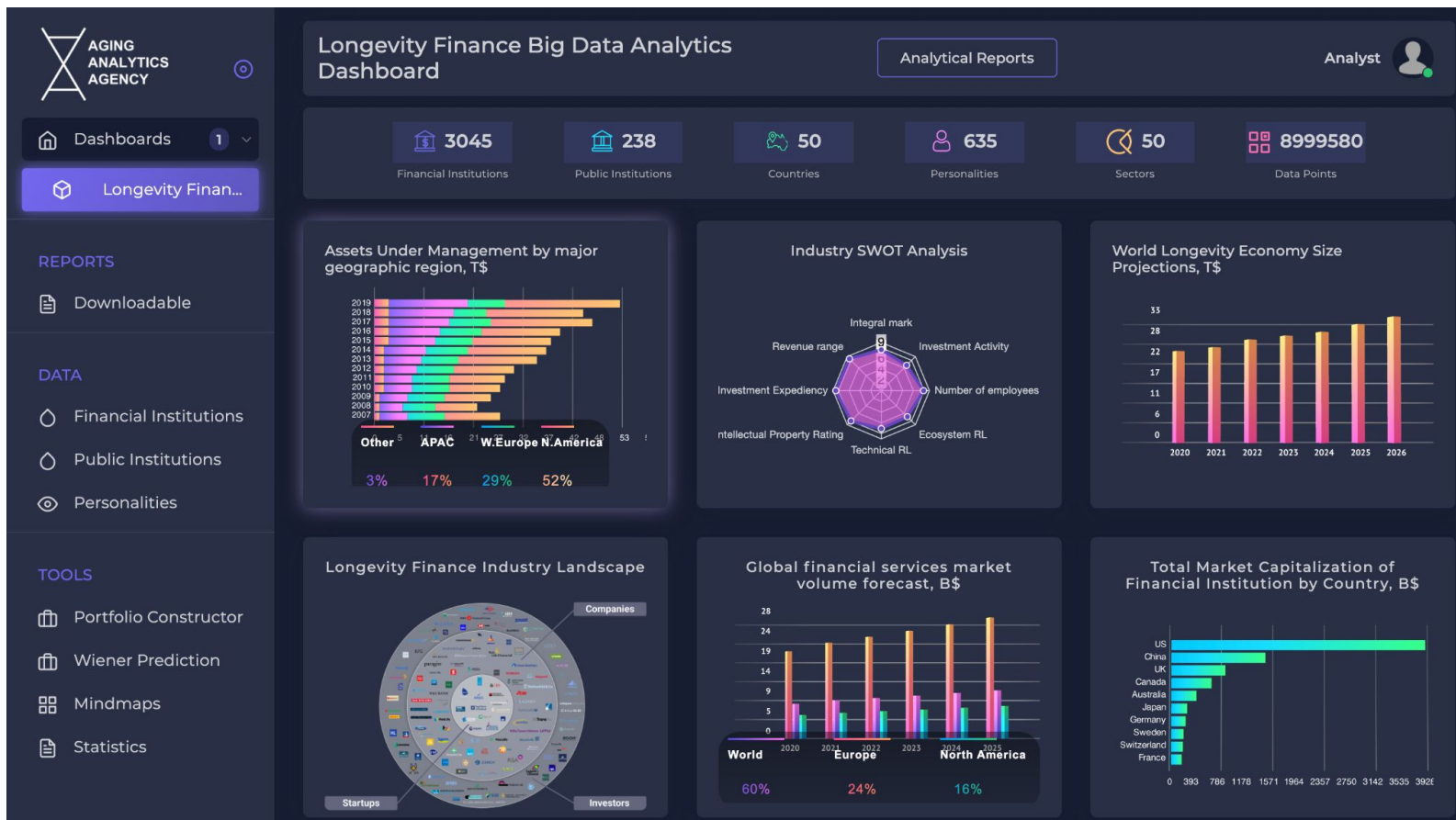


The analytics provided herein can help deliver value to financial institutions and adjust their business models to longevity-related challenges in the future

### Financial Institutions (e.g. Banks, Pension Funds, Asset Management Firms, and Insurance Companies)

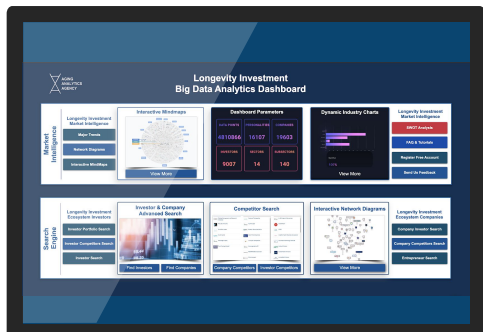
- SWOT analysis of the most promising entities and technologies;
- Real-time monitoring of the developments in the longevity financial industry;
- Benchmarking of the most market-ready longevity finance technologies;
- Due diligence of the emerging technologies' strengths;
- Forecasting of opportunities.

# Longevity Finance Big Data Analytics Dashboard

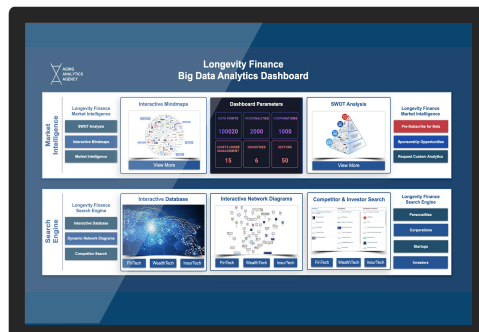


# Longevity Finance Big Data Analytics Dashboard

## Longevity Investment



## Longevity Finance



## Longevity Governance



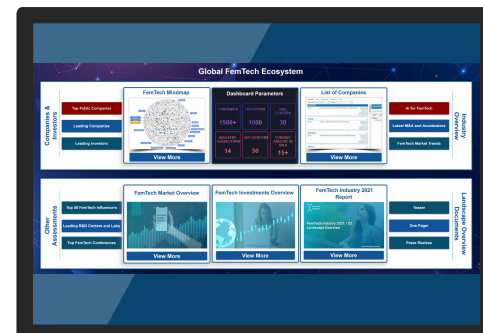
## AI-Pharma



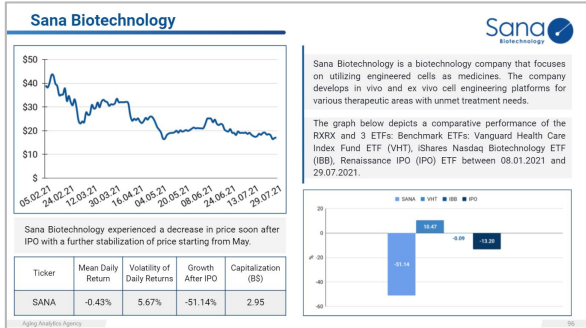
## NeuroTech



## FemTech



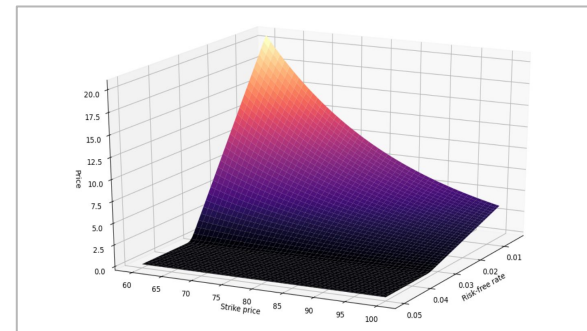
## Longevity Investment Digest



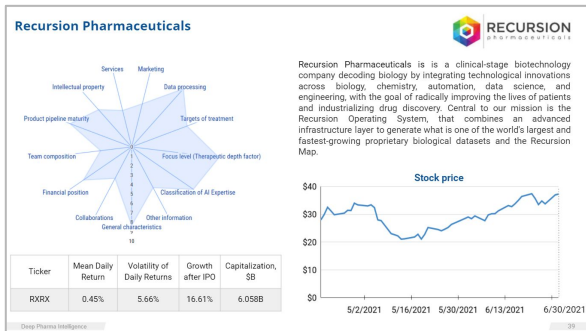
## Publicly Traded Longevity-Focused Companies



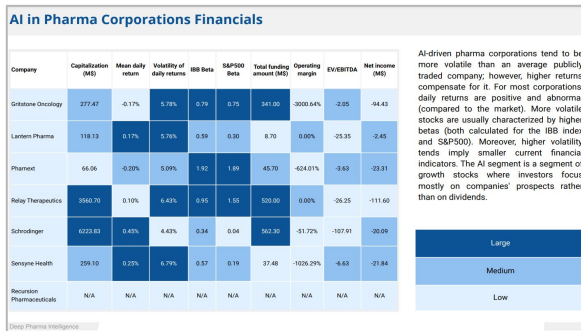
## Longevity Derivatives and Financial Instruments



## AI in Pharma Investment Digest



## AI in Pharma Publicly Traded Companies Investment Digest



Deep Knowledge Group is constantly working on the creation of advanced analytics for different markets and industries, including but not limited to: the Longevity Industry (including the AI in Pharma sector), SpaceTech, FemTech, NeuroTech and others. These digests provide profound and holistic perspectives on market developments and investment opportunities in the relevant sectors.

# White Label Solution for Longevity Financial Industry Analytics

## End-to-End Solution of Proprietary Analytics and Practical Recommendations on the Longevity Financial Industry

Large financial institutions lack the deep industry expertise required to transform their business models in a relevant Longevity-focused manner and to develop new Longevity financial products and services in a relevant manner

Aging Analytics Agency (major provider of analytics for Longevity Bank) has been producing advanced Longevity Industry analytics for 5+ years, and produced the first ever analytical report on the Longevity Financial Industry.

The agency is in an unparalleled position to offer the SWOT analysis, customized practical recommendations, benchmarking, forecasting and guidance needed to transform financial institutions for the Longevity Future.

Major Topics Include: Integrated AgeTech & WealthTech Solutions for Clients 80-100+, Longevity FinTech 2.0, AI for Financial Wellness, Longevity De-Risking, How to Develop Novel Longevity-Focused Financial Products

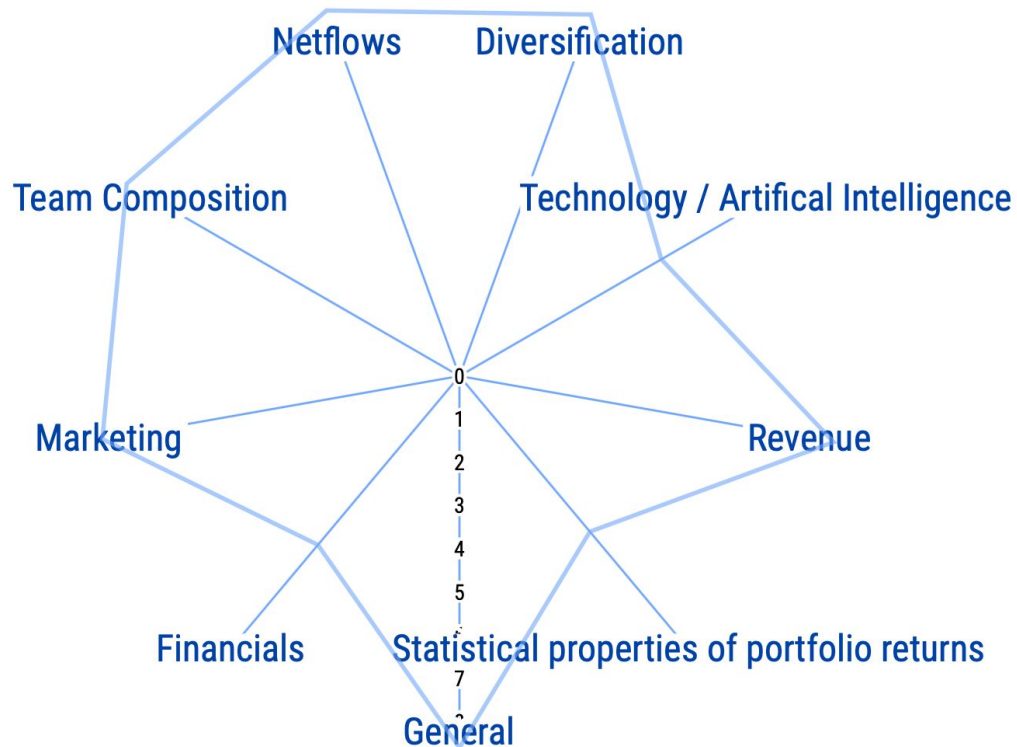


# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Aging Analytics Agency offers a state-of-the-art AI-based **SWOT analysis system** covering 300 financial institutions.

By comparing more than 50,000 data points combined in 30 vectors of business development, our system enables financial institutions to conduct initial, data-driven and quantifiable due diligence **instantly, automatically, and holistically**.

The results of the analysis are presented in easy-to-perceive 2D and 3D radar charts.



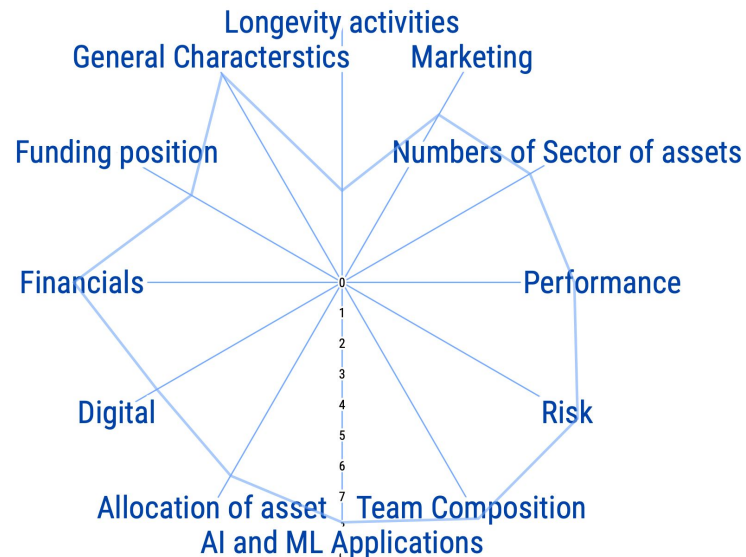
Applications
Real-time SWOT analysis of financial institutions
Analysis of closest competitors and comparison of related institutions
Automatized algorithmic due diligence
Detection of the most prospective investment targets

# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Our automated SWOT analysis system replaces a lengthy, resource intensive, manual, and unsystematic process of due diligence and financial analysis with a real-time product capable of extracting insights from **the world's largest longevity finance industry database**. This is achieved with the help of **deep learning algorithms and multidimensional polynomial formulas** calibrated by combining **expert opinions and big data analysis**.

Done automatically and without essential human interaction, it makes conducting investment and financial analysis **faster, cheaper and more precise**.

Database, AI and ML algorithms overview	
Parameters	1 000+ parameters with appropriate weights combined into 30+ vectors
Data points	50 000+ data points which are being updated permanently
Algorithms	Deep neural networks, polynomial formulas with mathematical transformations, regression models
Data aggregation	Automatized parsing, extrapolation using machine learning, feedback from financial institutions





# Top-300 Financial Institutions Advancing Longevity Industry

## 105 Asset Management Firms



## 75 Banks



## 55 Insurance Companies



## 20 Reinsurance Companies



## 45 Pension Funds



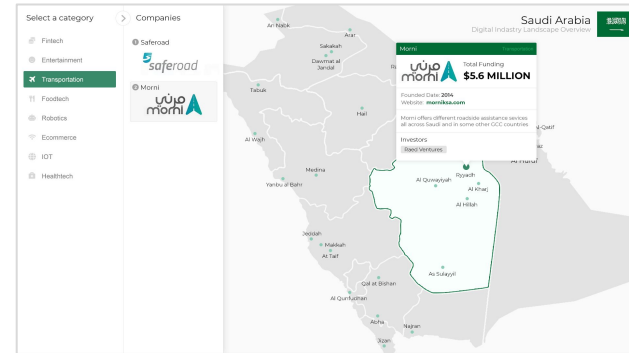
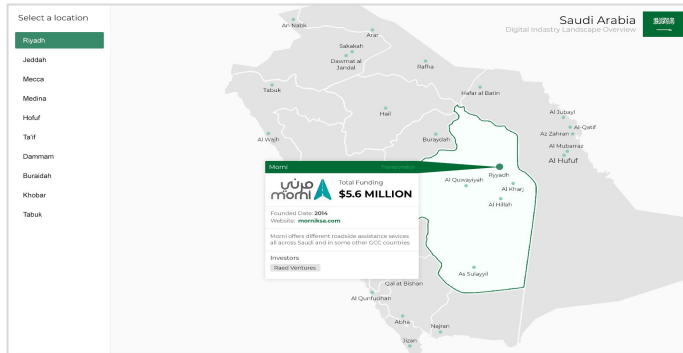
# Our Technologies

Please find below a list of technologies (i.e. AI, ML, algorithms, data aggregation and mathematical transformations) used in each of our products

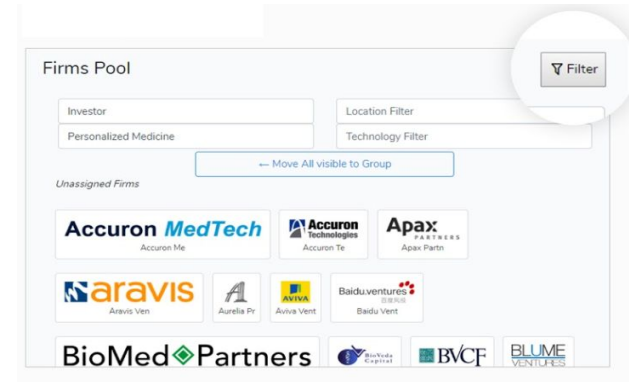
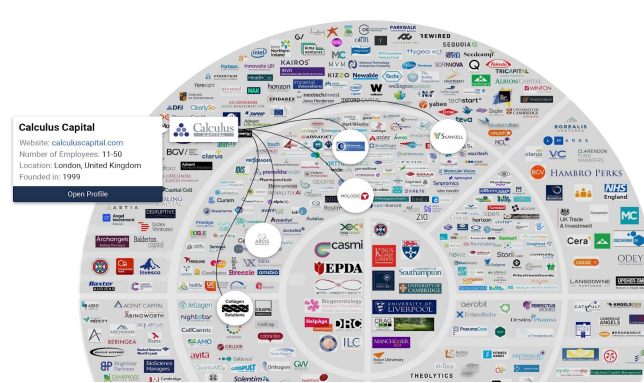
SWOT analysis	Data aggregation	Forecasting	Clusterization and competitor analysis
Polynomial formulas, multidimensional vector spaces	Data extrapolation through regressions	Neural networks with LSTM layers for time series data analysis	Unsupervised machine learning for financial institutions clusterization
Mathematical transformations: logarithmic, exponential, parabolic, multiplicative	Data extrapolation through deep neural networks	Recurrent neural networks to extract complex hidden connections from the data	K-Means algorithm for financial institution clusterization
Business development harmonization analysis: definite integrals, standard deviation	Natural language processing for tag cloud creation	Cash flow forecasting	Calculation of a distance between institutions in a multidimensional space
Variance-covariance analysis of the parameters of the financial institutions	Data parsing	GARCH model	Convolutional neural networks for identification of institutions with similar patterns
Linear algebra	Deep neural networks for data structuring	Real option analysis, scenario planning	Using tag clouds to categorize financial institutions

# Big Data Analytics Platforms Features

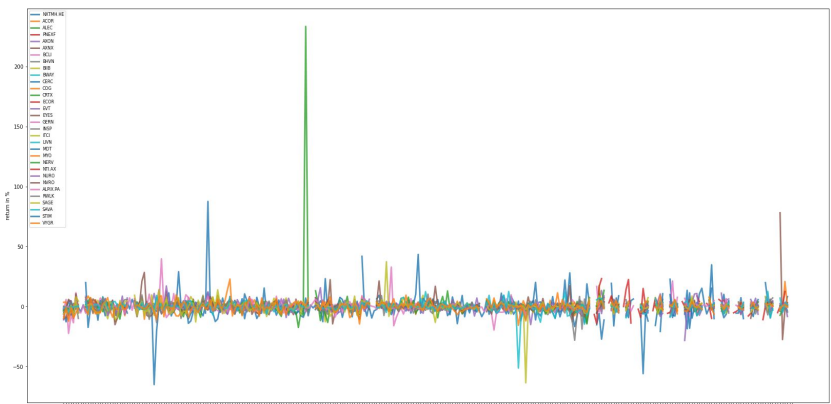
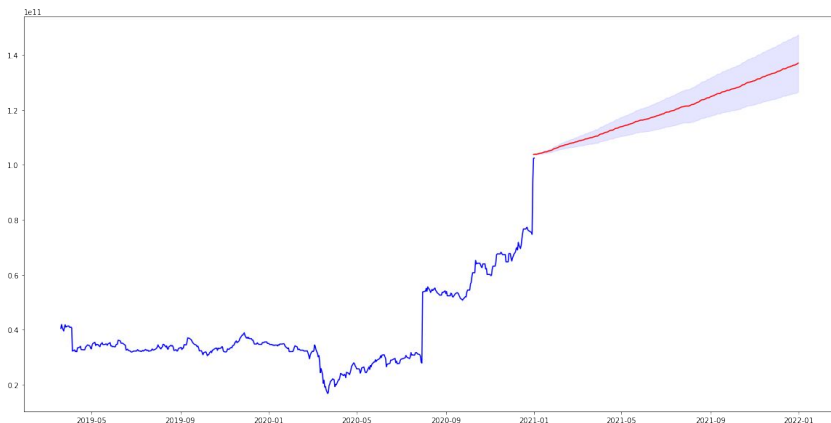
## Aging Analytics Agency



Our analytics platform provides its users with a plethora of resources and capabilities, including a comprehensive database, user-friendly search, visualization and matching capabilities, and dynamic SWOT analysis. All this combined makes it possible for its users to identify actionable and quantifiable insights into longevity markets and players.



# Stock Market Analysis



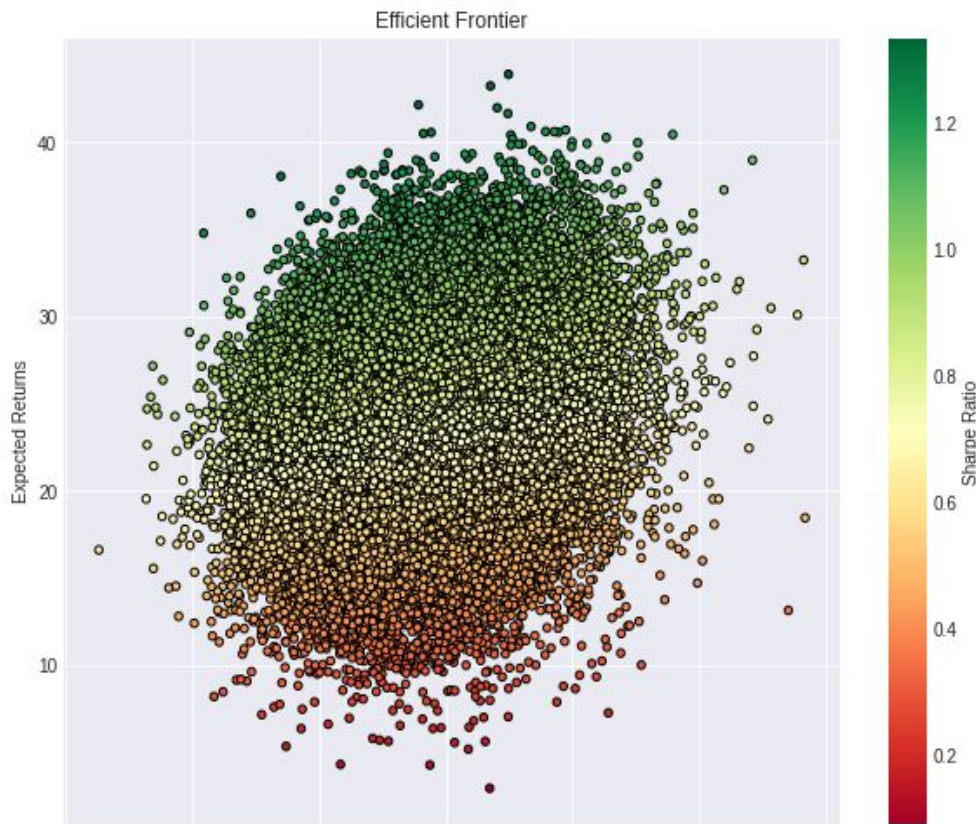
We provide **real-time, data-driven, and AI-based stock market analytics and forecasting** in various longevity finance sectors, such as longevity banking, asset management, and wealthtech.

Our analytics includes:

- Portfolio optimization tools;
- Econometric analysis of stock prices dynamics;
- Stochastic simulations of stock prices and their derivatives;
- Technological evaluation of R&D process in longevity corporations;
- De-risking of stock market investments;
- Financial databases;
- Financial projections;
- Risk management metrics;
- Advanced trading strategies analysis including options and exotic derivatives;
- Fundamental analysis of deep tech stock prices.

We construct **specialized thematic stock indices**, representing the dynamics of longevity sectors and serving as the foundation for the development of **longevity-focused exchange traded funds**. These indices include not only publicly traded corporations, but also financial derivatives, funds, and bonds.

# Stock Market Analysis



To extract value from stock market data, we use conventional econometric models, as well as advanced **artificial intelligence and deep learning tools**.

Our financial analytics is combined with technological evaluation of companies.

Updated in real time, our stock market dataset provides a **concrete, quantifiable and data-driven framework for longevity development hypothesis testing**.

Neural networks with LSTM layers for time series data analysis

Recurrent neural networks to extract complex hidden connections from the data

Cash flow forecasting

GARCH model

Real option analysis, scenario planning

# Why Financial Institutions Need to Monitor Trends in Longevity

An increased interest in longevity has led to the emergence of **new asset management firms** offering **AI- and big data-based** advice, as well as **micro-investment platforms and trading solutions based on social networks**. By designing new solutions and adapting existing products and services to the longevity future, financial services innovators can now greatly improve the financial situation of individuals.

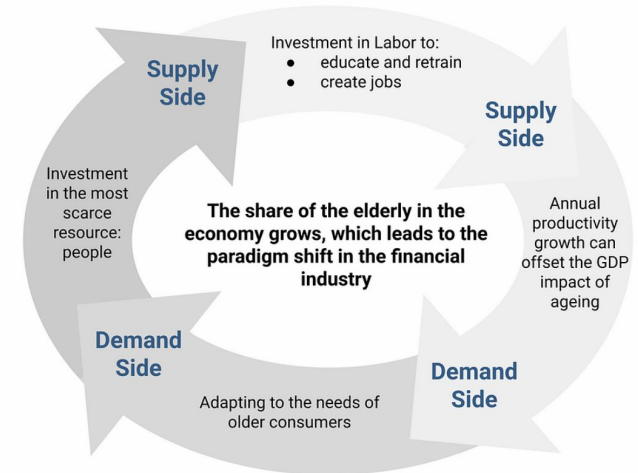
**Longevity Banks** will rely on a number of data-based and predictive models allowing them to determine who is likely to live “longer than expected” and how to serve their financial needs best.

There is a **\$750bn+ opportunity** in pension buyout schemes for insurers. Also, **insurance and reinsurance companies** will be able to provide risk transfer mechanisms for financial institutions (mostly pension funds).

Although increased lifespan poses a **major threat to pension funds, some of them may still be able to turn a profit**. Only pension funds and insurance companies whose business models will take into account the longevity factor will not go under. Therefore, they **should focus on managing longevity-related risks**.

Mortality risk can be used to hedge longevity risk, thus providing insurers with a highly effective way of using insurance subsidiary capital. **AMCs, banks, insurers, reinsurers, banks, and pension funds are poised to benefit from longevity, as long as they can adapt to the upcoming changes**.

## Longevity Offers Opportunities Only to Those Who Can Adapt

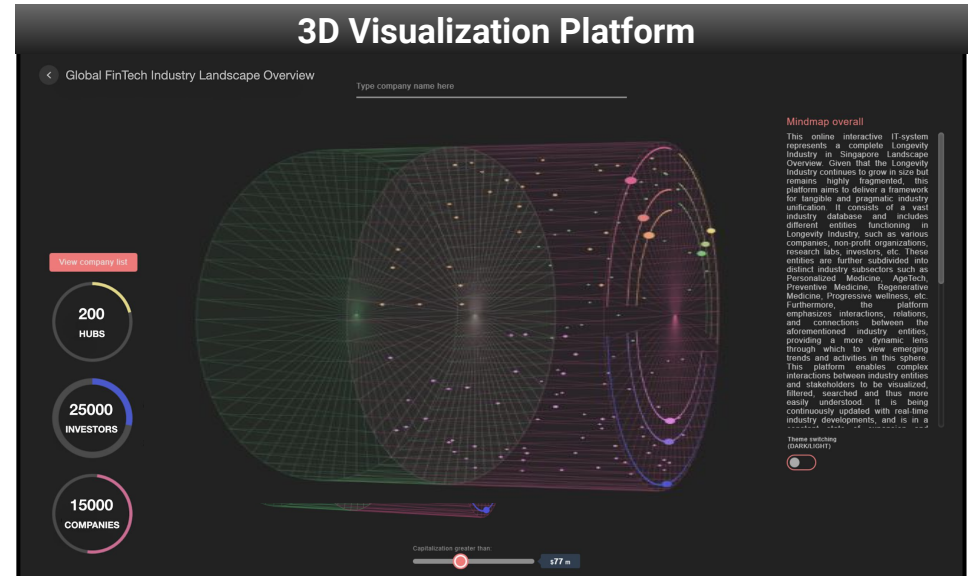
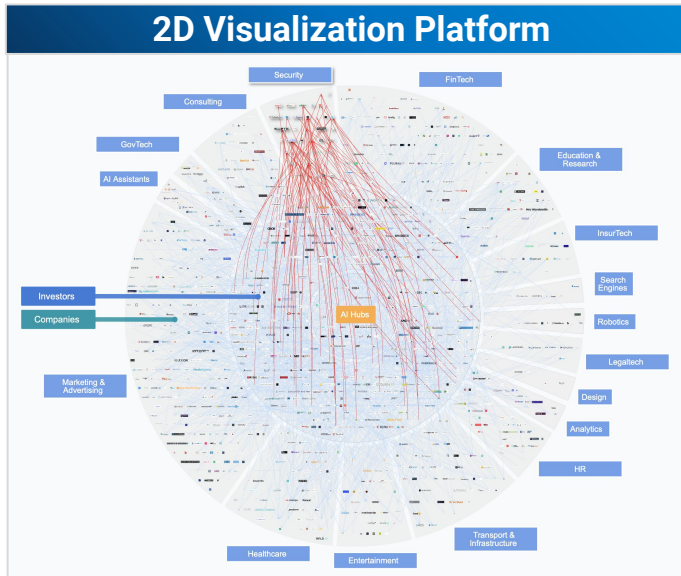


“Giving provides retirees with added purpose. They are generous with their time, experience, and money. Their collective financial and volunteering contributions over the next twenty years are projected to create an \$8 trillion “Longevity Bonus” for the nation.”

~ Bank of America Merrill Lynch Study.

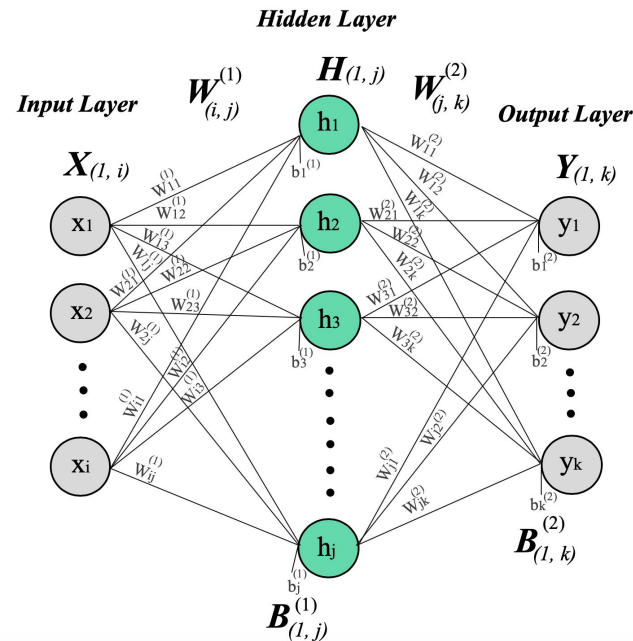
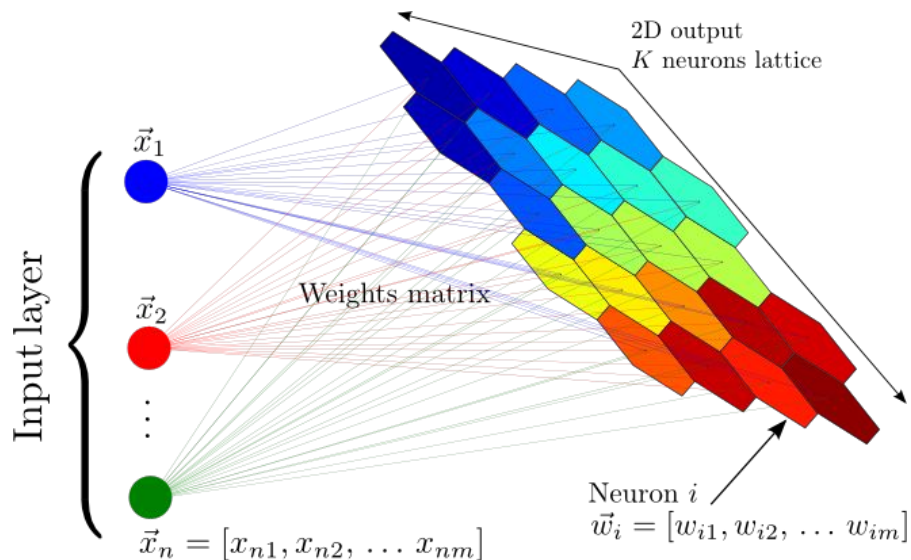
# Real-Time Monitoring of the Longevity Financial Industry

By combining Deep Knowledge Analytics' **robust data modeling, visualization, and interactivity** with Aging Analytics Agency's **unparalleled market expertise, sophisticated multi-dimensional analytical frameworks and algorithmic methods**, the **Longevity Finance Dashboard** can deliver sophisticated market intelligence, make pragmatic forecasting, and do industry benchmarking. To achieve this, it uses multiple specially-designed and specifically-weighted metrics and parameters. By **reporting and monitoring developments in the technological and industrial ecosystems** of the Longevity Financial Industry, it ensures that the collected data is accurate, up-to-date and available 24/7. Using state-of-the-art data analytics and 3D visualization tools, the Dashboard analyzes **market insights, trends, and statistics** to quickly and efficiently extract the necessary information and provide actionable answers.



# Deep Learning for Longevity Finance Analytics

Aging Analytics Agency makes extensive use of deep learning algorithms to extract value from the longevity industry database. Deep neural networks are used to **extrapolate data points, forecast financial indicators, predict quantitative parameters of companies and investors, as well as clusterize and categorize companies**. We finetune our algorithms by adjusting architectures, types of neurons, activation and loss functions, and optimization methods.



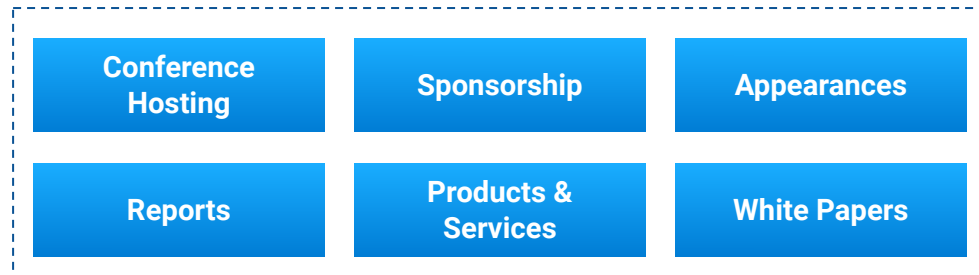


# Continuous Data Feed on 300 Global Financial Institutions

In 2019, Aging Analytics Agency collected a comprehensive set of data on the longevity-focused activities of 150 UK-based financial corporations (**banks, pension funds, insurance and reinsurance companies and asset management firms**). Using this data, we compiled an analytical report called “*Advancing Financial Industry: Longevity / AgeTech / WealthTech*”, which can be downloaded for free from our website.

As part of the effort to further develop its IT segment and use it **as a basis for building the Longevity Finance Dashboard**, Aging Analytics Agency added another **300 financial corporations** from around the globe. The selection criteria we used to create the minimum set of corporations to be included in the dashboard included tangible activities in the longevity sector or demonstrated interest in everything longevity-related.

The dashboard features real-time data feeds on the Longevity-related activities of these corporations, including:



By using our platform, financial institutions (both large and small) can **benefit from having real-time access** to data on the ongoing dynamics in the Longevity Financial Industry. They will also be able to **keep track of the activities of potential competitors, utilize action-based analytics** to reveal key trends and insights, and **identify the best practices** that can be adapted to their business models.

# Benchmarking the Most Market-Ready Longevity Finance Technologies

Trends in longevity stimulate the emergence of new financial technologies. And this, in turn, results in **the emergence of a new generation of fintech companies offering advice based on AI and big data**. These include:

- **AI-advisors** - automated services that use machine-learning algorithms to provide users with advice based on the most profitable investment options, yield targets, user's risk aversion profile, and other variables.
- **Robo-retirement** - another version of AI-advisors that is especially popular in the US. Companies in this category specialize in managing retirement savings.
- **Digital brokers** - online platforms and software tools that make it possible for anyone easily obtain stock market information and make investments.
- **Financial products** designed for investors expecting to live 100 years and beyond.

In the near future, we expect to see a groundbreaking synergy between IT, AI, and traditional banking services designed for and adapted to retirees and seniors. Hopefully, this will lead to the creation of **AgeTech-Longevity banking technology** that will simplify access to banking services, make banks more senior-friendly, and help establish trust and financial security among older customers.

**Using its unique experience in the Longevity Financial Industry, Aging Analytics Agency seeks to make projections and benchmark technologies. We also aim to provide practical recommendations to commercial clients on how they can aggregate, develop, and deploy the most sophisticated longevity-related financial products and services to meet the needs of the Silver Generation.**



Novel financial systems adjusted to increasing healthy life expectancy, including the AgeTech-Longevity bank, the Longevity investment index and hedge fund, and a specialized Longevity stock exchange, **will provide multiple types of Longevity-associated derivatives.** This will spawn **a whole new industry**, whose capitalization could easily exceed the current financial markets.

The emergence of a full-fledged Longevity financial industry will make it possible to **create a Longevity stock exchange that will be dealing with specialized derivatives.** This, in turn, will lead to the appearance of the Longevity Composite Index, which will be similar to the Nasdaq Composite. Thanks to that, investors will be able to provide unlimited liquidity to the Longevity industry, much like it currently does with the real estate industry. This will result in a self-sustaining growth cycle in the Financial Longevity industry whereby the effect of aging on GDP will be repeatedly offset, with the resultant wealth being repeatedly reinvested in technologically reinvigorated human capital.

## Types of Longevity Derivatives



Longevity Bonds

Longevity Forward Contracts

Longevity Options

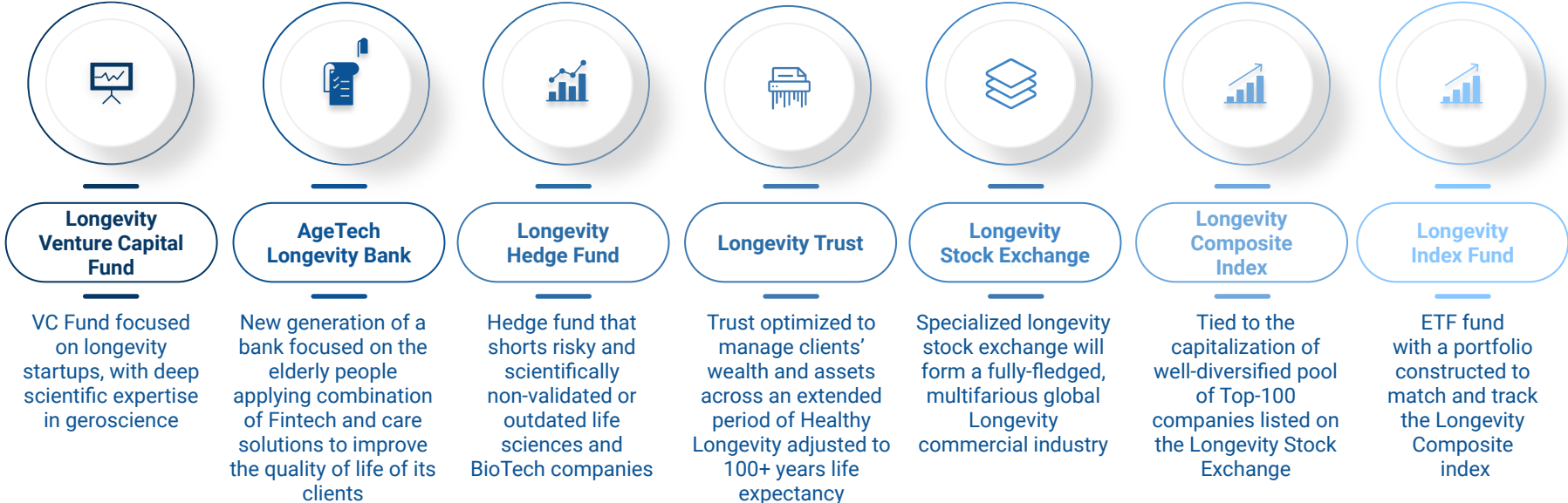
Longevity Swaps

# Longevity Financial Institutions: What Does the Future Hold?

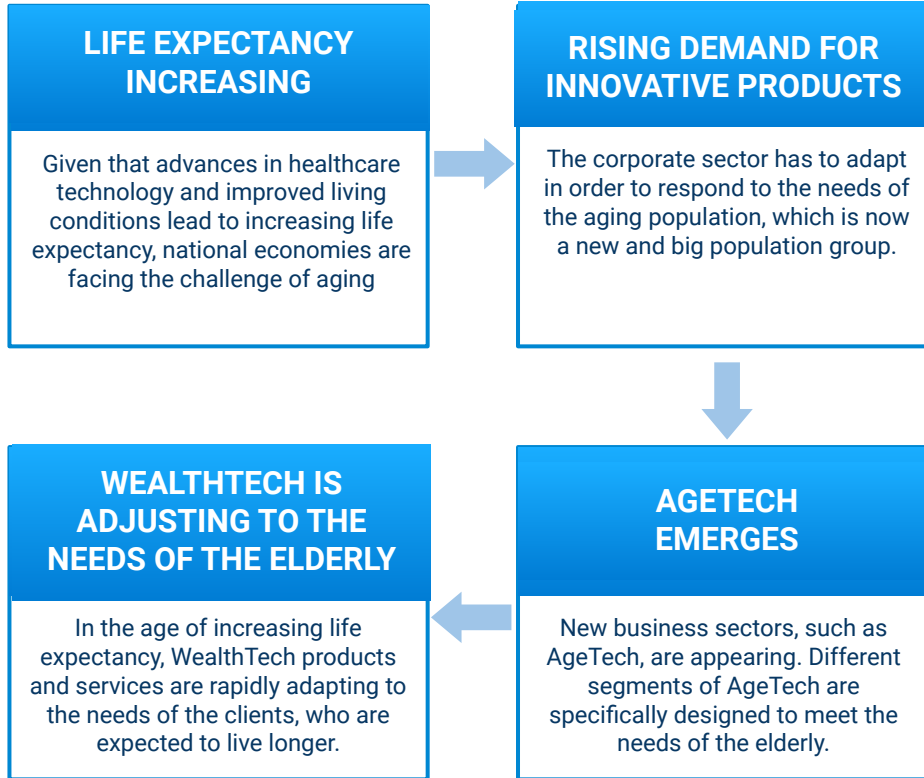
A number of novel financial institutions that could ride the rising tide (e.g. **longevity-focused venture funds, Longevity-AgeTech banks, longevity exchange traded funds, hedge funds**, etc.) is expected to appear and develop in the future. Then, an entire ecosystem can be built and organized into a specialized **stock exchange for Longevity-focused companies** and financial products.

Given that modern financial institutions are not adequately equipped for the arrival of the longevity industry, novel financial tools, organization types, products, services, and analytical approaches will have to be developed. This will make it possible to take full advantage of the advances in the longevity biomedicine and utilize them for giving a boost to the financial sector.

## Evolution of Longevity Financial Industry



# Longevity as the Next Major Opportunity for Financial Institutions



Over the past 100 years, **the financial industry has largely shunned and neglected people in retirement.** This is ironic, given that senior citizens are quickly becoming the largest market segment slated to possess the most purchasing power of any demographic. As of now, we have an entire 7th Continent populated by a whopping 1 billion people aged 60 and over.

By coming up with new solutions and adapting the already existing ones, **financial services innovators can improve the financial situation of these people.** Thus, they can turn a liability into an asset and utilize its untapped market potential.

This year, the global spending power of this demographic is expected to reach \$15 trillion. **Longevity Banks and FinTech 2.0 services can attract people aged 60 and over, including those of them that expect to live to 100 and beyond.** These people recognize Health as New Wealth and are in desperate need of technologies capable of optimizing their wealth management and increasing their healthspan.

In the next few years, **age-friendly FinTech companies and Longevity Banks will develop new financial products** designed for clients who plan to live extra-long lives, while remaining in good health and maintaining financial stability.

# Continuous Data Feed on 500 Global Financial Corporations

## Top-150 Financial Institutions Advancing Financial Industry Longevity / AgeTech / WealthTech



### 40 Pension Funds



### 35 Banks



### 15 Reinsurance Companies



### 30 Insurance Companies



### 30 Asset Management Firms



In 2019 Aging Analytics Agency collected comprehensive data on the Longevity activities of 150 UK financial corporations in its open-access analytical report [“Advancing Financial Industry: Longevity / AgeTech / WealthTech”](#), including banks, pension funds, insurance and reinsurance companies and asset management firms.

As part of the development of the IT-Platform segment that will be used as a basis for building the Longevity Finance Dashboard, Aging Analytics Agency will be extending this list to 500 financial corporations from around the globe with tangible activities, or a publicly-disclosed interest, in the rising Longevity sphere, in order to create the minimum set of corporations to be included in the dashboard.

- The dashboard will feature data feeds on the Longevity-related activities of these corporations, including the launch of new products and services, conference hosting, sponsorship and appearances, reports, white papers and other institutional documents, and other relevant types of information.
- By utilizing this platform, financial institutions (both large and small) can reap the benefits of having an up-to-date and expertly curated feed into the ongoing dynamics of the Longevity Financial Industry, keep close track of the activities of potential competitors, utilize action-based analytics to reveal key trends and insights and to identify best practices that can be on-boarded or adapted for their own specific business models.

# Interest in Longevity From Major Financial Corporations is Rising

## CREDIT SUISSE



Credit Suisse featured Health and Aging as one of four main themes in their 2018 Global MegaTrends Conference

Program of the Forum "Investing in Longevity"

**Julius Bär** **Julius Bär**

**KEY SPEAKER:**  
Mark Winterburn, Senior Investment Adviser, Julius Baer International Limited


**Guest speaker: "5 myths of longevity interventions"**  
by James Peyer, PhD, Apollo Ventures, Hamburg, Germany

**"The Business of Longevity: Landscape, Investment and Financial Projections"**  
by Dmitry Kaminskiy, Deep Knowledge Ventures

Julius Baer held a major forum on the topic of "Investing in Longevity" featuring a keynote presentation by Aging Analytics Agency Founder Dmitry Kaminskiy


**Julius Bär**

EXTENDED LONGEVITY



SHIFTING LIFESTYLES ⏱ 4 min

Do we really want to live forever?



SHIFTING LIFESTYLES ⏱ 3 min

Longevity: How to make the most of the extra years



UBS featured "Living to 150" as one of six major topics in their 2018 Healthcare Summit, featuring a keynote presentation by prominent Longevity entrepreneur Alex Zhavoronkov

**UBS**

UBS Investor Watch

### The century club

The rising prospect of living ten decades

**UBS**

UBS Investor Watch

### 80 is the new 60

Retirement is one word, but **three phases**

UBS also issued a report on the "largest survey of wealth investors in the world to date", concluding: "'Don't let skepticism about living to 100 keep you from planning for it. Life expectancies are rising, and it's a real possibility. In fact globally, nine in 10 investors are already adjusting how they are planning for their life and their legacy."

**CITI GPS**



**DISRUPTIVE INNOVATIONS VI**  
Ten More Things to Stop and Think About

**Anti-Aging Medicines**  
Advancing Health by Turning Back Time **citi**

CitiBank released a landmark report detailing the rise of the Longevity Industry, and highlighting it as one of the quickest-rising sectors being driven by disruptive innovation today.

**ANTI-AGING THERAPIES AND SERVICES MARKET**  
-TRENDS AND GROWTH  
**OPPORTUNITIES, FORECAST TO 2022**

**FROST & SULLIVAN**

Frost and Sullivan also released two prominent reports on the emerging Longevity Industry, and in 2018 created the "Award for Innovation in Artificial Intelligence for Aging Research and Drug Development"

# Longevity-Focused Activities of Major Financial Corporations is Rising



**JPMorgan** has created an international index designed to benchmark and trade longevity risk.



EIB, PartnerRe, and **BNP Paribas** create first longevity hedge



In the report Beyond 100 **Barclays Private Bank** has brought together viewpoints from specialist and leading experts in longevity research and biotechnology, work, housing and the economy.



**Bank of America Merrill Lynch** introduces groundbreaking initiative to empower companies with a deeper understanding of the Longevity Revolution and its impact on employees



**Deutsche Bank** has entered into a longevity swap with the Trustees of the Rolls-Royce Pension Fund. Under the agreement, Deutsche Bank will hedge the longevity exposures of the scheme



**Goldman Sachs** launches tradeable index for longevity and mortality risks

Sources

Euromoney

Bank of America

Business Wire

Professional Pensions

Barclays Private Bank

NextFinance



# Monitoring of Longevity Financial Industry Activity

The Longevity Finance Dashboard will be powered by the integration of Deep Knowledge Analytics' robust data modelling, visualization and interactive IT-Platform architecture capabilities, and Aging Analytics Agency's unparalleled market expertise utilizing sophisticated multi-dimensional analytical frameworks and algorithmic methods that combine hundreds of specially-designed and specifically-weighted metrics and parameters to deliver sophisticated market intelligence, pragmatic forecasting and tangible industry benchmarking.

The dashboard will provide high-speed access to bespoke online reporting and monitoring of the developments in the technological and industrial ecosystems of the Global Longevity Financial Industry, with confidence that the data is highly accurate, available 24/7 and up to date. Market insights, trends and statistics are demystified via state-of-the-art data analytics and 3-D visualization tools to quickly reveal the knowledge buried within the data and to efficiently extract major end-points and provide actionable answers.

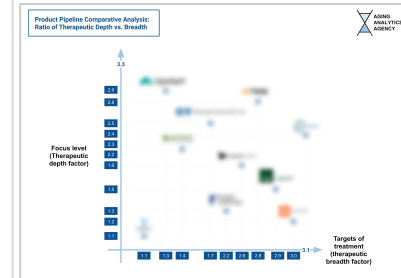
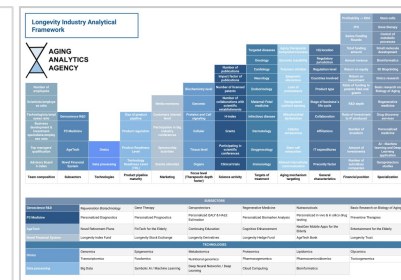
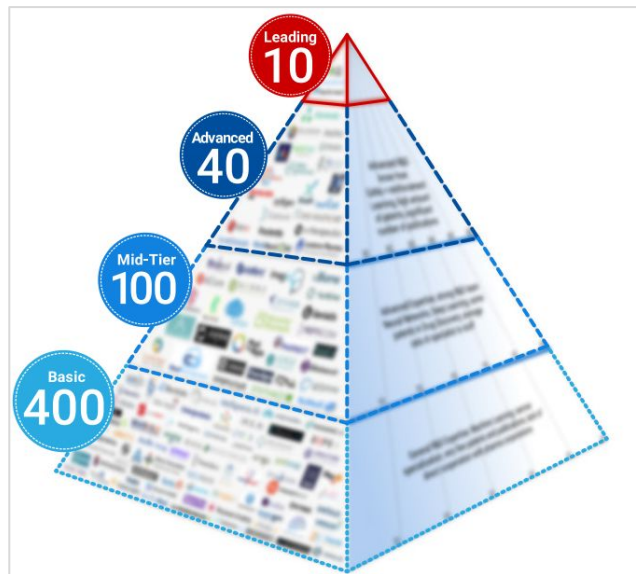


The development of Aging Analytics Agency's 3-D Longevity Industry Analytical Frameworks were necessitated by the unprecedented complexities of the sector, and required in order to obtain a tangible and pragmatic understanding of the industry in order to structure the investment strategy of its parent company's investment arm, Deep Knowledge Ventures, in a relevant way. Aging Analytics Agency has been working over the course of the past five years on designing and validating increasingly quantitative and multidimensional approaches to industry analytics so as to serve as the leading tools and solutions for strategic decision making, with the aim of developing corresponding frameworks for the levels necessitated by the rapidly complexifying nature of the global healthcare and financial system.

# Benchmarking of Most Market-Ready Longevity Finance Technologies

In the last 10 years investment in the FinTech industry has exceeded \$350 billion dollars. During the same period a similar amount of funding was invested in other industries such as AI, healthcare, and aerospace. There have been a number of breakthroughs in these other areas but not in FinTech. The amount of money invested in FinTech has not yielded significant results compared to other domains. FinTech received more investment but accomplished less with it. However, recent advances in the development of practical AI tools are enabling new FinTech solutions.

*Ageing Analytics Agency leverages its unique experience in Longevity Financial Industry Analysis to provide tangible technology benchmarking and forecasting and practical recommendations on how commercial clients can aggregate, develop and deploy the most sophisticated Longevity financial products and services to meet the needs of the Silver Generation.*



Benchmarking of best market-ready Longevity Banking and FinTech AgeTech WealthTech Products and Services

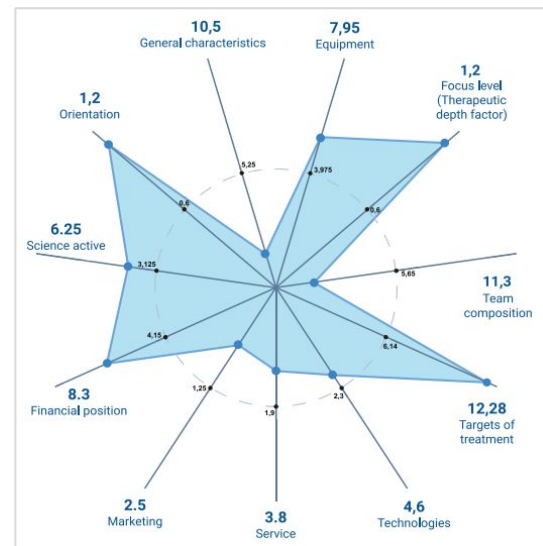
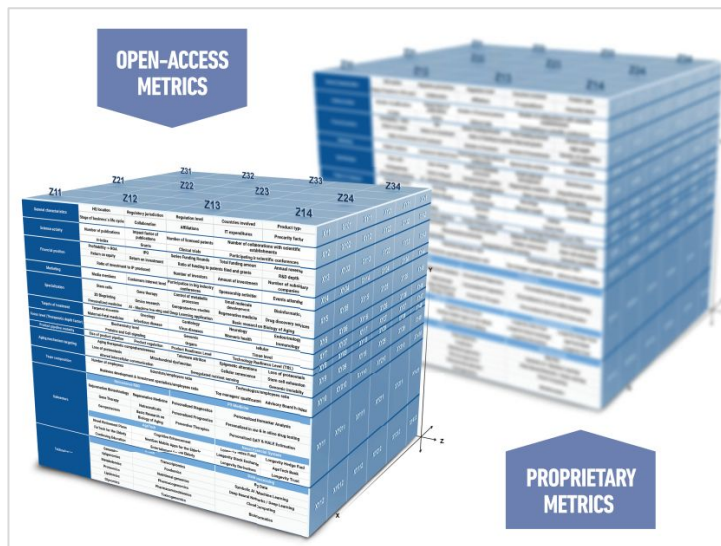
Development of a master plan for adoption of such technologies in your organization, for specific use cases or business processes

Analysis, assessment of options and risks of early-adopting certain technologies to gain a competitive edge in the future






# Powered by the Multidimensional Analytics of Aging Analytics Agency

Aging Analytics Agency has, since its inception in 2013, been applying systematic methodologies to create various types of **Longevity Industry analytical frameworks**.

Since then, the company has continued to improve these comparative analysis systems, both in terms of the specific metrics used to conduct its market studies and the mathematical formulas used to combine them as well as created advanced visualization techniques for making forecasts, rankings and determinations maximally understandable. Aging Analytics Agency has gathered a multidisciplinary team of consultants and analysts which can perform technology evaluation and overall company due diligence to understand the key **strengths, weaknesses, opportunities** and **threats** of Longevity Financial Technologies and Companies.



# Longevity-Focused Competitive Analysis of Major Financial Institutions

Institution	Specialized Longevity Focused Marketing Strategies & Activities (Score out of 100)	Specialized Longevity Focused Financial Instruments (Score out of 100)	Products and Services Tailored to Elderly and Middle Aged Demographic (Score out of 100)	Longevity (100+ Years) Investment and Asset Management Programs (Score out of 100)	Integration of Financial Products and Services with AgeTech/HealthTech Components (Score out of 100)
 BARCLAYS	75.00	85.00	85.00	85.00	85.00
 Prudential	85.00	85.00	87.50	85.00	85.00
 AXA Investment Managers	85.00	87.50	85.00	87.50	85.00
 UBS	85.00	87.50	85.00	85.00	75.00
 Manulife Vitality	87.50	85.00	85.00	85.00	75.00

# Longevity-Focused SWOT Analysis of Major Financial Institutions

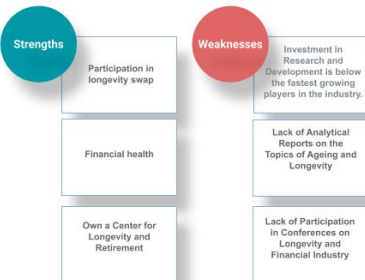
## Aegon N.V.

Aegon N.V. is a multinational life insurance, pensions and asset management company headquartered in The Hague, Netherlands. At the same time, it provides retirement, workplace savings and protection solutions to over two million UK customers.



### Financial Highlights

**\$4.69B** Gross Profit  
**0.16%** Return on Assets (ROA)  
**3.05%** Return on Equity (ROE)  
**3.95%** Profit Margin



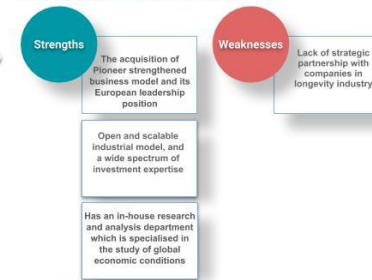
## Amundi

Amundi SA provides investment management services. The Company offers savings, financial instruments, equity trading, credit activities, and investment solutions. Amundi serves customers worldwide.



### Financial Highlights

**EUR 2.6 B** Revenue  
**EUR 1.3 B** EBITDA  
**EUR 1 425 B** Assets under management  
**EUR 0.85 B** Net Profit



# Longevity-Focused SWOT Analysis of Major Financial Institutions

## Artex Risk Solutions, Inc

Artex Risk Solutions, Inc. specializes in the creation and management of insurance and alternative risk transfer solutions globally. Its portfolio of solutions includes insurance and captive management; captive programs ranging from group and single-parent captives to enterprise risk captives, cell captives, and risk retention groups; risk management.



### Financial Highlights Undisclosed

#### Strengths

- Is involved in unconventional approaches for longevity risk transfer
- Awarded 2017 and 2018 Trading Risk Reinsurance Facilitator of the Year

#### Weaknesses

- Lack of analytical reports and conferences on the topics of Ageing and Longevity
- Still does not use QALY, HALE for the evaluation of future assets volume in retirement schemes and life-insurance

## Aviva

Aviva plc is the largest UK insurance company with over 15 million customers in the UK. The company is a composite insurer, meaning that it offers a big range of insurance and savings products – from car, home and health insurance to pensions and investments.



### Financial Highlights

**£22.3B** Revenue

**0.27%** Return on Assets (ROA) - 5 Yr. Avg.

**5.7%** Return on Equity (ROE) - 5 Yr. Avg.

**3.8%** Operating margin - 5 Yr. Avg.

#### Strengths

- Aviva does recognize the importance of HALE, QALY in its publications and funded studies
- Aviva has a strong long-term forecasting division, which could be re-focused for Longevity Finance Forecasting
- Aviva has participated in longevity risk exposure

#### Weaknesses

- Aviva had a sharp decline in incomes in the last 3 years

# Evolution of FinTech 2.0

**FinTech 2.0 =**

**AI + FinTech + LegalTech + RegTech + MarTech + HealthTech**

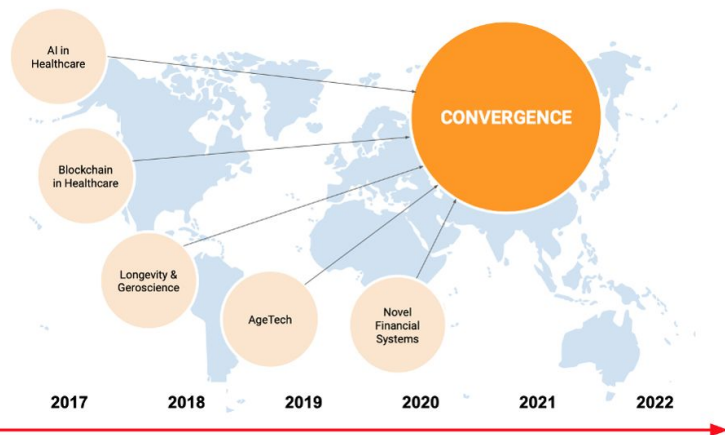
Both traditional banking and the global Financial Industry is in a state of rapid evolution, and Longevity is at the heart of that transformation, accelerated by the synergetic intersection of financial technologies including:

IT-technologies

Wealth Management

Traditional Banking Services

Artificial Intelligence



*“The real FinTech industry (built on AI and Data Science, willing and capable to on-board innovations as soon as they are created, constantly staying ahead of the technological curve) has been blurred and delayed by HypeTech, and by overvalued companies who care more about integrating the latest advances in superficial marketing to be on the first wave of Hype, rather than the actual latest tech advances in the Data Science technologies and their applications for FinTech and WealthTech.”*

- Dmitry Kaminskiy in the book “Longevity Industry 1.0: Defining the Biggest and Most Complex Industry in Human History”

*“As increasing numbers of high-net-worth individuals (HWN) and regular middle-class individuals age, financial institutions enhance and extend their clients’ health spans and wealth spans in equal measure. Modern challenger banks are chasing income from the middle-aged and younger generations, missing a \$15 trillion market opportunity, whilst banks like HSBC, UBS and Barclays are making their first steps in the age-tech industry. It’s an outdated approach to challenge traditional banks, and the future is in synergetic cooperation. Challenger banks should challenge themselves rather than challenging traditional banks. New technologies in finance have unlimited opportunities, and yet many of these opportunities have not surfaced despite the huge, and illogically disproportionate, amount of investment in the sector.”*

- Sergey Balasanyan in “Challenger Longevity Bank positions itself for the silver generation” (FinTech Futures, 2020)

# Unmatched Expertise on Intersection of Longevity and Finance

As a strategic partner and major source of data and analytics for [Longevity Bank](#), [Longevity FinTech Company](#), [Longevity.Capital](#) and its own parent company, [Deep Knowledge Group](#), Aging Analytics Agency is working on the frontlines of the coming shift toward Longevity FinTech and the rise of FinTech 2.0, and in an unparalleled position to offer strategic guidance, SWOT analysis and competitive landscaping, technological benchmarking and forecasting, and strategic consultancy services on the full scope of Longevity Financial Industry activities and technologies.

Our company is the world-leader in proprietary analytics and expertise on how modern, progressive financial institutions (including both FinTech companies and traditional banks) can efficiently and cost-effectively aggregate the best AI-empowered Longevity Financial Technologies, develop the most sophisticated silver generation-focused product services and interfaces, and deploy the cutting edge of Longevity FinTech and integrated AgeTech WealthTech solutions in order to tap into the massive market of clients 50 - 100+ who recognize Health as New Wealth, and the urgent need to maximize their wealthspans alongside their healthspans to achieve financial wellness and security in the new era of 100+ year lifespans and Healthy Human Longevity.

The future of finance is coming, and your success depends on the depth and quality of the analytics underlying your business models and product offerings.

Forbes

Billionaires

Innovation

Leadership

Money

Business

6,786 views | Jan 20, 2020, 2:19 pm

## AI Will Give Rise To FinTech 2.0 And Longevity Banks



**Margaretta Colangelo** Contributor

**COGNITIVE WORLD** Contributor Group

AI

*Co-founder and Managing Partner at Deep Knowledge Ventures and Longevity Capital*

## FINTECH FUTURES

### Challenger Longevity Bank positions itself for the silver generation

**EXCLUSIVE:** Another UK challenger bank is on the horizon, set to launch in the UK and Switzerland sometime this year - Longevity Bank. It intends to tap the "silver generation" - that is, those over 60.

Backed by Hong Kong-based venture capital firm Deep Knowledge Ventures, the neobank intends to expand across Europe, Singapore, Japan and the US by 2022.

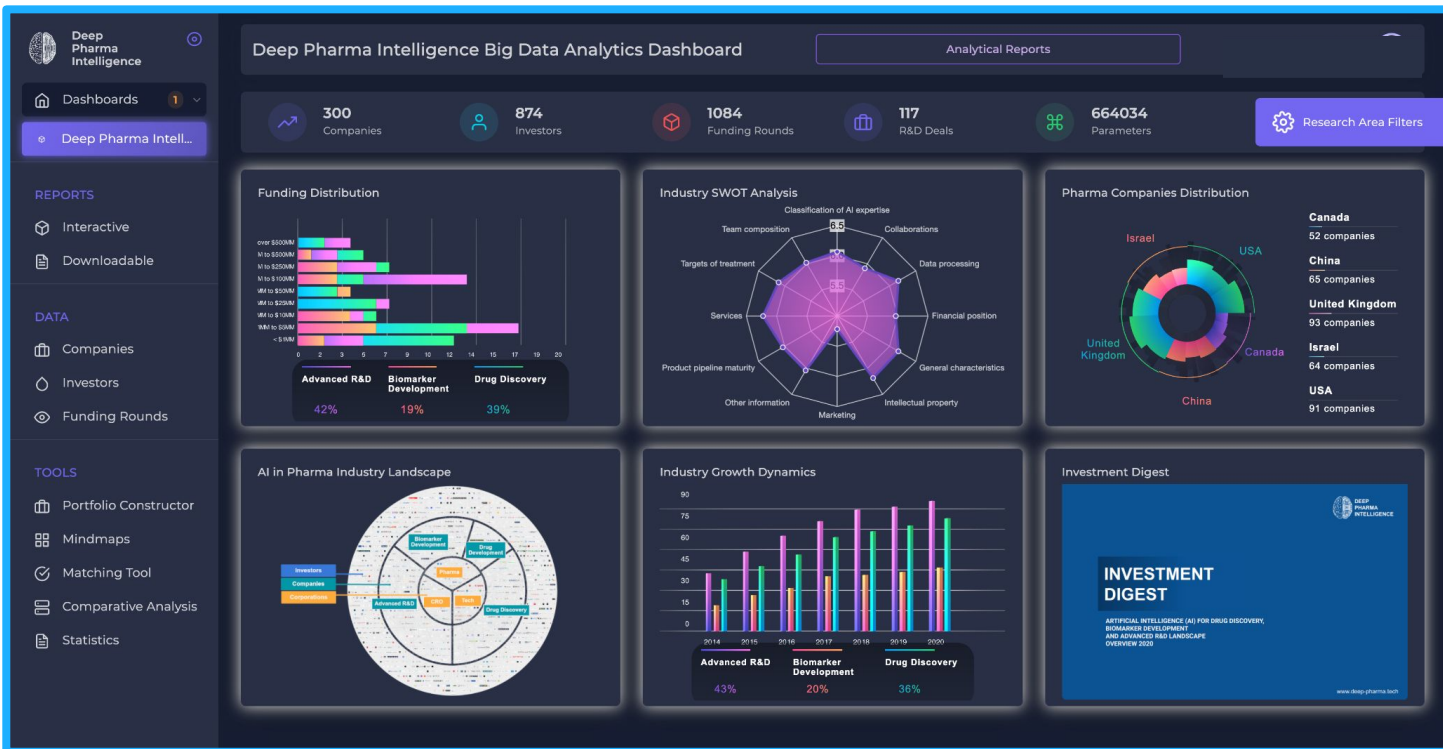


# Big Pharma Big Data Analytics Dashboard

Deep Pharma Intelligence Big Data Analytics Dashboard is a powerful tool for investors

Deep Pharma Intelligence Big Data Analytics Dashboard is one of the analytical platforms developed by Deep Knowledge Group.

Its main goal is to provide Big Data-based analytical insights, as well as being a Longevity-focused database for institutional and non-institutional investors. It also allows creation of different types of investment portfolios and assesses them with built-in tools provided by the platform.



# Deep Pharma Intelligence: Big Data Analytics Dashboard

## Dashboard Overview

Deep Pharma Intelligence is building a sophisticated cloud-based engine for advanced market and business intelligence in the pharmaceutical and healthcare industries. It includes a data mining engine, infrastructure for expert data curation and advanced visualization dashboards, including mindmaps, knowledge graphs and 3-dimensional visualizations.

Matching tool	Machine learning for database extrapolation	Dynamic SWOT analysis depicting evolution of a company
Companies database	Machine learning and deep neural networks for companies clusterization	Interactive industry mindmaps
Investors database	Machine learning for financial indicators predictions	Real-time financial data analytics platform for AI in pharma corporations
Comparative quantified analysis	Interactive AI-based scenario analysis and financial planning	AI in pharma financial instruments analytics

## Commercial Value

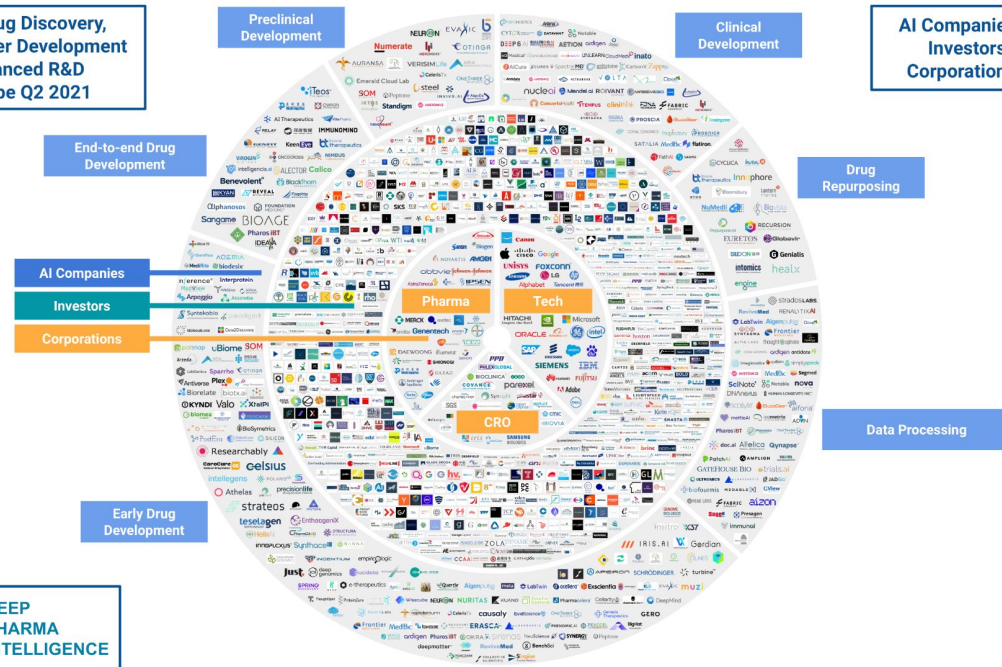
- Data-driven insights about emerging areas in the fields of medical research and technology, including pharmaceuticals, BioTech, medical devices and HealthcareTech industries.
- Investment analytics and actionable insights about primary and secondary markets.
- SWOT analysis of the most promising entities and technologies, providing a clear view of opportunities and risks.
- Identification of growth opportunities, including partnerships, technology deals and transaction prospects.
- Competitive intelligence.
- Business and technical due diligence and more.

## Who Can Benefit

- Investment institutions, funds, investment banks, family offices.
- Private and public companies in the Pharma/BioTech space.
- Research institutions, universities.
- Technology vendors and contract research organizations.
- Startup hubs, accelerators.
- Consulting companies and agencies.

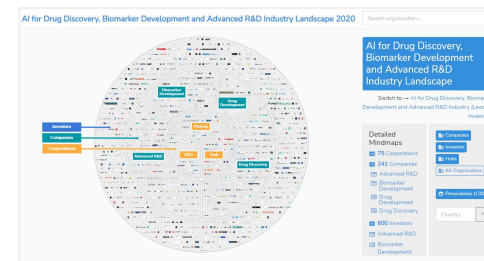
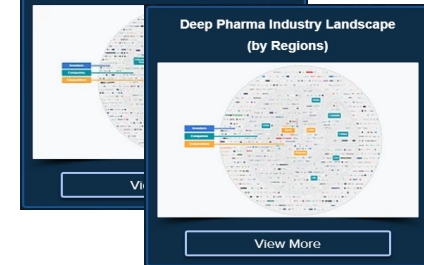
# Deep Pharma Intelligence: Interactive MindMaps

AI for Drug Discovery, Biomarker Development and Advanced R&D Landscape Q2 2021



AI Companies - 300  
Investors - 880+  
Corporations - 100

Deep Pharma Industry Landscape  
(by Sub-Sectors)



This **online interactive IT-system** uses advanced modes of **data aggregation, structuring, filtering and visualization** to deliver a deeper, more comprehensive understanding of **Industry Landscape** than was ever previously attainable. It allows for complex interactions between industry entities and stakeholders to be visualized, filtered, researched and more easily understood, providing a more dynamic lens for viewing emerging trends.



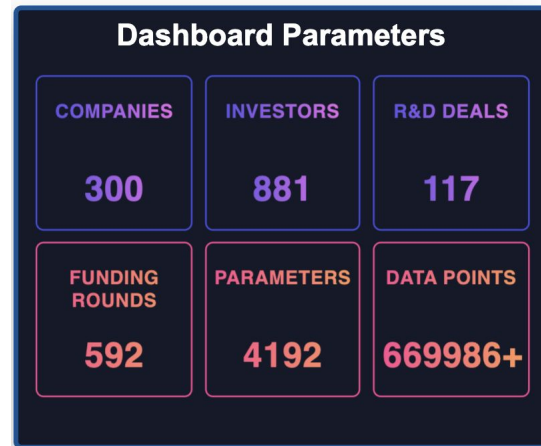
# AI for Drug Discovery: Advanced Vizualization Prototype



At Deep Knowledge Group we believe in **the power of data**. But for the data to translate its dominance into practical utility, it is essential to present data in the right way so that it can tell a story about markets and trends and point to a unique growth opportunity or investment prospects.

## Our visualization methods include

- 2D and 3D data visualization charts
- Knowledge graphs
- Multiparametric SWOT analysis charts
- Mind maps, Treemaps
- Network Diagrams
- Trends charts and heatmaps
- Filters and sorting tools



We care about collecting comprehensive data, but we also care about presenting it the right way to enhance our **visualization expertise** constantly.

As the amount of information we use in our analytics grows exponentially, information visualization becomes increasingly essential.

# Longevity Governance Dashboard

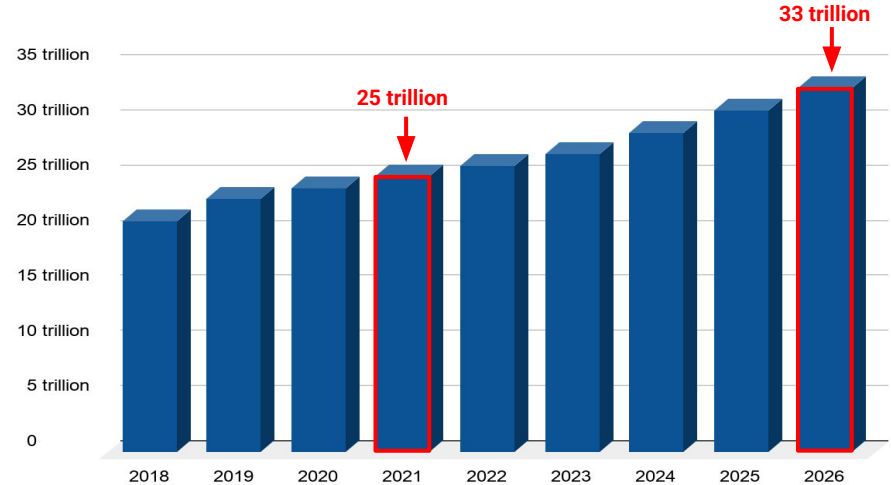
# Longevity Governance Analytics

## About Longevity Governance Big Data Analytics Dashboard

**Longevity governance analytics dashboard developed by Aging Analytics Agency (AAA)** is aimed at delivering to **strategic decision-makers across** the private sector, global investment community, financial industry, governance and policy ecosystem access to **Big Data analytics and visualization, market intelligence, competitive analysis, technology and policy benchmarking, SWOT analysis, practical recommendations and other strategic tool sets** capable of handling the unprecedented complexity and multidimensionality of the full-scope Global Longevity public and private sector ecosystem.

The project is dedicated to offering **tangible and practical recommendations tuned to the specifics of individual countries**, providing the necessary set of tools **to allow countries currently leading the international Healthy Longevity race to maintain and improve their current standing.**

## World Longevity Economy Size Projections, US\$




This analytics can deliver value to governments to enhance healthcare system in their countries

### Government Agencies, Healthcare, Economy & Industrial Development Ministries, & International Policy Organizations

- Recommendation packs tuned to the specifics of individual countries;
- Analytics & Benchmarking 150 countries;
- Industrial strategies to improve current position in Healthy Longevity;
- Advanced IT-solutions;
- Modernization advises.

# Longevity Governance Big Data Analytics Dashboard



AGING ANALYTICS AGENCY

Dashboards 1

Longevity Governa...

REPORTS

Interactive


Downloadable

TOOLS

Mindmaps

### Longevity Governance Big Data Analytics Dashboard

Interactive Report

Analyst 

100 Dynamic Charts

50 SWOT Analysis Profiles

50 Regions

6 Layers of Framework

240 Parameters

12000 Data Points

#### Longevity Progressivness 3D Visualization

Demography, Society, Health and Healthcare



Country	Demography	Ecology	Economy	Government care	Government policy	Health Status	Society	Longevity Progressive
Switzerland	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
New Zealand	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Singapore	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
USA	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Israel	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

#### Longevity Progressivness Benchmarking Charts

Argentina



Category	Value
Demography	0.8
Ecology	0.6
Economy	0.4
Government care	0.2
Government policy	0.2
Health Status	0.2
Society	0.2
Longevity Progressive	0.2

#### National Healthy Longevity Interactive MindMaps



#### Recommendations for Argentina

Demography

Ecology

Economy

Government care

# Database Scope and Size

## Entities

150+ countries

400 regions

50+ development programs

1000 leaders

## Data Points

12 000 data points

240 parameters

5 vectors

15 subvectors

## Areas of Assessment

Pension system

Healthcare

Wellness

Technology

## Data Types

3 types of entities

11 subtypes of entities

8 data types

6 data layers

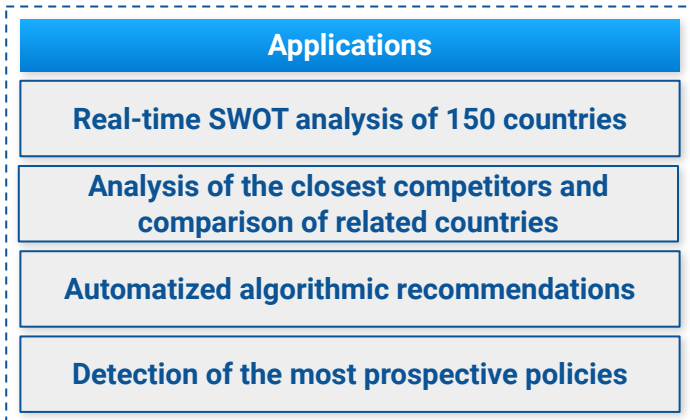
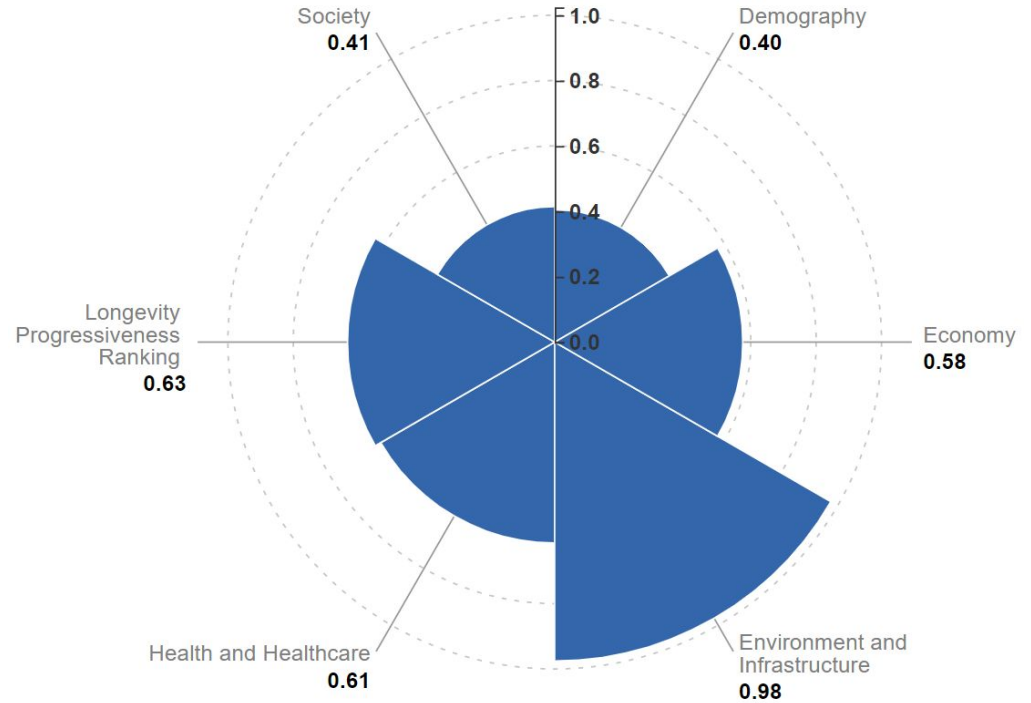


# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Aging Analytics Agency offers a state-of-the-art interactive online AI-based **SWOT analysis system** covering more than 150 countries.

The product allows the governments to conduct initial data-driven competitive analysis **instantly, automatically, and holistically** by comparing 200-300 data points for each country combined in the 10-20 vectors of national longevity development.

The results of the analysis are represented in the easily perceived form of 2-dimensional and 3-dimensional radar charts.

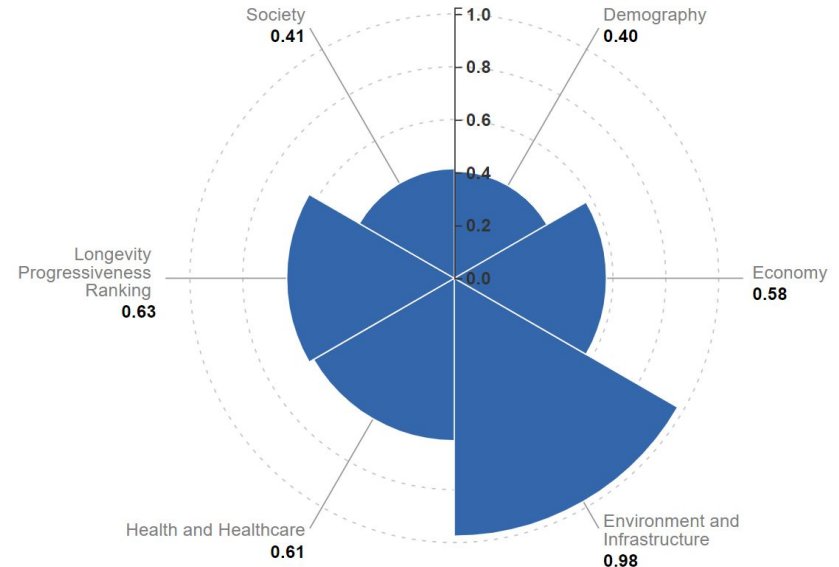


# Multiparametric Assessment Analysis (Using Big Data Analytics Platform)

Automated SWOT analysis system allows to replace long, resource-requiring, manual, and unsystematic process of competitive analysis and public policy development by a real-time available product extracting insights from **the largest in the world longevity industry database** with the help of **deep learning algorithms and multidimensional polynomial formulas** calibrated by combining **expert opinions with big data analysis**.

This enables the conduct of public policy analysis, which is **faster, more precise, and cheaper** simultaneously, since it is being done automatically, permanently, without essential human interaction, and using more data points.

Database, AI and ML algorithms overview	
Parameters	240 parameters with appropriate weights combined into 5 vectors
Data points	12 000 data points which are being updated permanently
Algorithms	Deep neural networks, polynomial formulas with mathematical transformations, regression models
Data aggregation	Automatized parsing, extrapolation using machine learning, feedback from companies

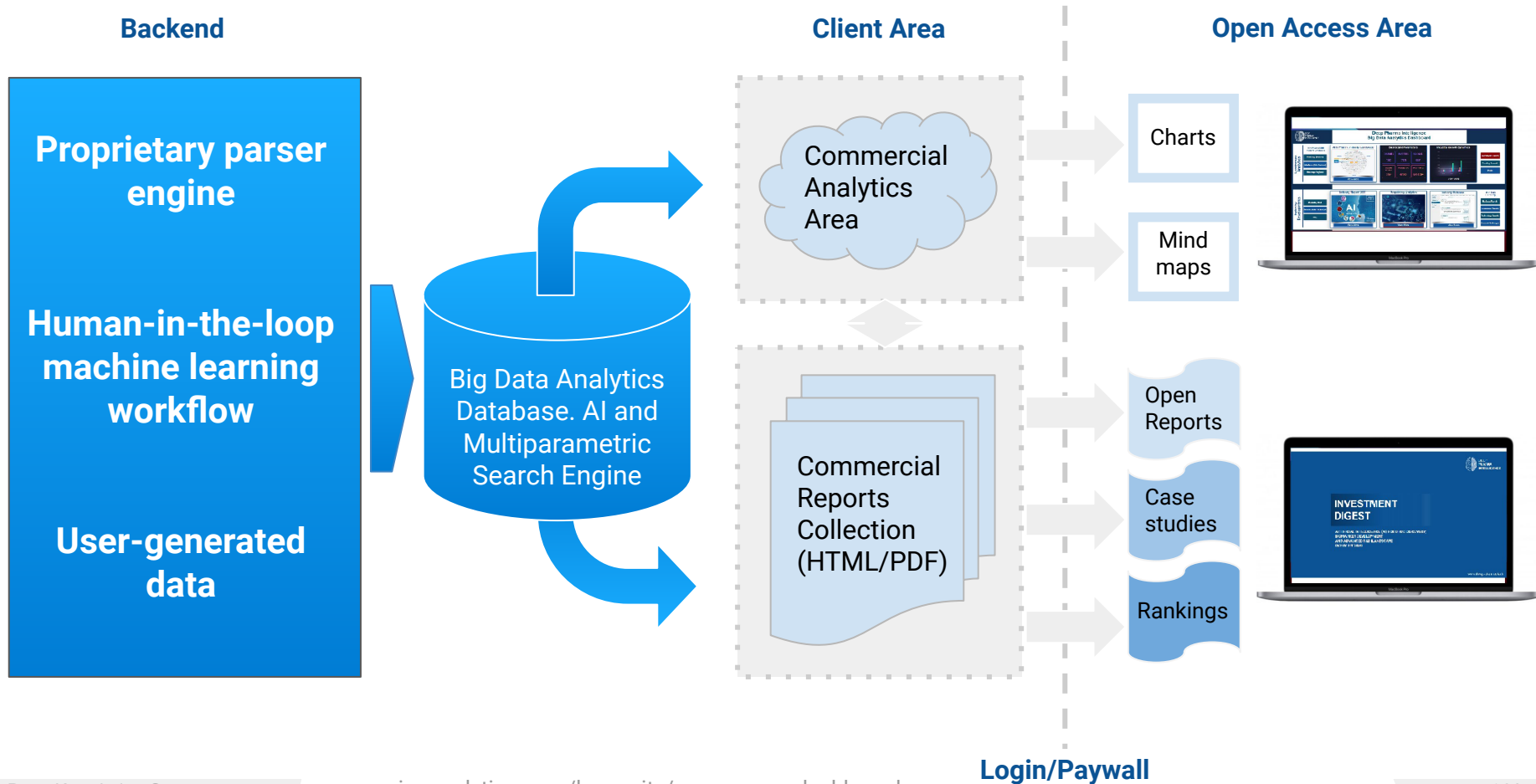


# Our Technologies

The technologies (AI, ML, algorithms, data aggregation, mathematical transformations) that are applied for each of our products are listed below.

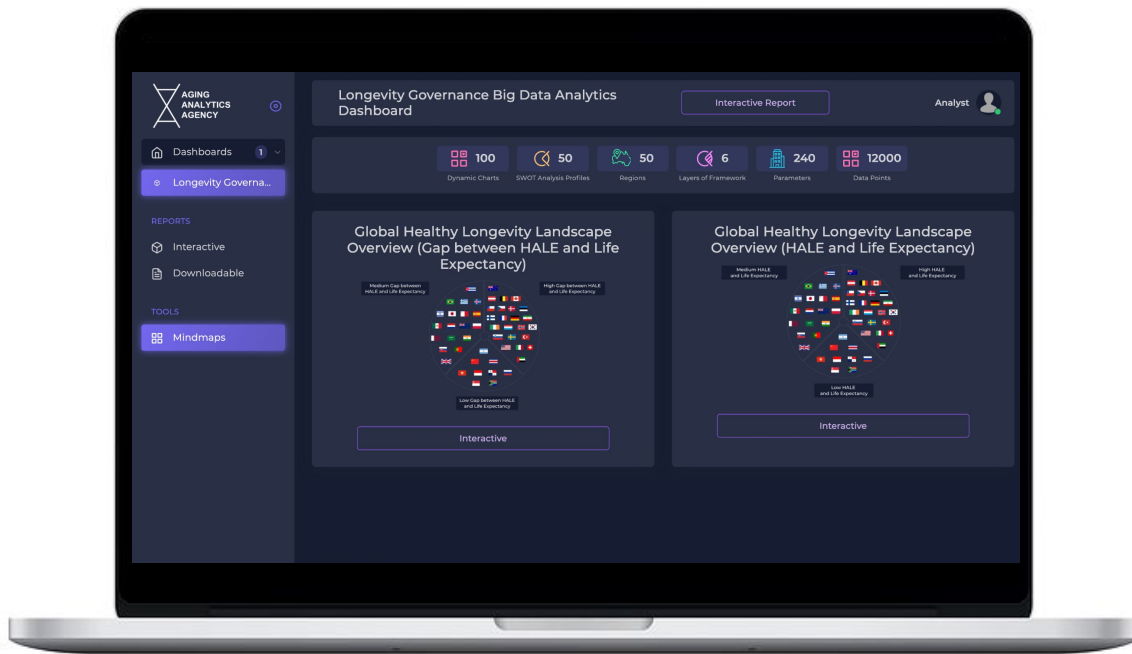
SWOT analysis	Data aggregation	Model creation
Polynomial formulas, multidimensional vector spaces	Data extrapolation through regressions	Factor analysis of LE-HALE gap determinants (multiple regression)
Mathematical transformations: logarithmic, exponential, parabolic, multiplicative	Data extrapolation through deep neural networks	Analysis of variance of major longevity parameters across groups of countries (ANOVA)
Business development harmonization analysis: definite integrals, standard deviation	Natural language processing for tag cloud creation	Defining leading countries in longevity governance (ranking)
Variance-covariance analysis of the parameters of the countries	Data parsing	Estimation of relationships between metrics (intraclass correlation)
Linear algebra	Deep neural networks for data structuring	Assessment of effectiveness of healthcare systems

# Big Data Analytics Platform at a Glance



# Longevity Governance Dashboard: Main Features

The Longevity Governance Dashboard applies big data analysis to **identify social policy, healthcare, medical, financial and socioeconomic factors** having the greatest effect on the gap between life expectancy at birth and Health-Adjusted Life Expectancy (HALE) for 150 regions.



The dashboard focuses on **identifying the factors and practices behind certain regions' success** in maintaining high National Health Longevity, and a low gap between Health-Adjusted Life Expectancy (HALE) and unadjusted Life Expectancy.

It utilizes the results of its region-specific analysis to **offer tangible and practical recommendations** tuned to the specifics of **individual territories**, providing the necessary set of tools to enable national governments, individual economy, healthcare and industrial development industries, international policy organizations and other responsible stakeholders to **formulate and implement policies and development strategies capable of transforming the challenge of aging into the opportunity** of Healthy Longevity for the mutual benefit of their citizens and their economy.

# Longevity Governance Dashboard: Major Use Cases

## Government Agencies, Healthcare, Economy & Industrial Development Ministries, & International Policy Organizations

- The Longevity Governance Dashboard delivers access to continuous monitoring of the specific governmental policy activities directly impacting both National Healthy Longevity and Longevity Industrialization, and to consistently track and analyze data points related to government-led Longevity Development initiatives.
- Applies **big data analysis** to identify social policy, healthcare, medical, financial and socioeconomic **factors** with the greatest effect on the **gap** between life expectancy and **Health-Adjusted Life Expectancy (HALE)** for 100 regions.
- Identifies factors and practices behind certain regions' success in maintaining a high degree of **National Healthy Longevity** and a low gap between HALE and Life Expectancy
- Provides **tangible** and **practical recommendations** tuned to the specifics of individual countries, providing the necessary set of tools to allow countries currently leading the international Healthy Longevity race to **maintain** and **improve** their current standing.
- Features region-specific **recommendation packs** to enable governments currently lagging behind others to reduce their HALE gap and improve their comparative global standing, transforming the deficit and challenge of the silver tsunami into the **asset** and **opportunity** of Healthy Longevity for the mutual benefit of their citizens and their economy.

Longevity Governance	Recommendation Packs	Industrial Strategies	Precision Health
	Advanced IT-Solutions	Analytics & Benchmarking	Modernization

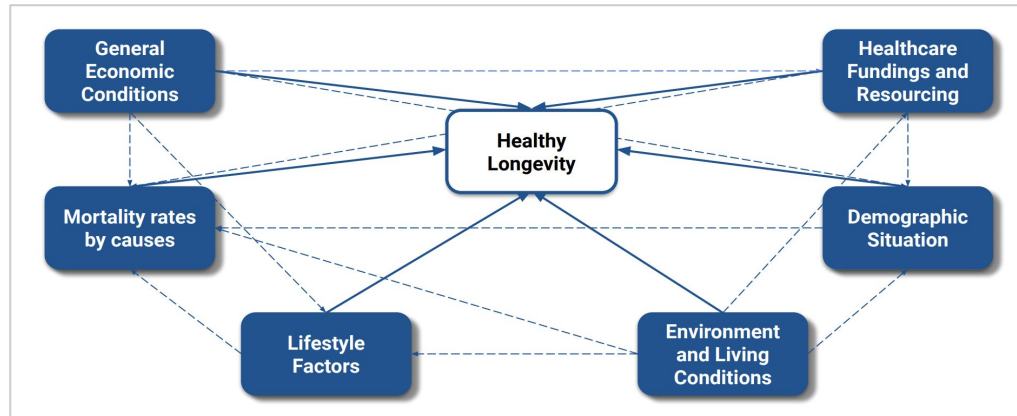
# Analytical Precedents: Big Data Analysis of Global Longevity Governance

**“Global Longevity Governance Landscape: 50 Countries Big Data Comparative Analysis of Longevity Progressiveness”** is a 540-page analytical case study featuring a sophisticated multidimensional big data analytics that is used to provide intelligible and fact-driven benchmarking of 50 nations in relation to levels of Healthy Longevity, as measured by Health-Adjusted Life Expectancy (HALE), their current gaps between HALE and unadjusted life expectancy, their current levels of success in growing and maintaining National Healthy Longevity and dealing with the issue of aging, and tangible policy recommendations on how to either maintain or improve their standing and optimize their National Healthy Longevity.

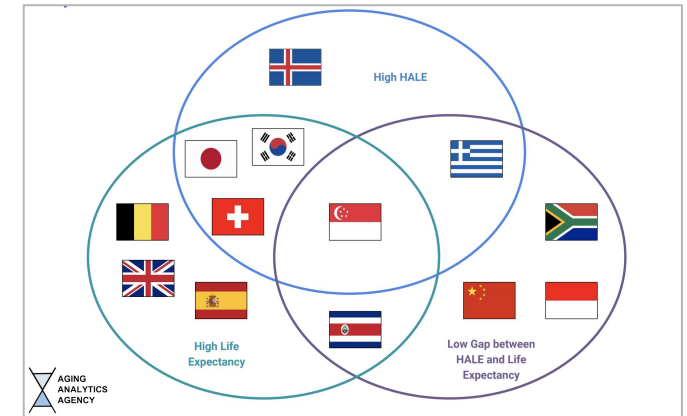


# Key Topics for Analysis and Practical Recommendations

- What specific features of healthcare systems, socio-economic conditions, environmental factors affect public health the most?
- How does the impact of such factors differ across countries?
- What constellation of factors contributes the most to Healthy Longevity?
- Which factors are the main drivers of health-adjusted life expectancy and disability-adjusted life years?
- What countries are leaders in Longevity governance?
- Why do disproportionate healthcare expenditures in the United States contribute to poor healthcare system performance and a decline in overall life expectancy in recent years?
- Why is the healthcare system in Singapore considered as one of the most efficient in the world?
- What can be done to improve National Healthy Longevity in each country globally?



Healthy Longevity Determining Factors



Health-Adjusted Life Expectancy Specification Framework



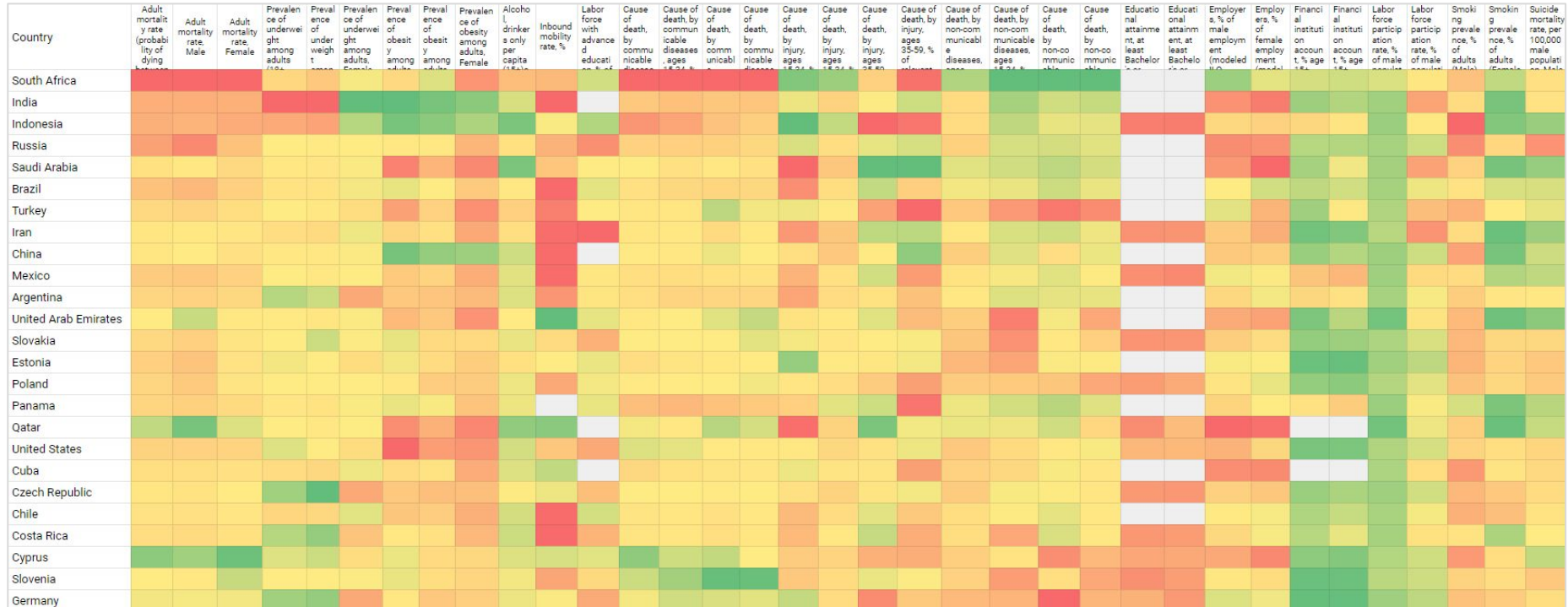
# Longevity Governance Dashboard: Regional Specification

**50 Regions** were analysed of levels of their **Longevity Progressiveness** and presented in Global Longevity Governance Landscape report as well as they will appear in Longevity Governance Dashboard.

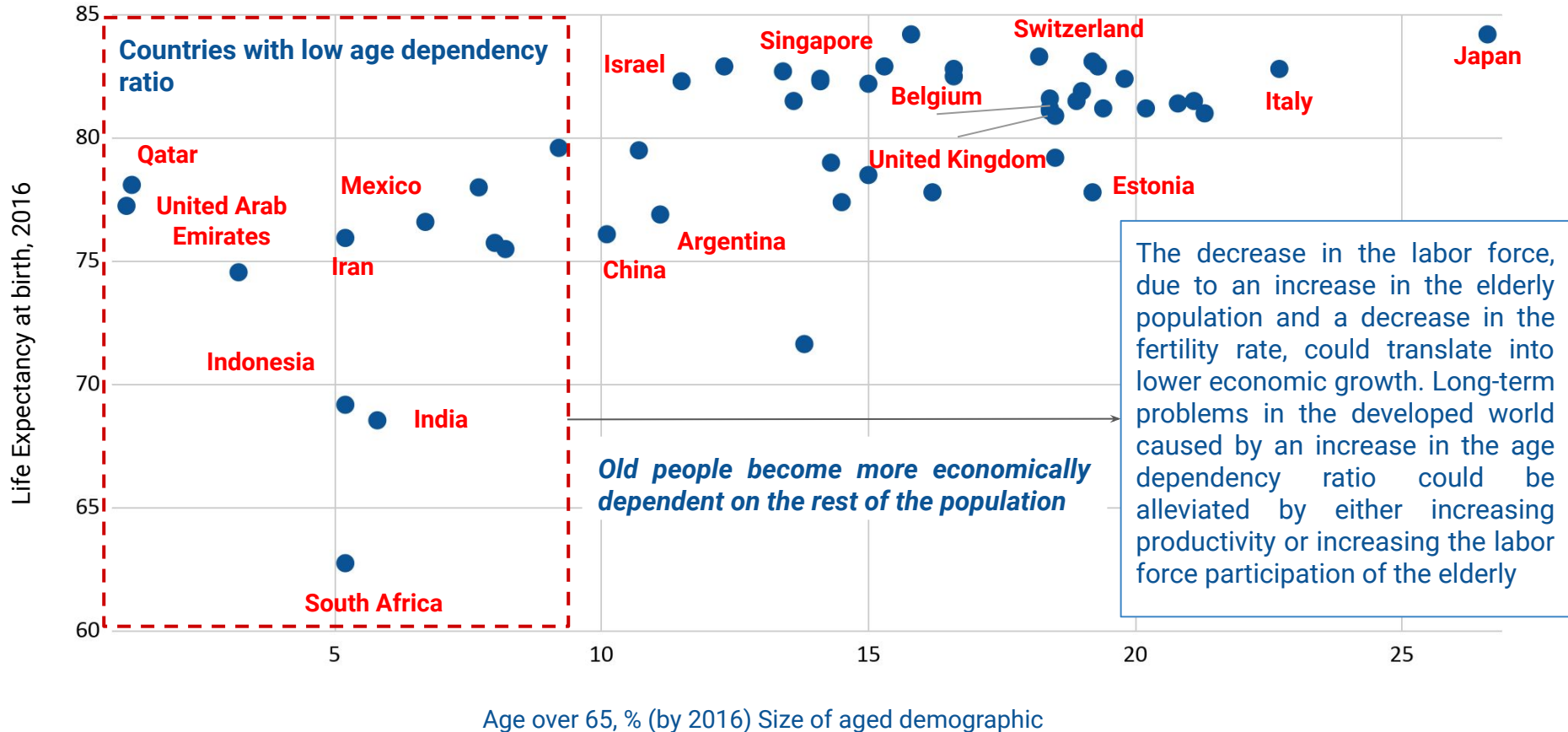
1	Argentina	13	Estonia	26	Japan	39	Saudi Arabia
2	Australia	14	Finland	27	Luxembourg	40	Singapore
3	Austria	15	France	28	Malta	41	Slovakia
4	Belgium	16	Germany	29	Mexico	42	Slovenia
5	Brazil	17	Greece	30	Netherlands	43	South Africa
6	Canda	18	Hong-Kong, SAR	31	New Zealand	44	Spain
7	Chile	19	Iceland	32	Norway	45	Sweden
8	China	20	India	33	Panama	46	Switzerland
9	Costa Rica	21	Indonesia	34	Poland	47	Turkey
10	Cuba	22	Iran	35	Portugal	48	United Arab Emirates
11	Czech Republic	23	Ireland	36	Qatar	49	United Kingdom
12	Denmark	24	Israel	37	Republic of Korea	50	United States of America
		25	Italy	38	Russian Federation		

# Longevity Governance Dashboard Prototype

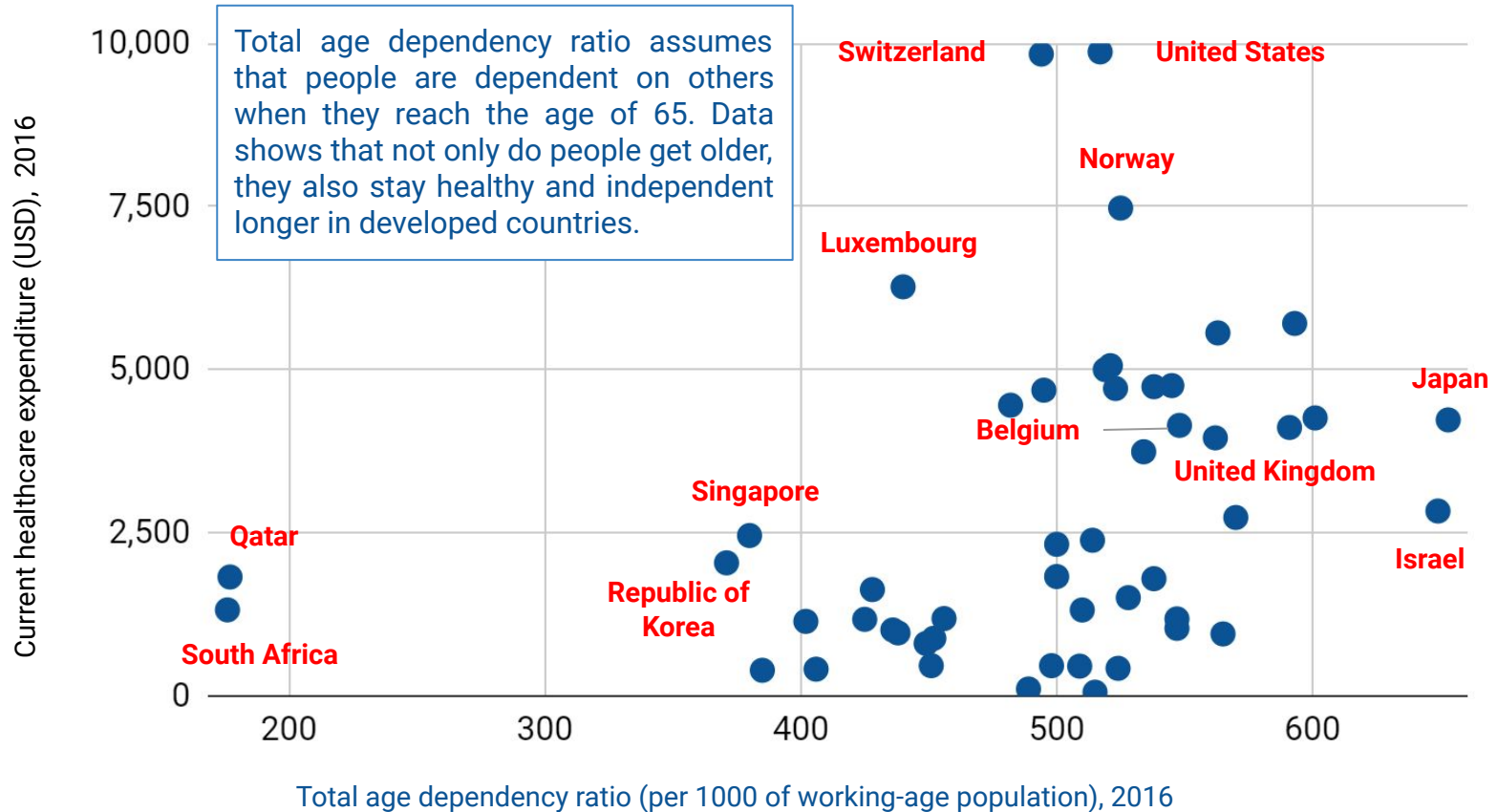
To derive the interconnection between metrics and classify countries into groups, patterns recognition is based on a comparison of 240 parameters across regions according to their distribution and variation.



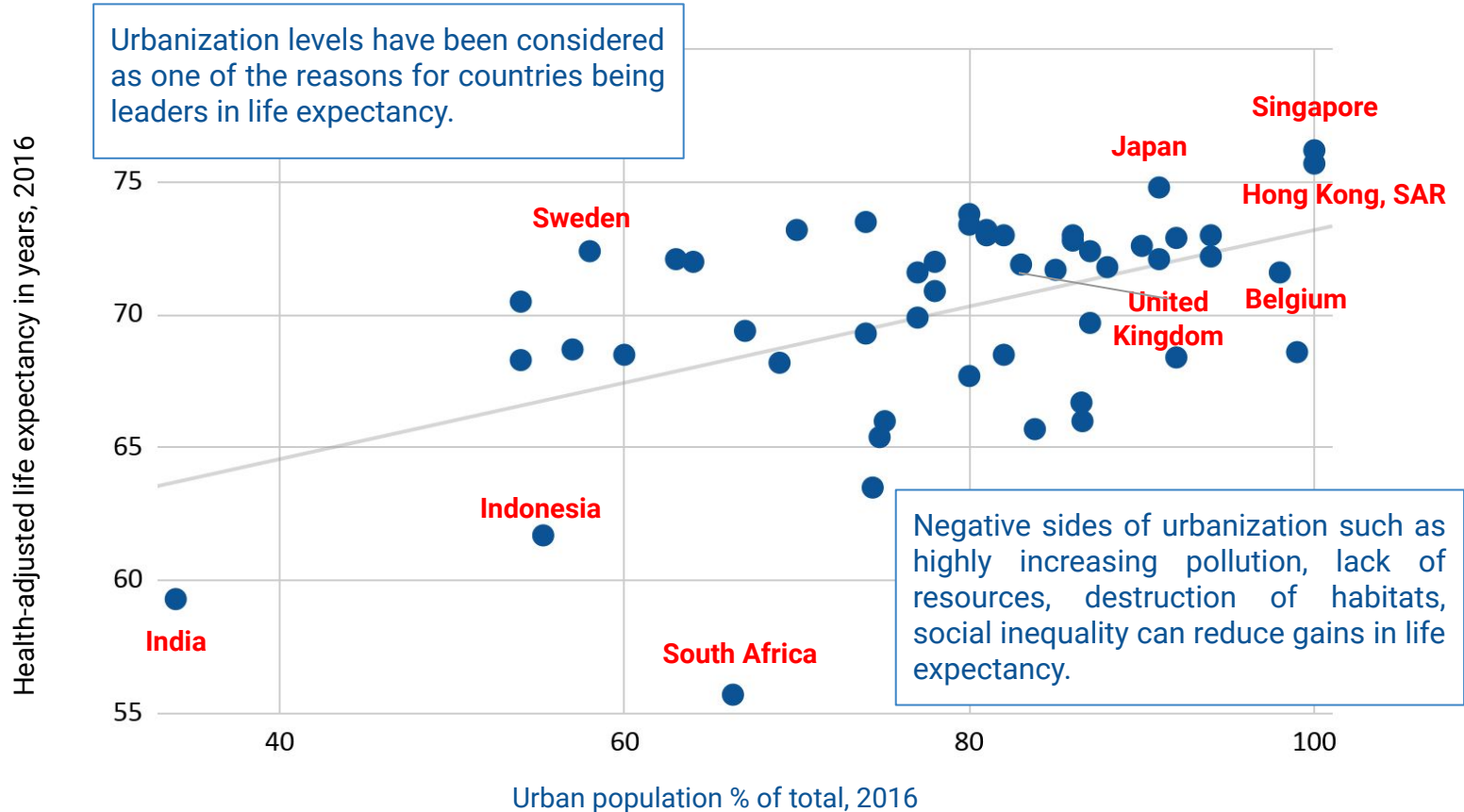
# Analytics Example N1: Life Expectancy vs. Ageing Population



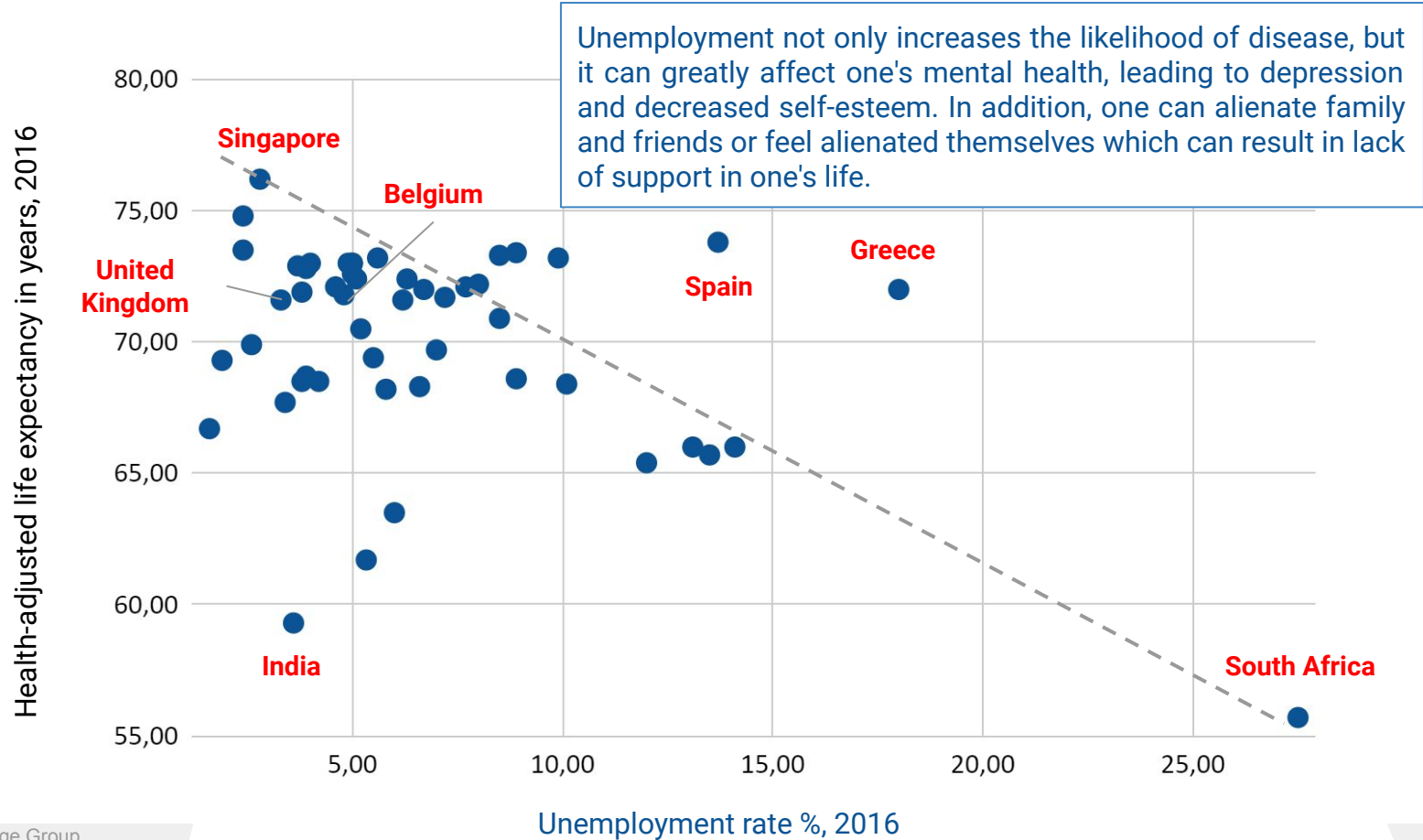
# Analytics Example N2: Ageing Population vs. Healthcare Expenditure



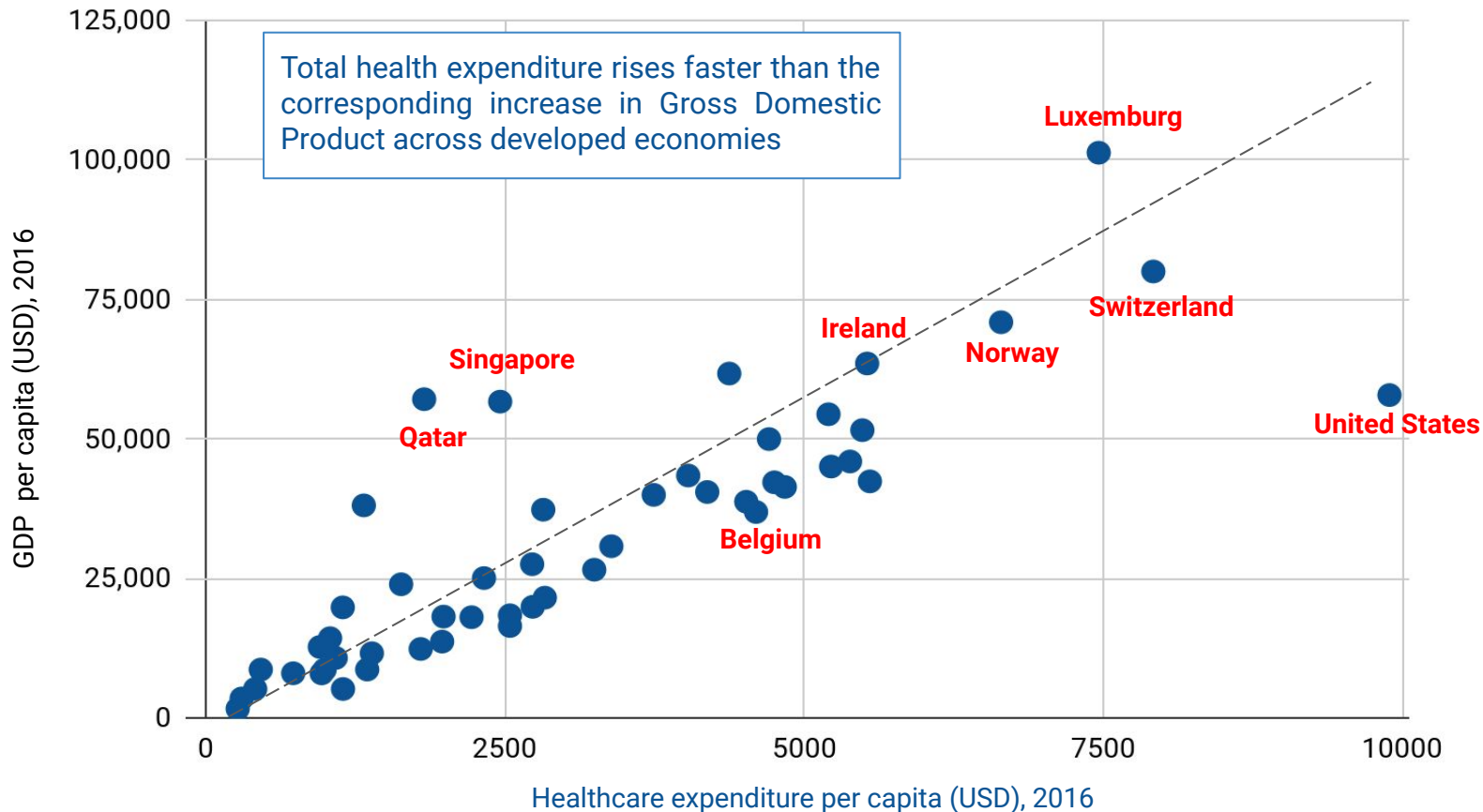
# Analytics Example N3: Urbanization vs. Healthy Longevity



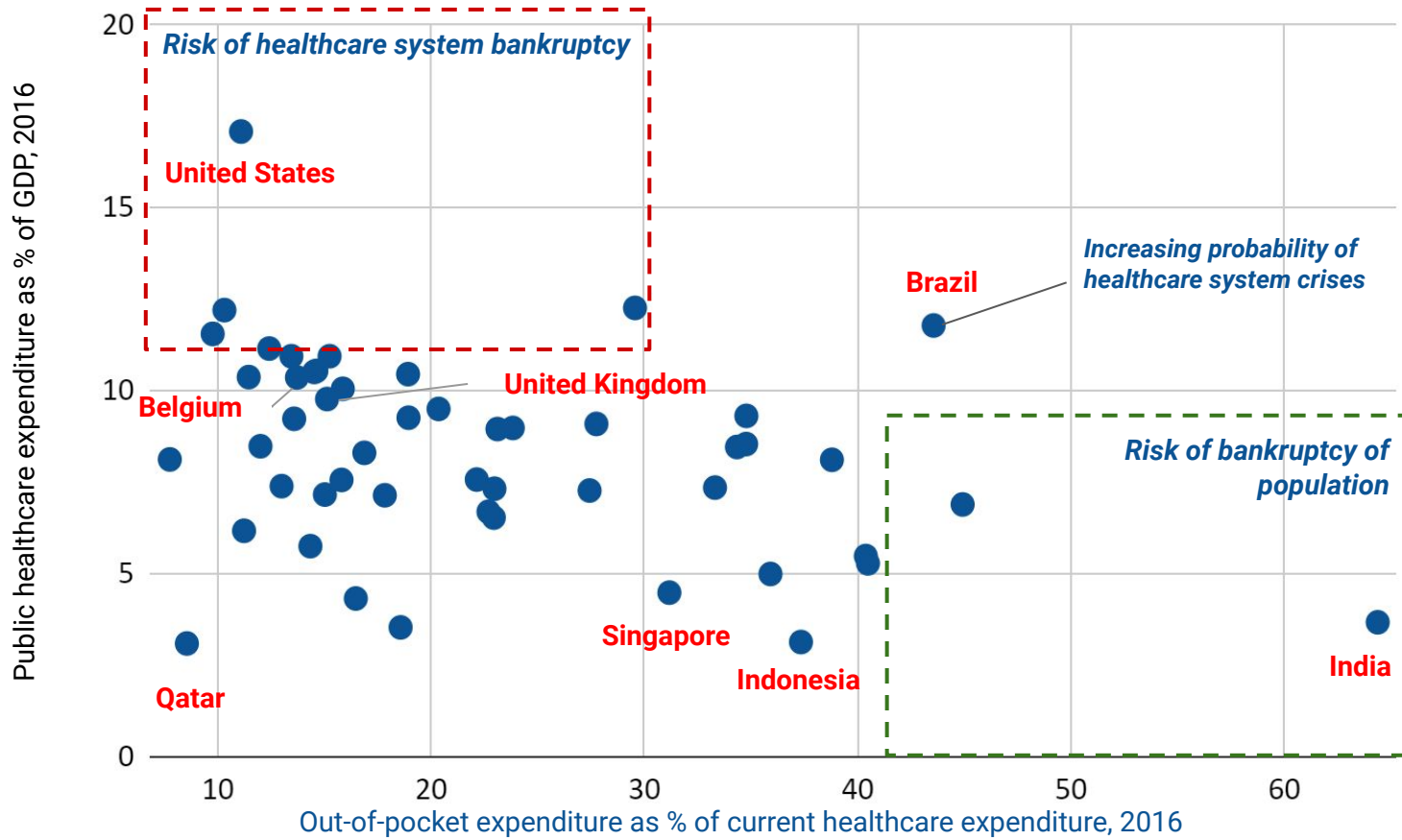
# Analytics Example N4: Unemployment vs. Healthy Longevity



# Analytics Example N5: Healthcare Spendings vs. GDP Per Capita

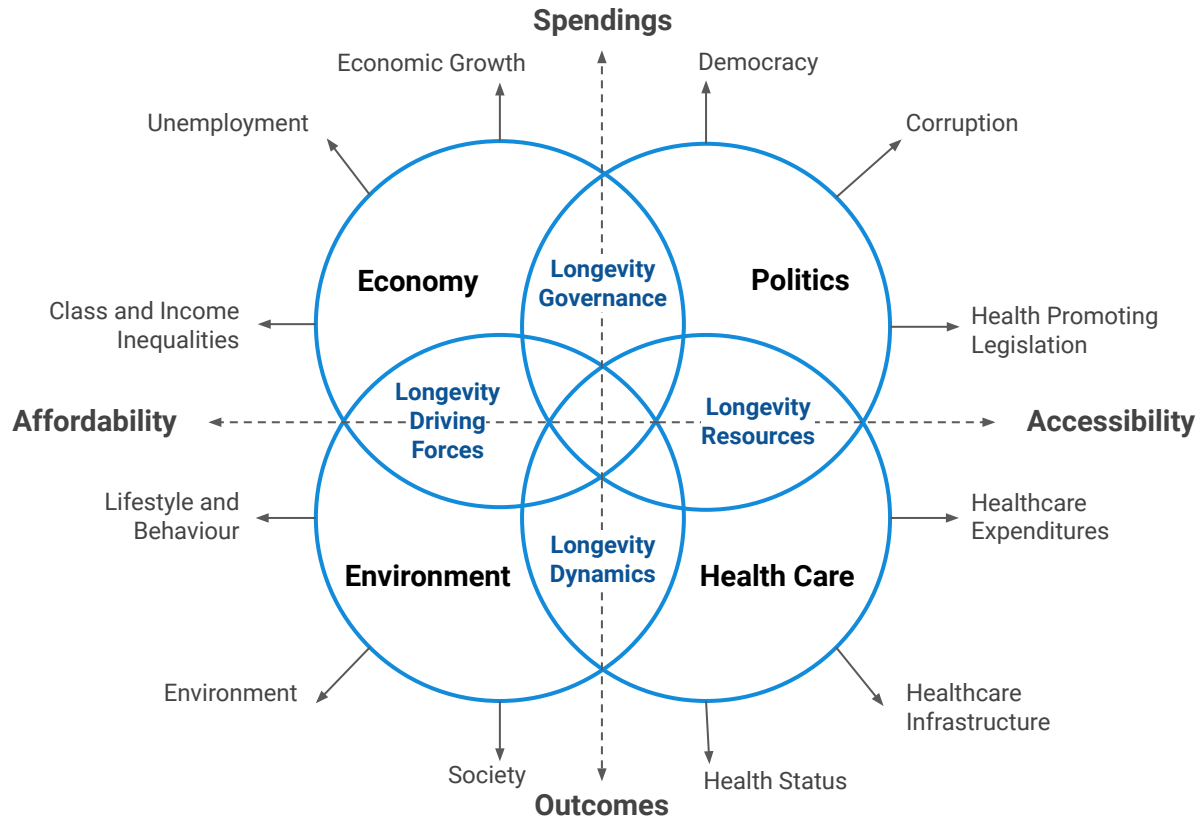


# Analytics Example N6: Public Health Expenditure vs. Out of Pocket Expenditure





# Longevity Progressiveness



Longevity progressiveness is important for driving economic progress and competitiveness – both for developed and developing economies.

**Healthy Longevity is affected by** many groups of factors such as: **socioeconomic status, demography, income, wellbeing**, the quality of the health system and the ability of people to access it, health behaviours such as tobacco and excessive alcohol consumption, poor nutrition and lack of exercise, **social factors**, genetic factors and **environmental factors** including overcrowded housing, lack clean drinking water and adequate sanitation.

Longevity progressiveness should be based **on four pillars**. They are good health outcomes, cost-efficiency, affordability of healthcare treatment for the population and widest possible access to services and products.

# Longevity Governance Dashboard Big Data Analytics Framework

## Data Collection

- 150 regions
- 240 parameters per region
- 12,000 parameters in total

## Data Cleaning

Aggregation  
of data by 5  
dimensions

- Economic conditions
- Demography
- Health care and Longevity
- Environment
- Social factors

## Model Creation

- Factor analysis of LE-HALE gap determinants (multiple regression)
- Analysis of variance of major longevity parameters across groups of countries (ANOVA)
- Defining leading countries in longevity governance (ranking)
- Estimation of relationships between metrics (intraclass correlation)
- Assessment of effectiveness of healthcare systems

## Model Validation

- Hypothesis testing
- Sensitivity analysis

## Development of Recommendations

- Incorporation results of research in practical region-specific and department-specific recommendations

# Longevity Progressiveness Methodology

Step	Name	Details	Stats
01	Data input	Filling in data for each country's metric selected by DKG experts from open-source databases.	146 metrics
02	Data Assessment	An assessment table assigns a point for each metric for each country depending on the allocation of a particular country's metric within the analyzed set.	Max 408 Points
03	Data Weighted Evaluation	Categories and their metrics are assigned with a particular weight which impacts the final score of a metric.	Max 100 Score
04	Pivot Results	At the final step all scores are gathered in the Pivot table. Initially table is grouped by categories and their score for each country. However, using slicers enables user to arrange table due to his needs.	50 Countries Ranking

# Semi-automatic SWOT

Step	Name	Details	Stats
01	Data input	Filling in data for each country's metric selected by DKG experts from open-source databases.	146 metrics
02	Data Assessment	An assessment table assigns a point for each metric for each country depending on the allocation of a particular country's metric within the analyzed set.	Max 408 Points
03	Country Selection	User selects a country for which he wants to receive a set of recommendations.	List of 50 Countries
04	Recommendations	At the final step user receives a full list of recommendations with a description as well as short summary of country's score in each category.	107 Guidances

# Analytical Precedents: National Longevity Development Plans

Aging Analytics Agency's first major Longevity Policy & Governance project was its 2019 case study, **National Longevity Development Plans Global Landscape Overview 2019**. Because Aging Analytics Agency is the main source of Longevity industry data and analytics for the UK **All-Party Parliamentary Group for Longevity**, representatives of the agency presented some of the special case study's major conclusions at an All-Party Parliamentary Group for Longevity **Strategic Advisory Board** meeting in **UK Parliament** on April 30th, arguing that the UK Government needs to extend existing efforts and create a framework to change the **deficit model** of the 'Ageing Society' to an **asset model** around 'Longevity' and be bold with a national strategy to harness the 'Longevity Dividend' to benefit all people in society.



# “National Longevity Development Plans” Case Study Presented in UK Parliament

On May 7, 2019, Aging Analytics Agency Founder Dmitry Kaminskiy also delivered a presentation highlighting major conclusions from Aging Analytics Agency’s **“National Longevity Development Plans Global Overview”** report at UK Parliament, as part of the official Launch Event for the All-Party Parliamentary Group for Longevity.

Aging Analytics Agency serves as the primary source of analytics and data for the APPG for Longevity.

Pictured left is the current UK Secretary of Healthy and Social Care, Matt Hancock, delivering a speech against the backdrop of the front cover of Aging Analytics Agency’s special analytical case study.




UK Secretary of Health & Social Care at the APPG for Longevity Launch



## Launch of the UK All-Party Parliamentary Group (APPG) for Longevity, House of Commons



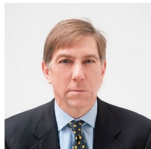







Aging Analytics Agency Co-Founder Dmitry Kaminskiy and Strategic Director Eric Kihlstrom alongside The Secretariat with Rt Hon Damian Green MP (APPG Chair), The Lord Filkin CBE (Advisory Board Chair), Professor Andrew Scott (Advisory Board Member) and Rt Hon Matt Hancock MP, Secretary of State for Health and Social Care at the Launch of the APPG for Longevity, where Aging Analytics Agency’s Global Longevity Governance Report was Premiered, distributed and discussed.

# Aging Analytics Agency - International Longevity Policy & Governance Summit



**International Longevity Policy and Governance Summit**  
November 12th 2019, 09:00 - 13:45  
King's College, London, UK

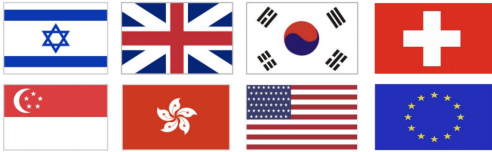
Aging Analytics Agency was also a strategic and supporting partner of the inaugural **International Longevity Policy and Governance Summit**, organized by **Longevity International UK** at **King's College, London** on **November 12th 2-19** (where several Aging Analytics Agency executives delivered presentations and chaired panel discussions) in an effort to support and promote a greater degree of international synergy and cooperation on the expanding frontier of Longevity Policy and Governance. The summit focused on the international response to harnessing the opportunities of an ageing demographic, and was attended by a number of high-profile representatives and government officials of healthcare departments from Longevity-progressive countries.

				
Tina Woods Longevity International UK	Dmitry Kaminskiy Aging Analytics Agency	Eric Kihlstrom Longevity International UK	Rt Hon Damian Green MP All-Party Parliamentary Group for Longevity	Lord Geoff Filkin CBE All-Party Parliamentary Group for Longevity
				
Dr Charles Alessi HIMSS	Julia Randell-Khan Center on Longevity, Stanford University	Professor, Kenji Shubuya Institute for Population Health, Kings College London.	Mike Hodin Global Coalition on Aging (TBD)	Sergey Young Longevity Vision Fund

**Cross-Border Collaboration**

Establishing Mutually-Beneficial Dialogue, Exchange, Cooperation and Policy Formulation with Longevity Progressive Nations

Learning from Past Mistakes in Policy, Implementing the Best Examples of Development Initiatives Overseas, and Synergetic Coordination



**“Living Longer, Healthier and Productively for Global Prosperity”**

Building Cross-Country and Cross-Sector Bridges for Longevity Politics and Governance Initiatives

**INVITATION FOR** Government Representatives  
Foreign Ambassadors  
Policy Experts  
Healthcare & Financial Executives  
NGOs, NonProfits, Think-Tanks



## Supporting Partners

Longevity International Policy and Governance Summit is supported by:



Longevity International UK is the Secretariat for the All-Party Parliamentary Group for Longevity.



# Aging Analytics Agency - International Longevity Policy Proposals

As an increasing number of progressive countries and government bodies begin to actively solicit consultation on Longevity policy, strategy and development plans, Aging Analytics Agency has correspondingly increased the scope of its activities in the realm of Longevity policy, and during September 2019 submitted three proposals to a number of national and international governance and policy-structuring organizations concerned with the issues of aging population and the opportunities of Healthy Longevity, including the UK All-Party Parliamentary Group for Longevity, the World Health Organization, and the UK House of Lords Science and Technology Committee.





# Aging Analytics Agency Longevity-Focused Analytical Subsidiary

Aging Analytics Agency is the world's premier provider of industry analytics on the topics of Longevity, Precision Preventive Medicine and Economics of Aging, and the convergence of technologies such as AI, Blockchain, Digital Health and their impact on the healthcare industry.

The company provides strategic consulting services in fields relating to Longevity, and currently serves as the supporting partner for the **UK All-Party Parliamentary Group for Longevity**.



appg longevity

Supporting Partner for the UK All-Party Parliamentary Group for Longevity and a Source of Data and Analytics for the APPG Secretariat



Official Member  
Organization of the United  
Nations NGO Committee  
on Ageing



Media Partner for  
Metabesity Conference in  
Washington D.C.



LONGEVITY.CAPITAL

Main Source of Market  
Intelligence and Industry  
Analytics for the  
Longevity.Capital

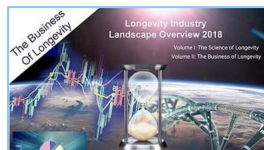


Supporting Partner of the  
Annual International  
Longevity Policy &  
Governance Summit

Website: [www.aginganalytics.com](http://www.aginganalytics.com)

# Aging Analytics Agency Timeline

**Aging Analytics Agency** has produced dozens of the Longevity Industry Landscape Overviews and Proprietary Analytical Case Studies during the last four years. In April 2021, the agency has presented 100+ Page Report, and Interactive IT Platform Features Detailed Analysis, Comprehensive Commentary & Tangible Benchmarking of UK House of Lords' Science and Technology Select Committee "Ageing: Science, Technology and Healthy Living" Report.



Website: [www.aginganalytics.com](http://www.aginganalytics.com)

# Media About Aging Analytics Agency Activities



READ THE ARTICLE

“**Aging Analytics Agency** is the only analytics entity exclusively focussed on examining and representing healthy ageing and is uniquely positioned to provide MIDAS and key stakeholders within the city region with a detailed analysis of Greater Manchester’s longevity landscape including the identification of companies, investors, R&D hubs, academic institutions and industry professionals operating within this field.”



READ THE ARTICLE

“According to figures compiled by the **Aging Analytics Agency**, Covid-19 has facilitated the development of not only the biotech capital markets, but the longevity sector in particular, resulting in more than 30% of growth of public companies compared to the previous year.”



READ THE ARTICLE

“According to a recent report by **Aging Analytics Agency**, Switzerland has the elements necessary to become a leading Longevity financial hub, including factors such as a lean political system that facilitates rapid implementation of integrated government programs, a strong research environment for geroscience, a strong research and business environment for digital health, and most importantly, international financial prowess.”



READ THE ARTICLE

**Aging Analytics Agency**’s Report “**Longevity Industry in the UK**” was highlighted in Financial Times. “The one billion retired people globally are a multi-trillion dollar opportunity for business,’ said Dmitry Kaminskiy, co-author of the UK Longevity Industry Analytical Case Study.

Website: [www.aginganalytics.com](http://www.aginganalytics.com)

# Aging Analytics Agency: Value Proposition

Aging Analytics Agency is the only specialized analytics agency in the world that focuses exclusively on the emerging Longevity Industry. They are recognized internationally as the premier analytics agency for advanced data analysis, industry reports and next-generation infographics on the topics of Aging and Longevity.

## Aging Analytics Agency is focusing on three key activities:

### Providing Commercial Services

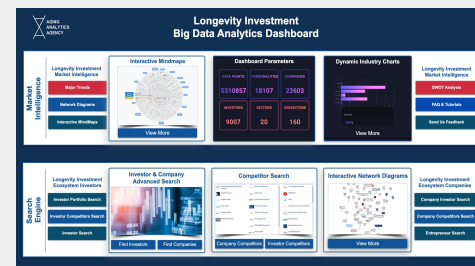
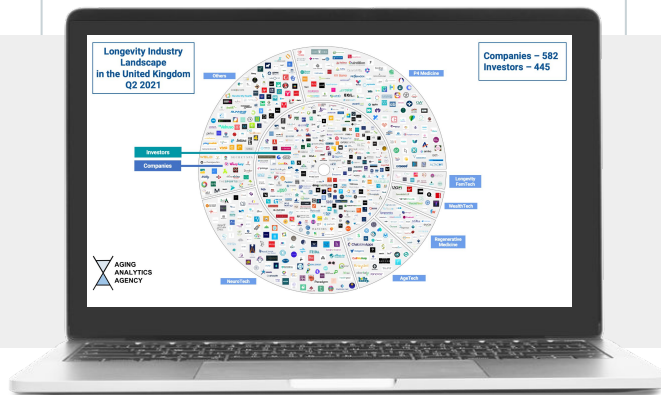
Conducting customised case studies, research and analytics for internal (organizational) use, tailored to the precise needs of specific clients.

### Preparing Open Access Reports

Producing regular open access and proprietary analytical case studies on the emerging topics and trends in the Longevity Industry.

### Building Big Data Analytics Platforms

Offering customised analysis using specialised interactive industry and technology databases, IT-platforms and Big Data Analytics Dashboards.



Website: [www.aginganalytics.com](http://www.aginganalytics.com)

Longevity Financial Advisors  
InvestTech IT-Platform

# Longevity Financial Advisors InvestTech IT-Platform

The Longevity Financial Advisory Firm is supported by sophisticated and ergonomic IT-Platform

The IT-platform will allow investors to easily navigate the process of identifying private investment targets and leverage Deep Knowledge Group's proprietary next-generation big data analytical systems, which are capable of instantaneously generating preliminary due diligence results and SWOT analyses based on multiple parameters.

The IT-platform's principal goal is to create a convenient and effective way for investors to allocate capital quickly and safely into businesses operating in the Longevity Industry. Besides the benefits listed above, the IT-platform also enables private companies to easily access a diverse pool of capital by aggregating funding from multiple sources. The platform also facilitates participation of investors with different allocation capabilities, thereby increasing overall capital flow into the Longevity Industry as a whole.



**Longevity Financial Advisors IT-platform resolves the principle problems and obstacles that arise from target identification with an easy installation and ergonomic interface.**

- Standardizes legal workflow, keeping the investor focused on strategic investment decisions
- Manages the full scope of the deal lifecycle from target selection to completion
- Utilises sophisticated automated LegalTech tools
- Eases setup and clarifies workflows, enabling investors to save time on deal activity
- Provides permanent reporting on the performance of the investments
- Collects and compiles data on all deals for tracking through their entire lifecycle

## Longevity Financial Advisors InvestTech IT-Platform

1	Dramatically speeds up the investment decision-making process
2	Simplifies and automates the process of making an investment deal
3	Provides a convenient and mutually beneficial tool for both sides of the capital raising process
4	Provides a single, integrated marketplace for all kinds of longevity investment products

# Longevity Financial Advisors IT-Platform Features

## Reporting

Automated reporting processes enable report generation containing tailored information targeted to the needs of internal and/or external stakeholders.

## Data Collection

Data collection and processing lets investors use information to quickly and easily populate workflows and dashboards, providing them with accurate information on their deals.

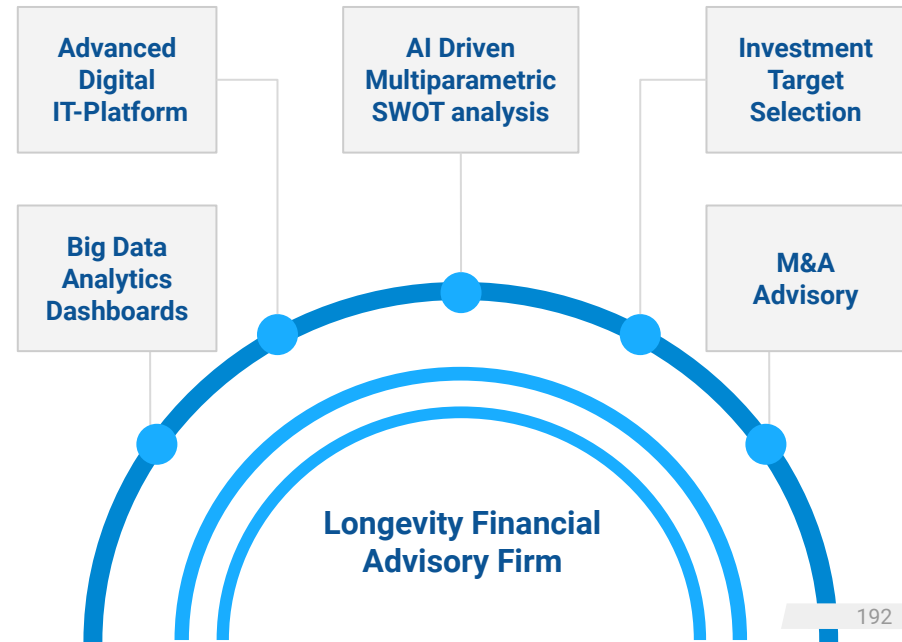
## Transaction Management

With a clear process of transaction tracking, investors have a granular picture of their portfolio exposure and can easily find areas of concern where they need to focus their attention.

## Dashboard

Investors get quick access to comprehensive and up-to-date analytics on their investments using dashboards linked to users or ongoing deals.

The Longevity Financial Advisory IT-platform provides clear vision of an investment's lifecycle – from selection, to analysis, to completion through the hold period and to exit. Using the Longevity Financial Advisory IT-platform investors can analyse data specific to each deal, enabling them to make informed decisions with respect to the totality of their Longevity Industry portfolio.





# Longevity Investment Bank - Concept

**On the next stage Longevity Financial Advisors plans to evolve into a broader investment banking business expected by year 2024**

The fundamental purpose set for the Longevity Investment Bank is the creation of a end-to-end platform to service corporate and institutional investors intending to trade longevity financial assets and instruments. Longevity Investment Bank will enable involved parties to manage their investments, thereby creating innovative environments with advanced InvestTech solutions.

The novel nature of the Longevity Investment Bank lies, among others, in:

- Sophisticated Longevity investment analytics
- Bringing the most innovative developments in HealthTech, BioTech and Longevity Industries into the financial scope of emerging investment products and financial services
- Providing parties involved with comprehensive data for making investment decisions

Long-lasting assistance in investment portfolio management based exclusively on proprietary data

## Who can benefit?

<b>Independent Financial Advisors</b>	<b>Private Equity Funds</b>
<b>Private Banks &amp; Wealth Managers</b>	<b>Corporations</b>
<b>Asset Management Companies</b>	<b>Venture Capital Funds</b>
<b>Challenger Banks</b>	<b>Retail Banks</b>
<b>Pension Funds</b>	<b>Insurance Companies</b>

# Longevity Investment Bank Concept: Scope of Services

Advisory	Fundraising	Brokerage Services	Trading	Research	Investment Management	Financial Derivatives Production
Risk management and assessment	IPO preparation and implementation	Market making	Stock trading	Macroeconomic and industry research	Portfolio management and optimisation	Structured products
Advising on mergers and acquisitions	Preparation for funding rounds	Buying and selling assets on behalf of clients	Debt securities trading	Buy-sell recommendations	Diversification strategies	Stock futures and options
Advising on capital raising	Preparation for secondary public offerings	Lending to clients for margin transactions	Financial derivatives trading	Financial analysis and reports on specific companies	Investment targets selection	Swaps
Advising on investment	Due diligence	Providing informational support about market goings-on	Structuring	Credit risk assessment and credit ranking	Performance measurement	HALE/QALE derivatives
Advising on portfolio management	Underwriting	Investor-company matching	De-risking of investments	Quantitative finance and econometric analysis of financial statistics and price dynamics	Personalised investment strategies development	Performance trackers
Advising on management and strategy	Debt offerings	Risk optimisation advisory	Hedging	Corporate finance	Risk optimisation	Biomarkers derivatives

# Access to a Diverse Pool of Longevity and DeepTech Investments

Through Longevity Financial Advisors, Deep Knowledge Group aims to provide investors with access to a diverse pool of longevity investments. Thus, we are actively engaged in the creation of Longevity-focused investment products, such as SPVs, structured products, syndications, etc. Deep Knowledge Group has significant (10-30%) equity stake in all mentioned investment vehicles and incurs associated risks. A brief overview of our current pipeline is presented below:



AI in Pharma Actively Managed Certificate, Switzerland, is providing feasible investment solutions for the AI in Pharma market.



Performance tracker certificate, Luxembourg, providing exposure to advanced SpaceTech company on track for a IPO in US.



SPV, launched in the US, focused on FemTech women's healthcare market.



Deep Knowledge Longevity SPV providing exposure to DKG investments in the Longevity space.



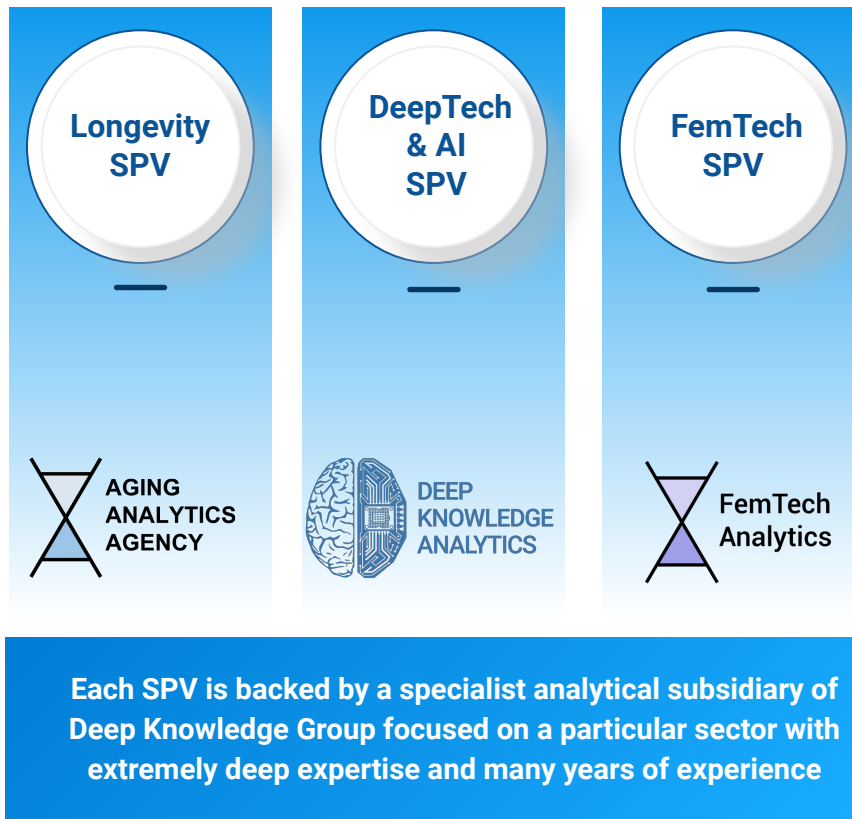
Syndication in SPV DeepTech & AI Technologies providing exposure to DKG investments in the AI space.

# Longevity Financial Advisors SPVs

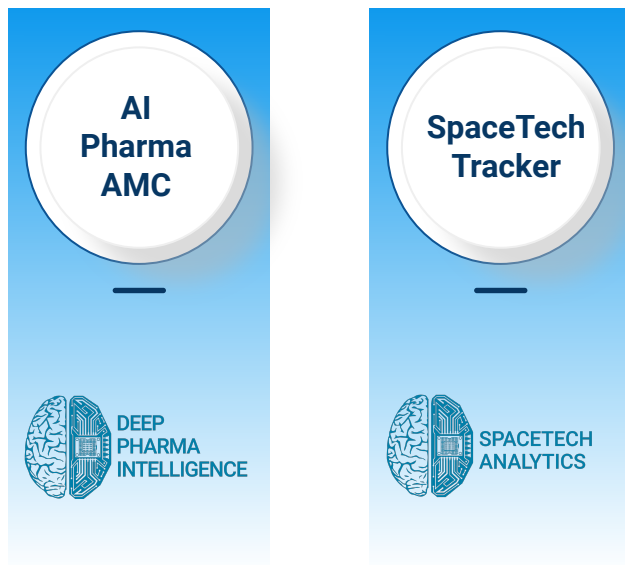
Longevity Financial Advisors establish **Special Purpose Vehicles** (SPVs) with the aim to precisely specify investment targets and isolate financial risks. Every SPV is specifically focused on very concrete market sector, exclusively using the expertise of one of the subsidiaries of Deep Knowledge Group. Hence, for each SPV there is assigned a separate back-end analytics company, fully dedicated to investment due diligence, portfolio structuring and investment target selection. Most of these subsidiary companies are recognized global leaders in their specific domains.

**With SPVs, Longevity Financial Advisors create a unique value proposition, achieved through synergistic combination of:**

- Exceptionally deep and sophisticated expertise of DKG analytics subsidiaries
- Investment track record of DKG in DeepTech domains
- Specific advantages of SPVs in general, such as deal-by-deal basis and trackability
- The explosive growth of DeepTech Industries, including Longevity and SpaceTech.



# Structured Financial Products



All these structured products are designed in such way that participants will have enhanced access to secondary market transactions (partial liquidity for alternative venture investments)

Structured Financial Products are tradable and bankable tailored-made derivatives providing exposure to proprietary sets of AI-Pharma and SpaceTech companies, and also some other DeepTech sectors

A key distinction from classic SPVs is that **Actively Managed Certificates** and **Performance Trackers** are **tradeable and bankable** and therefore more liquid.

We are using **Swiss legal framework for structuring Actively Managed Certificates and Performance Trackers**. These financial products are designed for enhanced trackability. Considering our AI and Big Data-centered approaches, they become even more reliable and well-tailored for securitisation.

These structured financial products utilize in-depth market and investment expertise developed by Deep Knowledge Group analytics subsidiaries and provide exposure to proprietary selected portfolios of DeepTech companies.

Deep Knowledge Group is currently is working on the launching new structured financial products in other jurisdictions besides Switzerland

# SPV Structuring and Syndicate Fundraising Platform

# Multi Trillion Dollar Business Opportunity

## Longevity, AgeTech & WealthTech Market

### Globally

1 Billion in retirement

### In the UK

10 Million in retirement

**“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** 

# Investing via SPVs

**Special Purpose Vehicle (SPV)** is a financial entity (company) established with the purpose of precisely specifying investment targets and isolating financial risk.

The operations of the SPV are limited to the acquisition and financing of specific assets, and a separate company structure serves as a method of isolating the risks of these activities. An SPV may act as a counterparty for swaps and other credit-sensitive derivative instruments.

SPV might perform as a single-deal syndicate and can be used to invest on a deal-by-deal basis. Because of this precise structure, an SPV is a good solution for family offices and for diversification allocation purposes.

These characteristics make SPVs an excellent tool for the Longevity Industry



**Compared to SPV, Venture Capital Funds tend to have the following limitations:**

**1. Long lock-up period**

**2. Incongruence with initial investment vision/thesis**

**3. Transactions limited to secondary market**



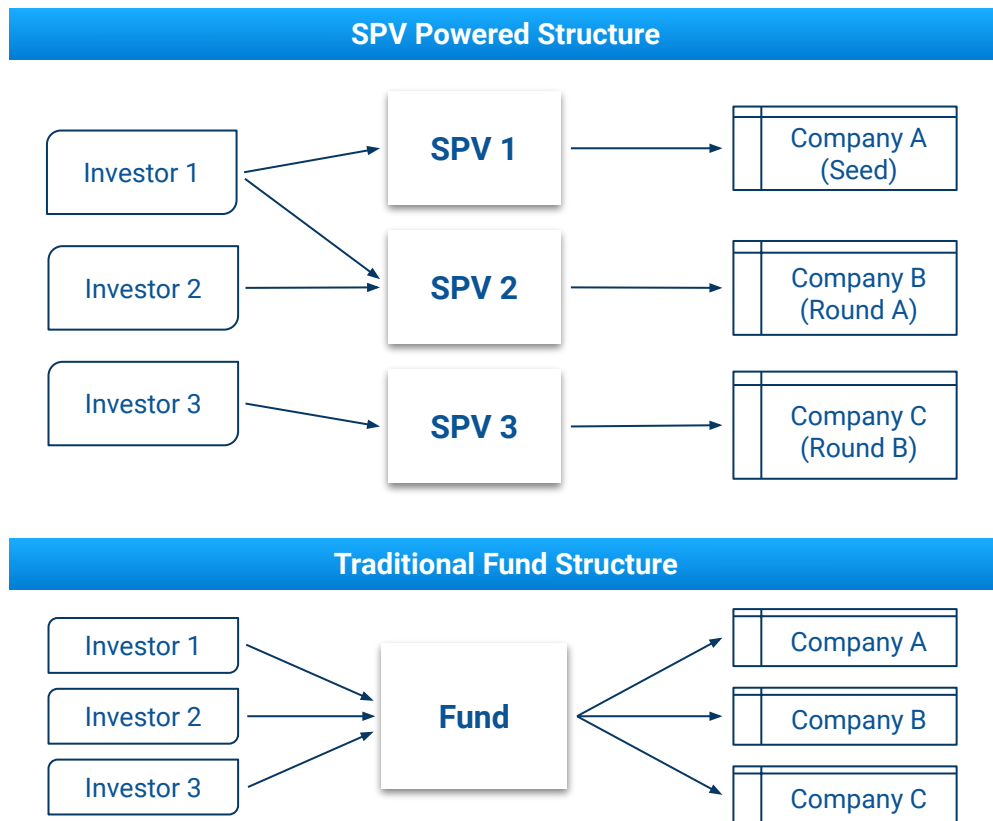
# Solutions Powered by SPV

Whilst classical funds direct their financial resources to different targets, it may be difficult to assess the performance of a particular allocation.

On the other hand, **Special Purpose Vehicles** allow investors to track each allocation on a more granular level, enabling a detailed and in-depth analysis.

Moreover, this approach allows not only stage-specific but also all types of investment analysis.

A granular approach also creates feasible means to work with complex structures, such as the Longevity Industry. It also provides the right opportunity for the development of an Industry-focused assessment technique, enabling higher returns on a given allocation.



# SPV Structuring and Syndicate Fundraising Platform Overview

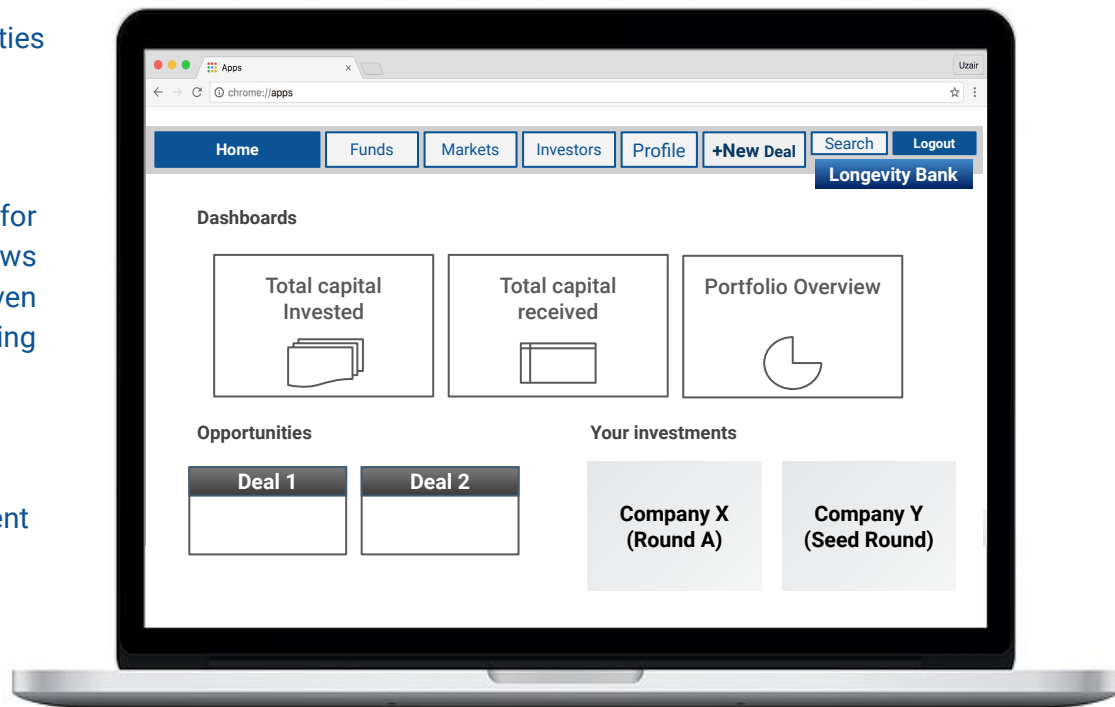
## Comprehensive Investment Infrastructure

- end-to-end solution to syndicate investment opportunities
- state of the art investment platform
- automated processes
- legal coverage

The investment network of a given SPV is adjusted for in-depth performance analysis. This network allows tracking and measuring the performance of every given investment, predicting future obstacles and forecasting how to overcome them.

## Services:

- Fund & SPV structuring
- Investor onboarding
- Transactional banking
- Legal documentation
- Administration & reporting
- Cap table management
- Online dashboard
- Compliance
- Tax/accounting
- Distribution

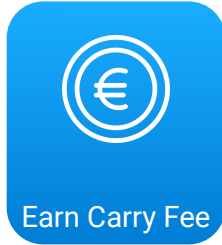


# Accelerate Investment Deal Flow

SPVs allow their members to participate in investments on a deal-by-deal basis making multiple direct investments in companies at different stages.

Our solution will allow **deploying capital easily in a cost- and time-efficient way.**

Because of the legal definition of an SPV, it is possible to create it in many different types and forms, **tailoring it for the immediate needs of the investor and the specific transaction in question**



The syndicate solution is for

Business Angels

VC firms

Investment managers

Venture funds

Startups

Family Offices

We create a more accessible investing infrastructure for both startups and investors.

# Key Capabilities and Features

**Incorporation**

**Public Fundraising**

**Open-ended Vehicle**

**Multi Investment**

**Carry Fee**

**Document  
Templates**

**KYC**

**Secondary Market  
Transactions**

**Automated Capital  
Calls**

**Management fee**

**IT Platform**

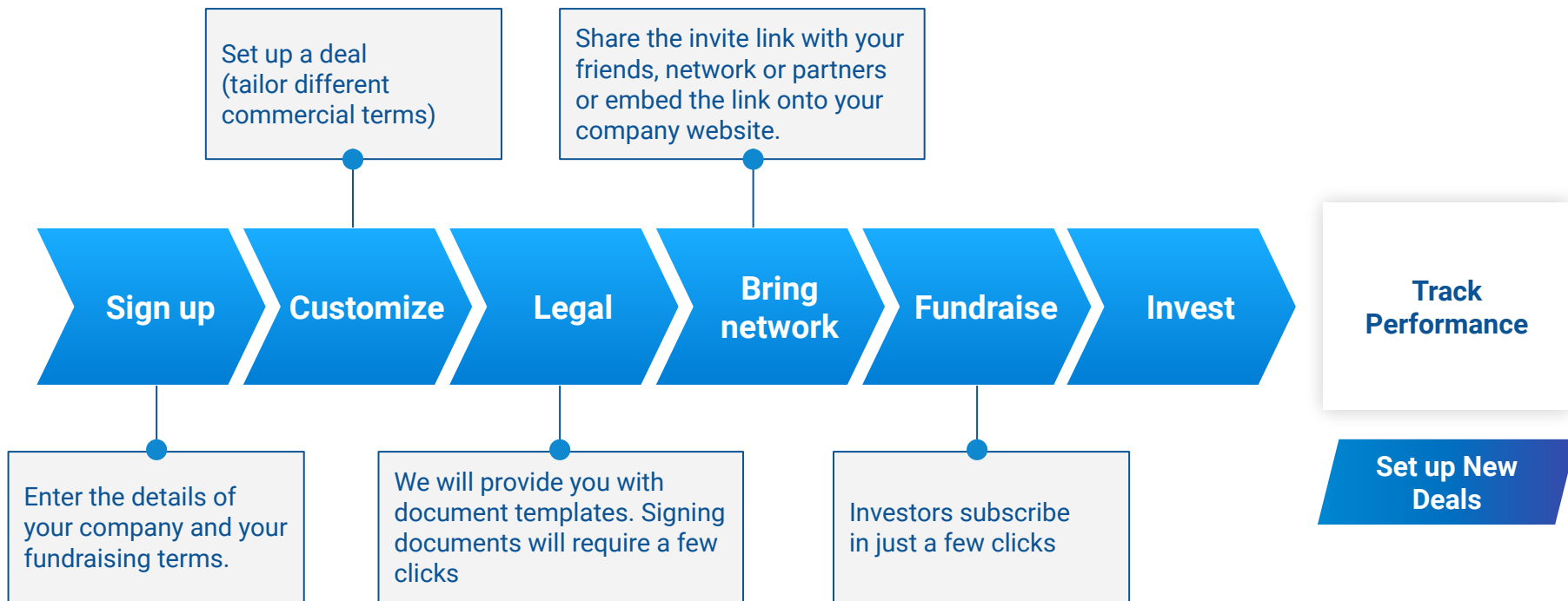
**Digital Dashboards**

**Pro-rata Right**

**Back Office  
Automation**

**Multi Close**

# Journey



# Interaction with Longevity Investment Bank platform

SPV Structuring and Syndicate Fundraising Platform is aiming to grow into a full-fledged **Longevity Investment Bank**

The initial platform will evolve from an end-to-end investment syndication solution, which provides only **Deal Structuring and Analytics** to a comprehensive **Investment Bank**

## SPV Structuring and Syndicate Fundraising Platform

- Automated Deal-making Infrastructure
- Investment Analytics & Research



## Longevity Investment Bank

- Accessing global financial markets - private companies regardless of stages of development, industry/sector, size, etc.
- Structuring of Derivatives
- Investment Management
- Syndicating Deals
- Risk management
- Debt Financing
- Mergers and Acquisitions
- Research
- Advisory
- IPOs

# Digital UK Ecosystem Dashboard

# Deep Knowledge Analytics

Deep Knowledge Analytics is a DeepTech focused agency producing advanced analytics on DeepTech and frontier-technology industries using sophisticated multi-dimensional frameworks and algorithmic methods that combine hundreds of specially-designed and specifically-weighted metrics and parameters to deliver insightful market intelligence, pragmatic forecasting and tangible industry benchmarking.

Deep Pharma  
Intelligence

GovTech  
E-Governance  
Analytics

COVID-19  
Assessments

Innovation Eye

Interactive  
Mind Maps

SpaceTech  
Analytics



Deep Knowledge Analytics specializes in conducting special case studies and producing advanced industry analytical reports on the topics of Artificial Intelligence, DeepTech, GovTech, Blockchain, FinTech and Invest-Tech.

**Deep Knowledge Analytics** can engage with strategic partners via several different approaches, including:

- Conduct customised case studies, research and analytics for internal (organizational) use, tailored to the precise needs of specific clients;
- Production of analytical reports for open source use (freely accessible);
- Perform customised solutions using specialised software, industry and technology databases, interactive IT-platforms.



# Overview of Divisions

## Joint Ventures

Deep Pharma Intelligence is a leading strategic and investment intelligence agency focused on the emerging markets in the Pharmaceutical, BioTech, and Healthcare Tech industries.



**Deep Pharma Intelligence**



**Innovation Eye**

Innovation Eye provides sophisticated market analytics, industry intelligence, comparative industry classification frameworks and case studies, developing advanced tools for analysis and visualization.

## Analytical Divisions

SpaceTech Analytics is an agency focused on markets in the Space Exploration, Spaceflight, Space Medicine, and Satellite Tech industries. The range of activities includes research on major areas of high potential SpaceTech industry.



**SpaceTech Analytics**

**COVID-19  
ANALYTICS**

**COVID-19 Analytics**

COVID-19 analytics is designed to analyze the economic, social and health stability achieved by countries and regions, as well as the strengths, weaknesses, opportunities, and threats or risks that they present in the battle against COVID-19.

The GovTech Division focuses on producing sophisticated analytics that reveal major factors driving the ongoing transformation of the global GovTech industry, barriers to this process, and ways to overcome them.



**GovTech Analytics**



**Analytical Department**

Analytical Department is responsible for Big Data analytical frameworks and visualizations, as well as the analysis of the state of different industries and preparing comprehensive case studies.

# Overview of Divisions: Analytical Reports\*

**NATIONAL LONGEVITY DEVELOPMENT PLANS: GLOBAL OVERVIEW 2019 (First Edition)**

51 Countries Big Data Comparative Analysis of Longevity Progressiveness

**Global Longevity Governance Landscape**

51 Countries Big Data Comparative Analysis of Longevity Progressiveness

**Global eHealth Industry Landscape Overview 2020**

**New Report**

**COVID-19 MedTech IT-Platform May 5, 2020**

**Blockchain Industry in the UK Landscape Overview 2021 / Q2**

**COVID19 City Safety Ranking Q1/2021: Benchmarking of Municipal Pandemic Response**

25 Cities COVID-19 Ranking

1	Abs/Dubai	73	24	London	61
2	Seoul	71	25	Los Angeles	61
3	Beijing	70	26	Amsterdam	60
4	Stockholm	68	27	Riyadh	58
5	Cairo	68	28	Taipei	58
6	Berlin	66	29	New York	58
7	Taipei	66	30	Moscow	56
8	Taipei	65	31	Paris	53
9	Zurich	63	32	Madrid	52
10	Krakow	63	33	Rome	52
11	Sao Paulo	62	34	Budapest	50
12	Hong Kong	62	35	Bangkok	49
13	Bogota	62			

**Quarter 1 / 2019 AI**

FOR DRUG DISCOVERY, PHARMACEUTICAL DEVELOPMENT AND ADVANCED R&D LANDSCAPE OVERVIEW 2019 / Q1

**GovTech / E-governance Global Industry Landscape Overview 2019**

**GovTech Solutions for 2020 Elections: US Case Study**

December 2020

**COVID-19 Regional Safety Assessment July, 30 | 2020**

COVID-19 Regional Top-30 Ranking

1	USA	70	16	INDONESIA	51
2	USA	69	17	INDONESIA	51
3	USA	68	18	INDONESIA	51
4	USA	67	19	INDONESIA	51
5	USA	66	20	INDONESIA	51
6	USA	65	21	INDONESIA	51
7	USA	64	22	INDONESIA	51
8	USA	63	23	INDONESIA	51
9	USA	62	24	INDONESIA	51
10	USA	61	25	INDONESIA	51
11	USA	60	26	INDONESIA	51
12	USA	59	27	INDONESIA	51
13	USA	58	28	INDONESIA	51
14	USA	57	29	INDONESIA	51
15	USA	56	30	INDONESIA	51

**Artificial Intelligence Industry in the UK Landscape Overview 2021 / Q2**

Main trends: AI and COVID-19, AI ethics, AI employment, AI products, AI implementation

**Cell Therapies in Healthcare Landscape Overview Q2 2021 Stem Cells and CAR-Ts (Teaser)**

May 2021

**Future is Asian**

DeepTech & AI / Financial Institutions Socio-Economic Development Analytical Assessment and Overview

**AI IN PHARMA TOP-20 CONFERENCES 2019-2020 2nd Edition**

**Top-30 Women AI Leaders In Drug Discovery and Advanced Healthcare**

**5 High-Impact Technology Companies in Healthcare to Watch in 2021-2022**

December 2020

**Artificial Intelligence in Drug Discovery: Focus on Oncology Q1 2021 (Teaser)**

April 2021

**GovTech / E-governance Global Industry Landscape in the Post-Pandemic World 2021/Q2**

June, 2021

**Top-20 AI in Drug Discovery Investors Teaser**

**Declining Efficiency of R&D in Pharma Corporations Teaser**

**AI IN PHARMA TOP-20 CONFERENCES 2019-2020 2nd Edition**

2019

2020

2021

# Media About Our Activities



[READ THE ARTICLE](#)

"If we were to follow the logic of these Short Sellers Reports to their fullest extent, it could be concluded that all innovative, DeepTech-driven companies working on something fundamentally new and disruptive may be easily accused in fraud", adds Co-founder at **Deep Knowledge Analytics Mr. Dmitry Kaminskiy**



[READ THE ARTICLE](#)

"**Deep Knowledge Analytics** conducted and released today (December 2nd 2020) an independent analysis regarding Citron Research and Muddy Waters short-sell campaign against Israeli Nasdaq traded company "Nanox"



[READ THE ARTICLE](#)

"Despite the recent hype, there is a lack of AI specialists and 'promising' drug discovery AI-startups, according to **Deep Knowledge Analytics.**"



[READ THE ARTICLE](#)

"A report published on Wednesday by the All Party Parliamentary Group for AI claimed that the UK has all of the basic elements necessary to compete effectively in a global race to develop AI technology. The Big Innovation Centre and **Deep Knowledge Analytics** collected and produced the report."



[READ THE ARTICLE](#)

"Britain has all the required resources, as well as industrial and governmental will, to become a global hub for the technology by 2022, according to analysis by the Big Innovation Centre and **Deep Knowledge Analytics.**"



[READ THE ARTICLE](#)

"By 2022, the UK will be a global hub for blockchain technologies and the crypto economy. That is the claim of a new report from the Big Innovation Centre and **Deep Knowledge Analytics**, released last month."



[READ THE ARTICLE](#)

**Deep Knowledge Analytics** picked the 'Top 100 AI Leaders in Drug Discovery and Advanced Healthcare' out of an initial pool of 500 outstanding candidates.



[READ THE ARTICLE](#)

**Deep Knowledge Analytics** Founder Dmitry Kaminskiy's has released new book "Longevity Politics: Longevity Technocracy, Modern Approaches to Policy, Governance & National Industrial Strategies, and Longevity as the New Political Priority of the 21st Century".

## About

**Digital UK Ecosystem Dashboard** provides the most relevant information about the state of different industries in the UK by regions and the general overview of the country. The dashboard is divided into five main directions: Digital Ecosystem, COVID-19 Analytics, Government Investment Initiatives and Programs, Longevity Initiatives, and Investment Digest.

The platform works by data aggregation, parsing, and analytics platform combined with stakeholder innovative matching capabilities to improve decision-making regarding technological innovations from both analytics and execution perspectives. It can serve as a one-stop automated data diagnostics and analytics platform for companies, start-ups, governments, governmental bodies, and investors.

## Key sectors of analytics:

- Artificial Intelligence
- Cloud Services
- Consulting and Outsourcing
- Data Analytics
- Digital-related
- Education
- Energy
- Entertainment
- FinTech
- GovTech
- HR
- Healthcare
- Infrastructure
- InsurTech
- LegalTech
- Marketing and Advertising
- News
- Real Estate
- Shopping and Retail
- Supply Chain
- Telecommunications
- Transport

**The analytics has value to investors looking for investment targets, companies analyzing their competitors, and other organizations for further collaborations.**

### Companies

- SWOT analysis of competitors
- Automatic business development recommendations generation
- AI-based matching with investors and organizations
- Recommendations for industries and cross-industries collaborations

### Investors

- SWOT analysis of investment targets
- Due diligence of portfolio companies
- Analysis of the strategies of leading industry investors

# Digital UK Ecosystem Dashboard Overview

## Dashboard Overview

Deep Knowledge Group is building a sophisticated cloud-based engine for advanced market and business intelligence in various deeptech industries in the UK. It includes a data-mining engine, infrastructure for expert data curation, and advanced visualization dashboards, including mindmaps, knowledge graphs, and 3D visualizations.

Smart matching tool	Machine learning for database extrapolation	Dynamic SWOT analysis representing evolution of a company
Companies database	Machine learning and deep neural networks for companies clusterization	Interactive industry mindmaps
Investors database	Machine learning for COVID-19 predictions	Real-time investments data analytics platform for deep tech corporations
SWOT analysis	Governmental programs for digital companies database	Longevity industry financial instruments analytics

## Commercial Value

- Data-driven insights about the emerging areas in the UK
- Investment advisory and actionable insights about primary and secondary markets
- SWOT analysis of most promising entities and technologies, providing a clear view of opportunities and risks
- Identification of growth opportunities, including partnerships, technology deals, and investment prospects
- Competitive intelligence
- Smart matching of B2B and B2G segments
- Identification of patterns within industries and subindustries for their future development
- Business and technical due diligence and more

## Who Can Benefit

- Investment institutions, funds, investment banks, family offices
- Private and public companies in the UK DeepTech space
- Research institutions, universities
- Technology vendors and contract research organizations
- Startup hubs, accelerators
- Consulting companies and agencies

# Digital UK Ecosystem Dashboard's Statistics

**69,000+**  
Companies

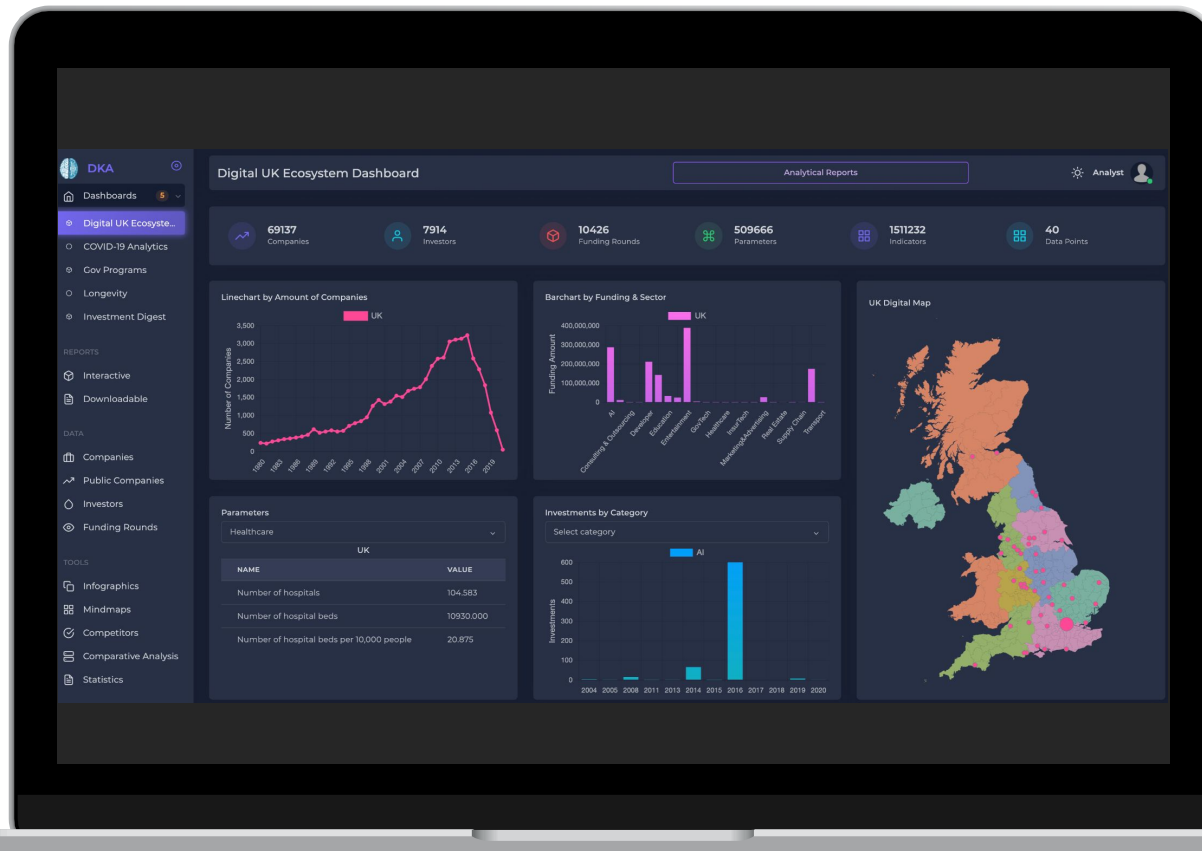
**~8,000**  
Investors

**10,000+**  
Funding Rounds

**500,000+**  
Parameters

**1,500,000+**  
Indicators

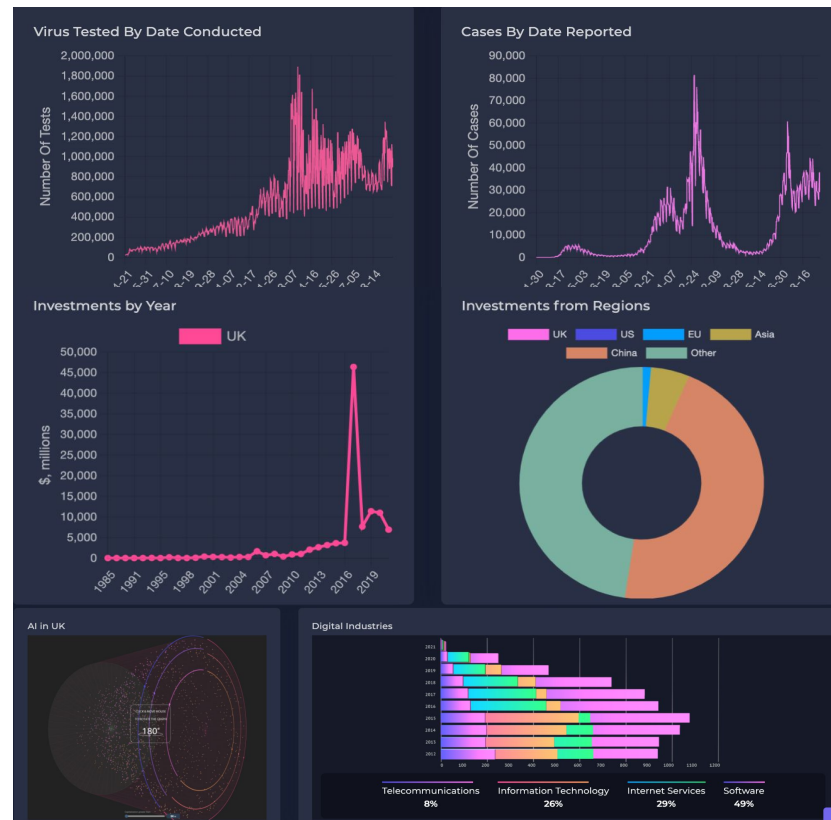
**40**  
Data Points



# Dashboard Features

Digital UK Ecosystem Dashboard applies big data analysis to identify healthcare, financial, and socioeconomic factors impacting the state of the economy in the UK.

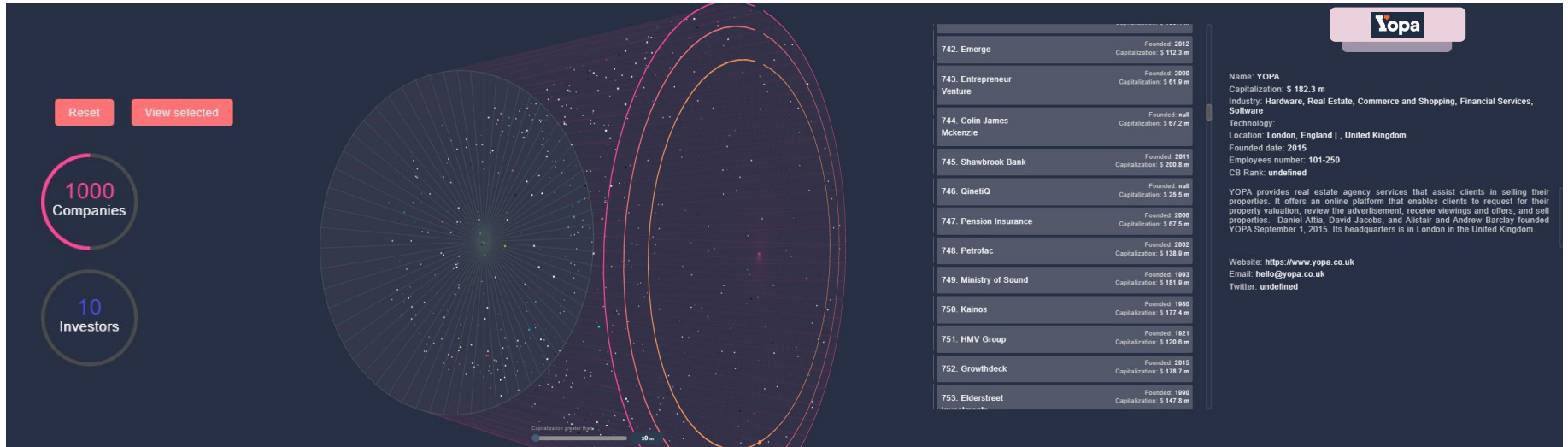
- **The UK COVID-19 Analytics Platform** comprises key indicators regarding the COVID-19 pandemic in the UK. The data on the platform is updated regularly to demonstrate up-to-date information.
- **Governmental Programs Regarding Digitalization in the UK Platform** describes the UK's leading government investment initiatives and programs. The dashboard includes more than 20 different governmental programs.
- **The Longevity Industry in the UK Platform** shows key parameters of the Longevity Industry in the UK. Additionally, the dashboard provides healthcare parameters such as the number of hospitals, hospital beds, etc.
- **The Investment Analytics Platform** indicates the state of investments in the UK and provides a general overview.



# Big Data Advanced Visualization System

The Next-Generation visualization IT platform provides a seamless user experience, gained by the intuitive user interface and simplicity. Despite its simplicity, the platform is backed by the most advanced and complex technologies.

This IT platform consists of an extensive and comprehensive database, classified into different types of entities, ranging from companies to investors, non-profit organizations, research labs, etc. Furthermore, the platform is being continuously updated with real-time industry developments and is in a constant state of expansion and refinement, with substantial additions planned in the next stage, including automation of data aggregation and advanced statistical tools with machine learning and extensive data analysis to enable hidden insights, connections, trends, and tangible, pragmatic answers to key strategic questions to be delivered under the weight of even larger amounts of data.

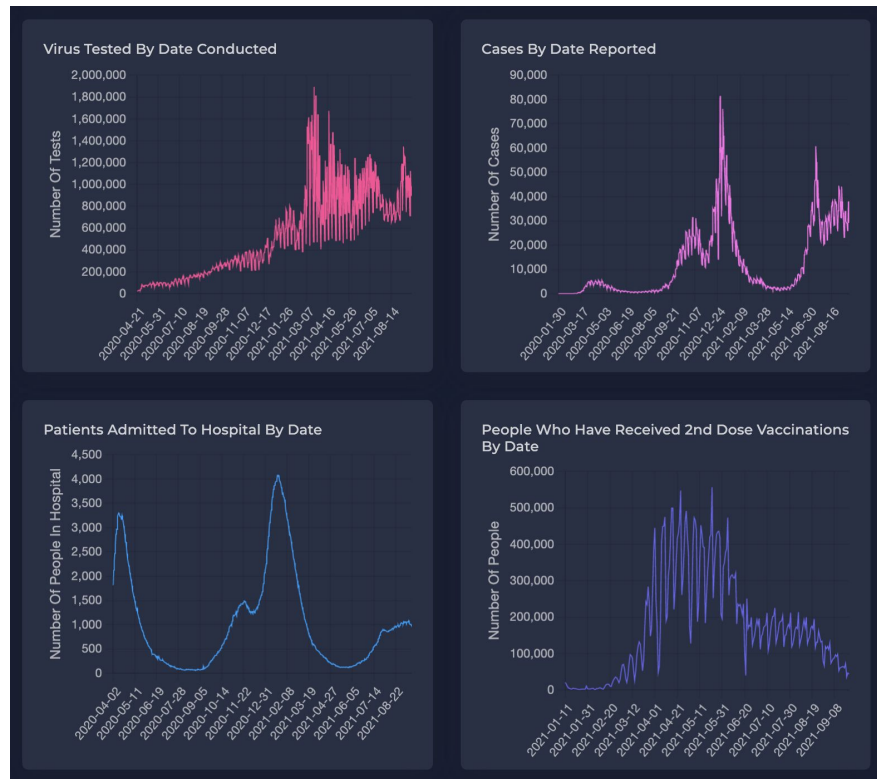
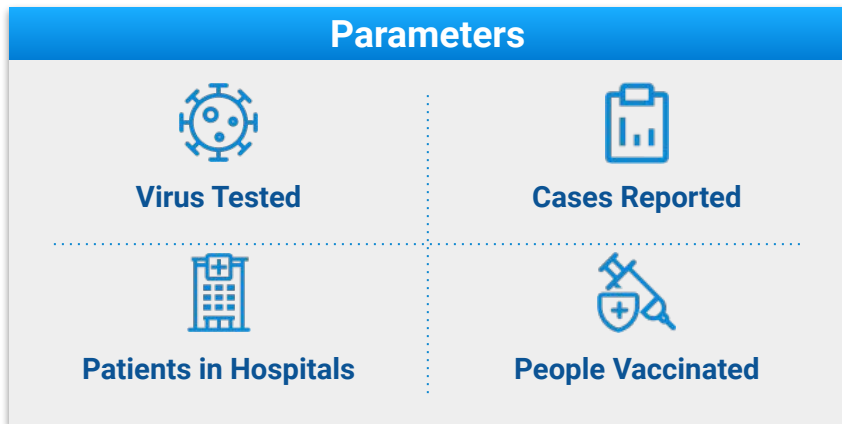




# COVID-19 Analytics in the UK

In response to the global coronavirus pandemic, Deep Knowledge Group created a real-time analytical dashboard to conduct the UK COVID-19 analytics, leveraging quantitative Big Data Analysis.

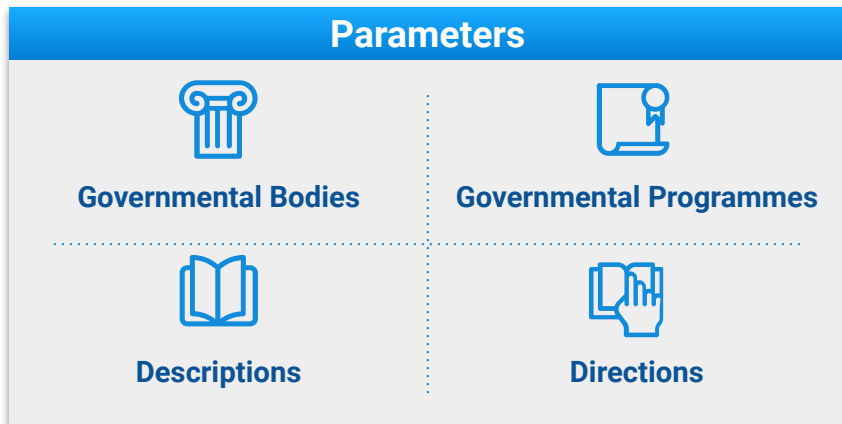
The majority of the group's COVID-19 analytics is published in an open-source manner, free of charge, to provide the fact-based and unbiased information necessary to forecast the pandemic waves.



# Government Investment Initiatives and Programs

Governmental Programmes Regarding Digitalization in the UK Platform is part of the Digital UK Ecosystem Dashboard that describes the main government investment initiatives and programs in the UK. The dashboard includes more than 20 different governmental programmes.

One of the programs included into the platform is the European Regional Development Fund that targets investment in R&D technology and offers a mix of grant and financial instruments to support Northern Ireland SMEs.

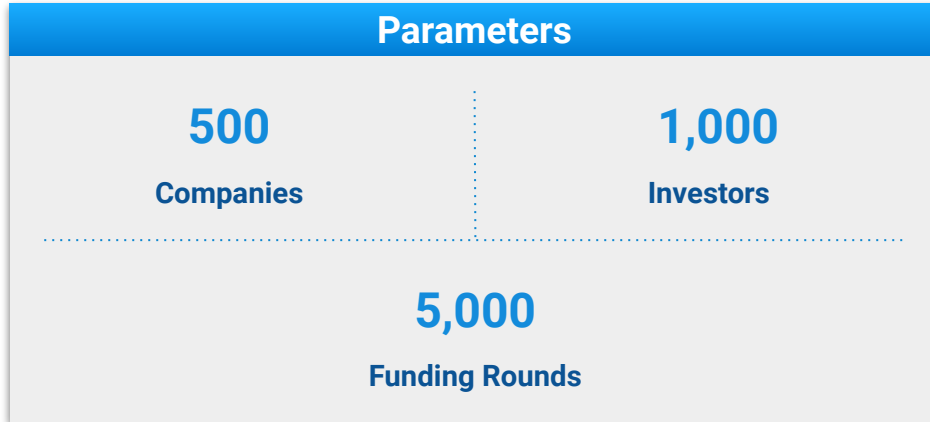


NAME	WEBSITE	DESCRIPTION	DIRECTIONS
European Regional Development Fund	<a href="https://ec.europa.eu/regional_policy/en/funding/erdf/">https://ec.europa.eu/regional_policy/en/funding/erdf/</a>	The European Regional Development Fund (ERDF) targets investment in R&D technology and offers a mix of grant and financial instruments to support Northern Ireland SMEs.	R&D technology, development for SMEs
Regional Growth Fund	<a href="https://www.gov.uk/guidance/understanding-the-regional-growth-fund">https://www.gov.uk/guidance/understanding-the-regional-growth-fund</a>	The Regional Growth Fund (RGF) has supported eligible projects and programmes raising private sector investment to create economic growth and lasting employment. Investing £2.6 billion to help businesses in England to grow, RGF is expected to create or safeguard around 289,000 jobs.	
NBV Grant for Enterprise	<a href="https://www.gov.uk/business-finance-support/nbv-grant-for-enterprise-east-midlands">https://www.gov.uk/business-finance-support/nbv-grant-for-enterprise-east-midlands</a>	Grants to support growth of micro and small and medium-sized businesses (SMEs) in Derbyshire, Nottinghamshire and Greater Lincolnshire.	SMEs support
Mansfield District Council	<a href="https://www.mansfield.gov.uk/business-support-1/business-grant-schemes-1/">https://www.mansfield.gov.uk/business-support-1/business-grant-schemes-1/</a>	Mansfield District Council supports both new entities and already established or relocated businesses from different industries in the Mansfield region.	Businesses support
Mansfield District Council	<a href="https://www.mansfield.gov.uk/business-support-1/business-grant-schemes-1/">https://www.mansfield.gov.uk/business-support-1/business-grant-schemes-1/</a>	Mansfield District Council supports both new entities and already established or relocated businesses from different industries in the Mansfield region.	Businesses support
North East LEP	<a href="https://www.northeastlep.co.uk/projects-and-funding/funding/">https://www.northeastlep.co.uk/projects-and-funding/funding/</a>	North East LEP is working with its regional partners and government to secure funding for the region that enables the development of critical assets and infrastructure to support growth for the area. The North East LEP manages multi-million-pound investment programmes designed to improve and support the North East's economy. Over the period 2015-2022, its investment programmes are valued at over £760m.	Infrastructure
Government Funding for Manufacturers to Go Digital	<a href="https://www.gov.uk/government/news/8-million-government-boost-for-manufacturers-across-england-to-go-digital">https://www.gov.uk/government/news/8-million-government-boost-for-manufacturers-across-england-to-go-digital</a>	New £8 million government funding for small and medium sized enterprises (SMEs) to help them modernise, go digital and create new jobs. The funding, part of the government's Made Smarter Adoption programme, will support up to 1,000 small and medium sized manufacturers, across the North West, North East, Yorkshire and the Humber and the West Midlands regions, in adopting digital technology.	Digitalisation

# Longevity Industry in the UK

The Longevity Industry in the UK Platform is part of the Digital UK Ecosystem Dashboard that shows key parameters of the longevity industry in the UK. Apart from this, the dashboard also provides interested people with healthcare parameters such as number of hospitals, hospital beds and number of hospital beds per 10K people in UK.

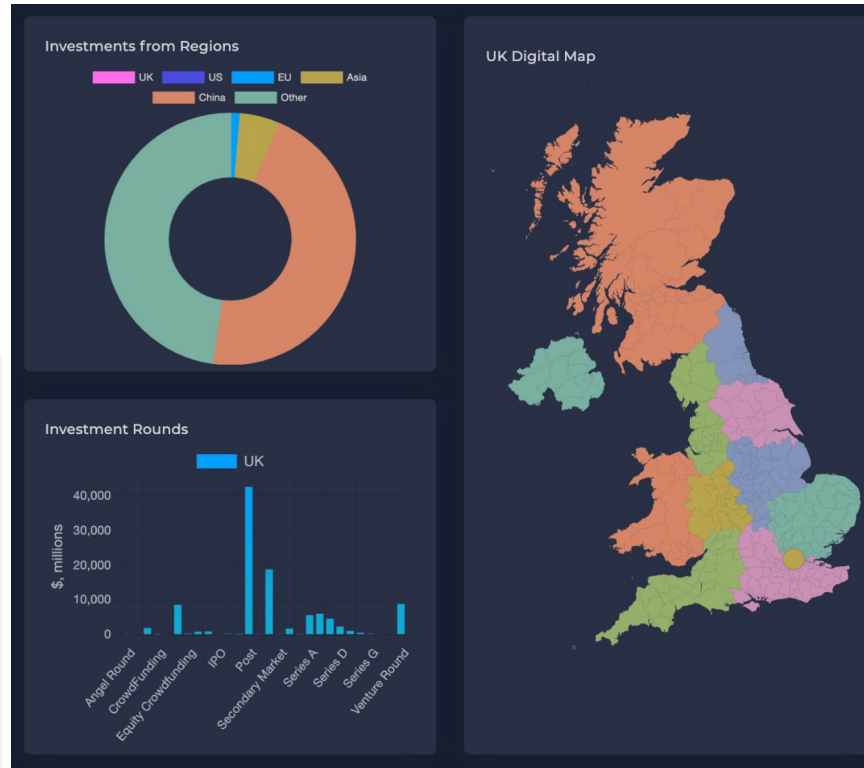
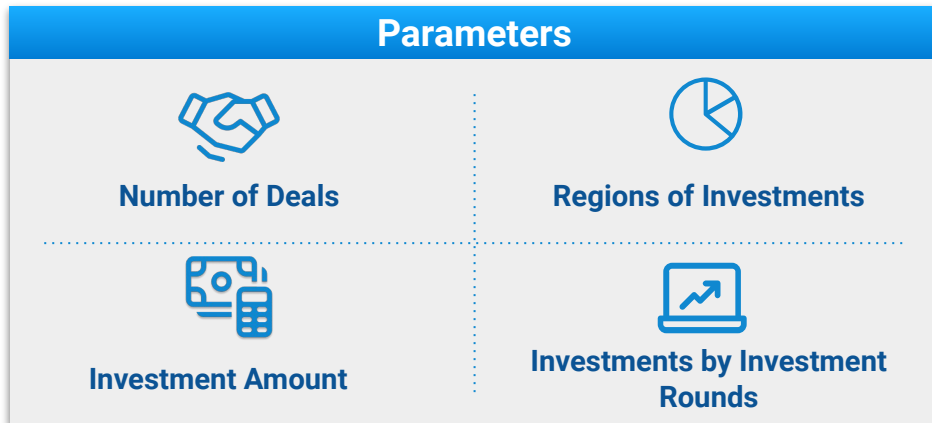
According to the dashboard, there were more than 100,00 hospitals in UK, with nearly 20 beds per 10K people.



# Regional Investment Overview

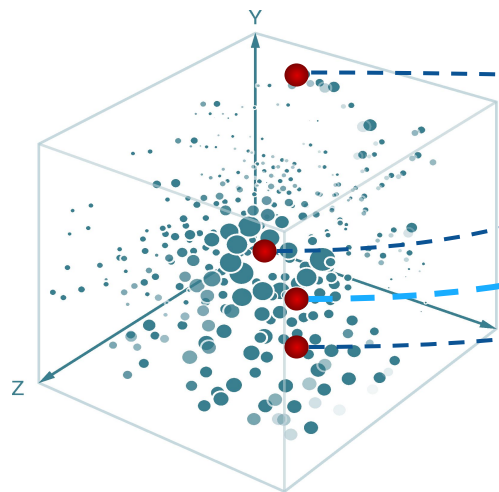
Investment Analytics platform offers a set of resources and capabilities, including a comprehensive database and user-friendly search, visualization, and matching capabilities, allowing for revealing actionable quantifiable insights about the investments in the UK.

This platform shows the historical data regarding the inflow of investments into the country, the total number of deals, the distribution of the investments by countries and regions, and investment rounds.

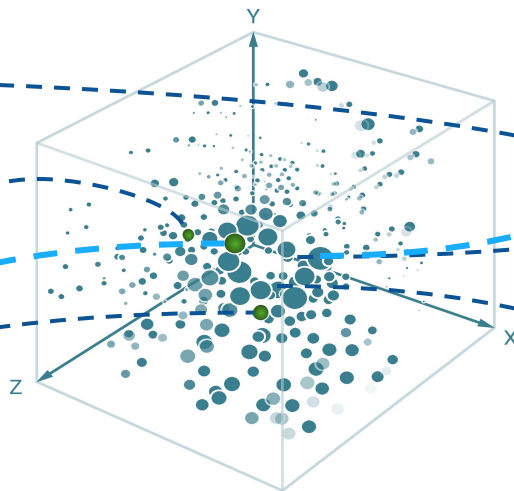


# Multidimensional Big Data Analytics Vector Space

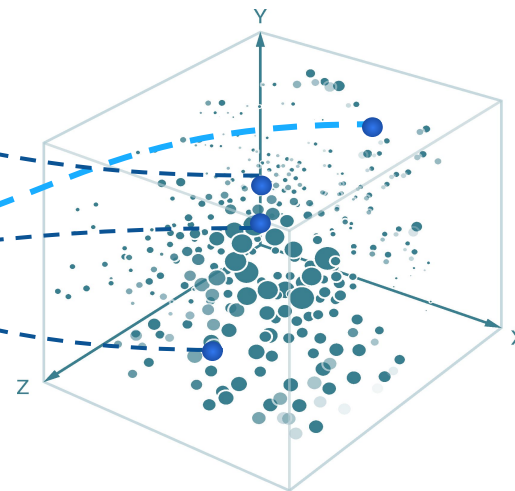
Investors



Companies Industry 1



Companies Industry 2



The system enables targeted and intelligent smart-matching between investors and portfolio candidates based on specified sectors and qualifying criteria (e.g. highly-targeted ratios of rankings in specific areas).

# Smart Matching Tool Concept

## STAGE 1

### Data Collecting and Pre-processing

Collect data about the spheres and activities of the company such as description from site, industries from different sources, or sphere of activities from news.



## STAGE 2

### Detection of Useful Information

Data analysis to identify helpful information for labelling and the company's next assignment – the company.



## STAGE 3

### Matching Algorithms

Data analysis to identify helpful information for labelling and the company's next assignment – the company.



### Surface matching

is simple Offers Service companies matching with Searching Service companies by tags.



### Deep matching or Proposal algorithm

a type of matching that includes NLP processing and assigning tags.

## Data Sources

News

Websites

Announcements

## Data Processing

DB Storage

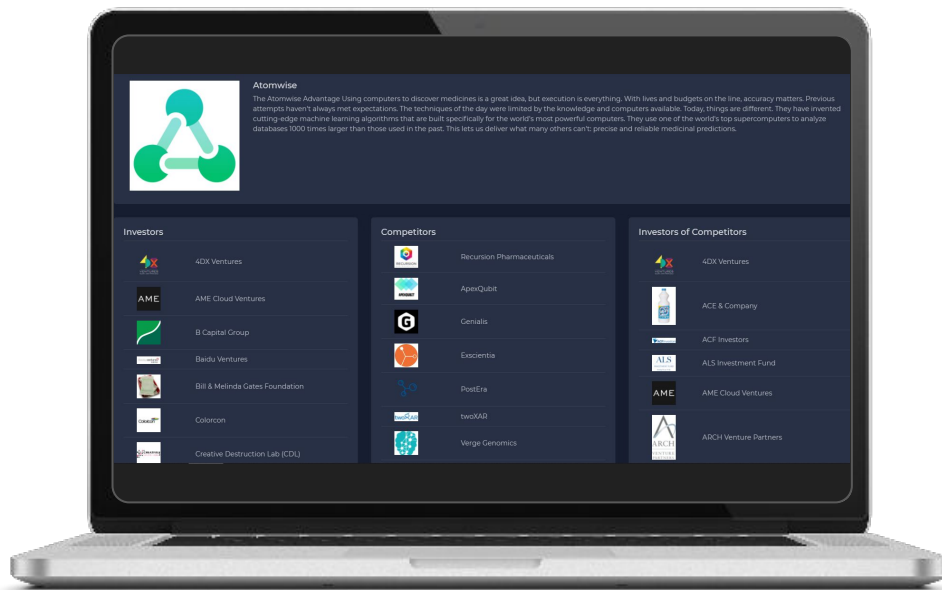
Pre-trained NLP Model

Data Normalization

Useful Data

# Competitors' Identification and Investors' Matching

DeepTech companies and investors may benefit from identifying their closest competitors and similar companies in terms of technologies, products, R&D processes, and team compositions. We provide them with **AI-driven big data analytics tools** that enable **smart investors' matching, calculation of the distance between companies** in terms of their business development, location of the companies and investors in multidimensional vector space. We also apply **smart automatized multiparametric companies clusterization** via the application of unsupervised machine learning.



## AI and Data Analysis Tools for Competitor' Identification

Unsupervised machine learning for companies clusterization

K-Means and GMM-based algorithms for companies clusterization

Calculation of the distance between companies in multidimensional space

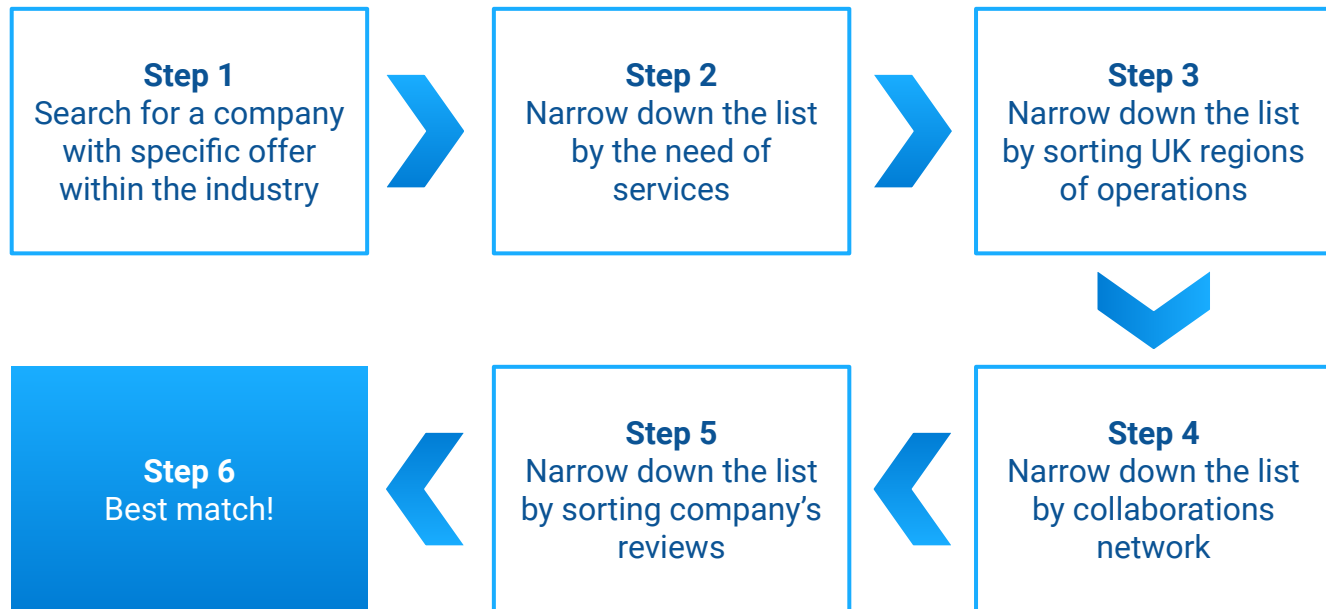
Convolutional neural networks for the identification of the companies with similar patterns

Using tag clouds to categorize companies

# B2B Smart Matching Platform Within the Industry



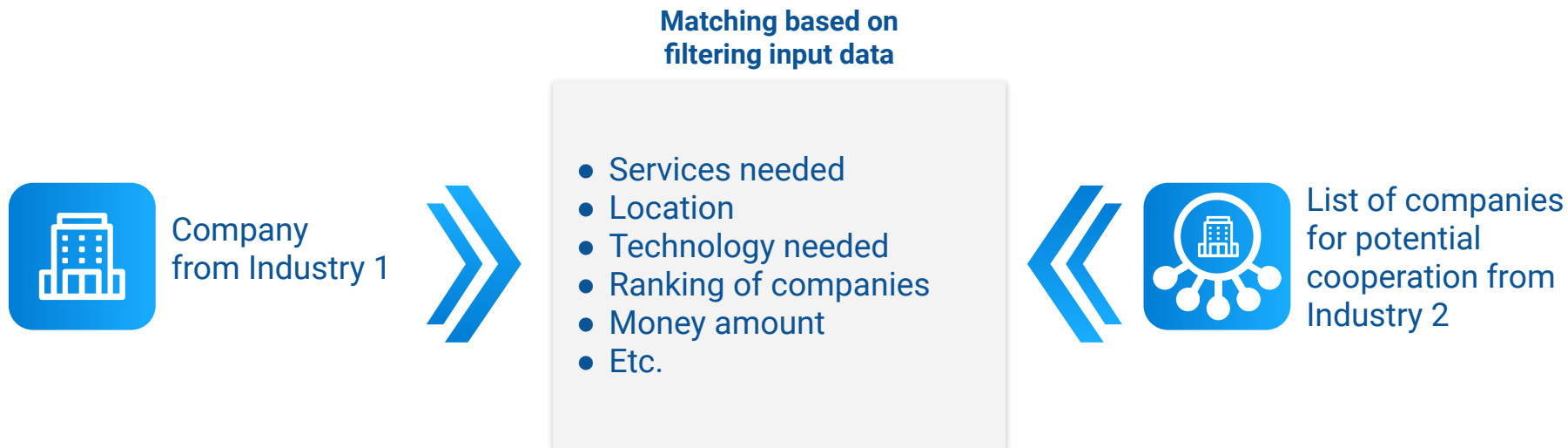
**Unique  
Company's Need**



B2B Smart Matching platform automatically connects different industry stakeholders based on user data input, gleaned from specific user searches, and identified via the user's historical activity on the platform. It enables companies to find the best possible solutions for cooperation and to build a mutually beneficial relationship. Matching occurs in accordance with labelling within the industry.



# B2B Smart Matching Platform for Cross-Industries Collaborations



Smart matching between industries' stakeholders based on their specific queries finds potential partners targeted to their specific needs and interests, such as economic and technological trends on various scales. Matching occurs in accordance with labelling for cross-industries collaborations. Users will be able to set the specific parameters and criteria for company/entity suitability themselves (e.g. A user is looking for a company specializing in X technology, product/service located Y miles from Z-location).

To find the best solution, the smart matching solutions platform is going stage by stage, sifting out from large general list companies which are inferior to competitors in one way or another.

# B2G Smart Matching Platform

B2G smart matching platform aims to find the best option of governmental support and grants for companies according to industries, UK regions of activity, technologies and operational directions of the latter. The matching platform automatically connects different industries' parties and governmental programs applicable for organizations based on data input by users and gleaned from specific user searches.



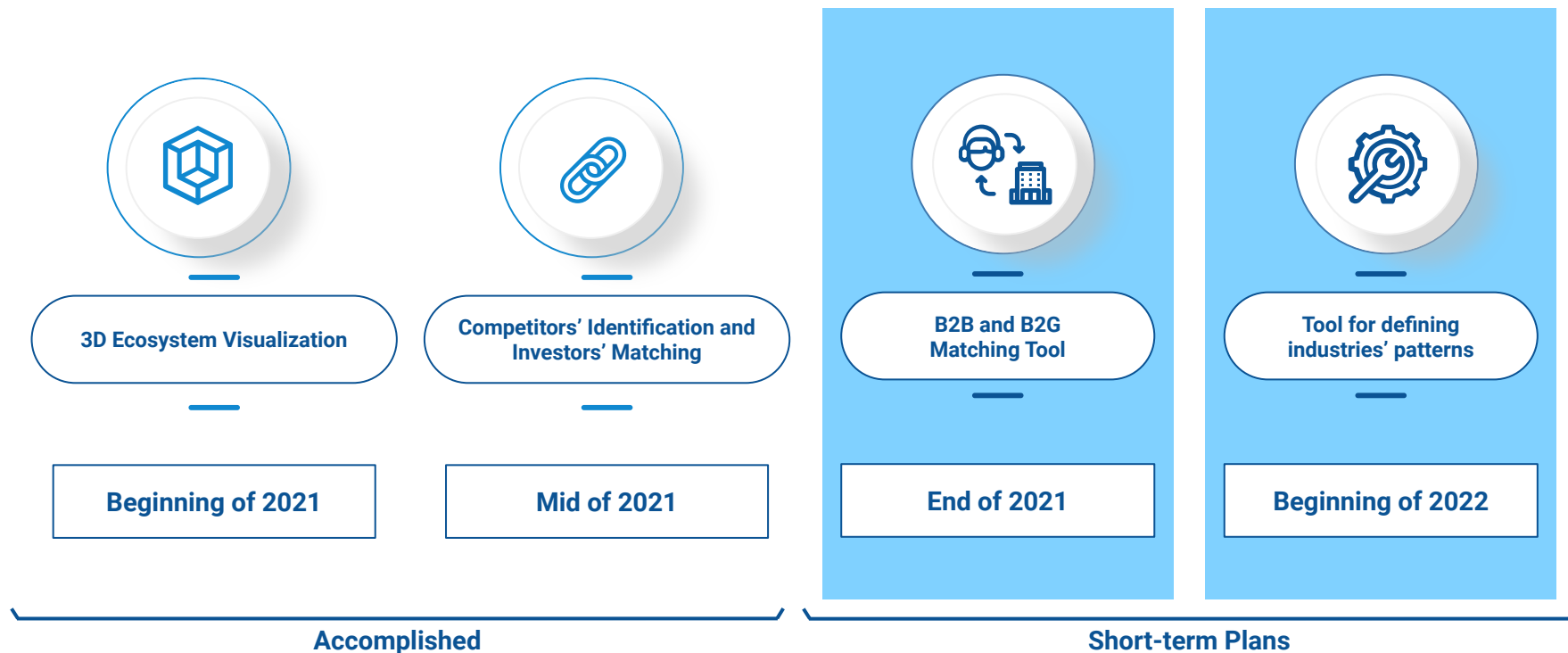
# Next-Level Tool for Defining Patterns During Cooperations

Companies from different industries begin to cooperate, thereby creating patterns for further interaction. In the future, 10-15 years from now, combining these patterns could form the basis of a new industry. DKG Dashboard aims to accelerate the process of interaction between companies from different industries (**Matching Tool**) and at the same time finds and defines these patterns to boost the creation of new industries.



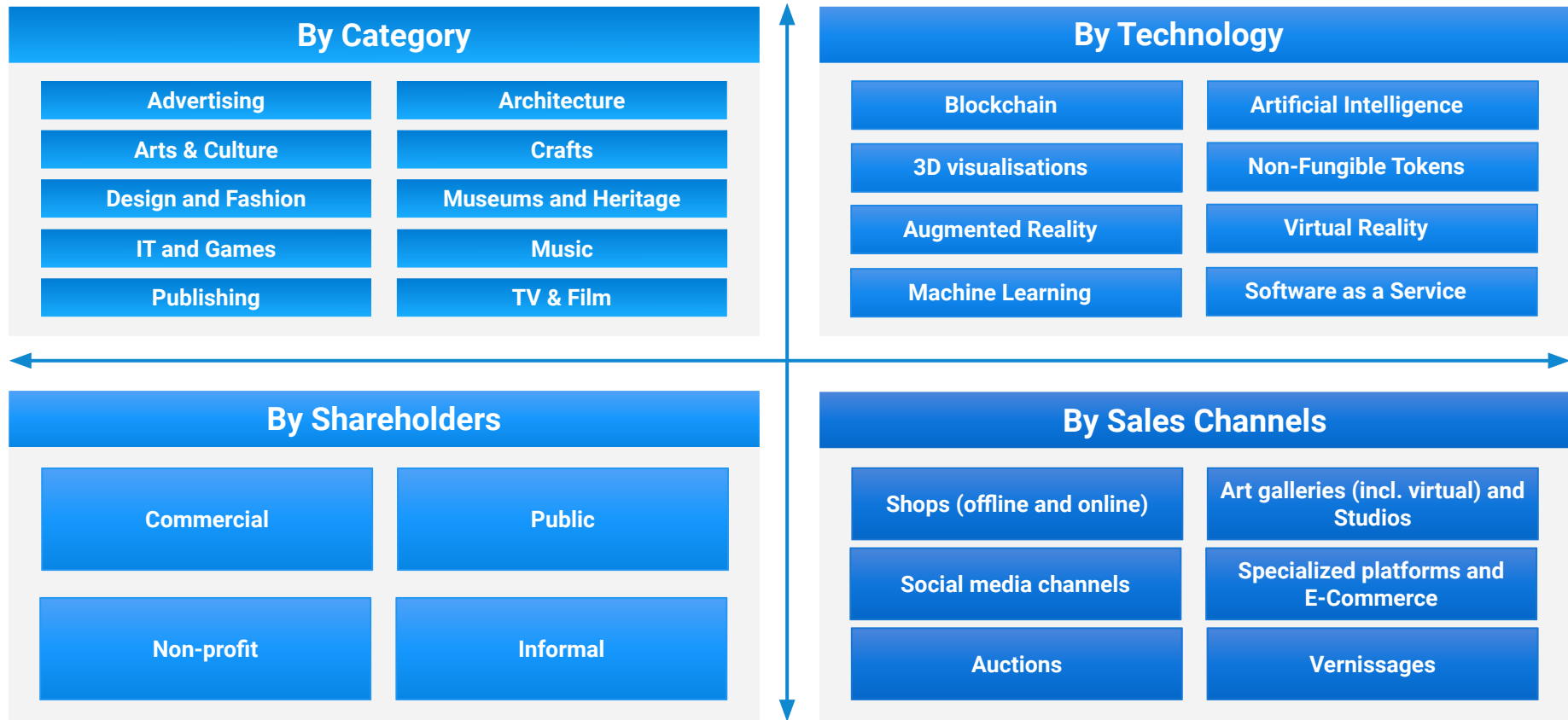
# Pipeline of Tools' Implementation

## Digital UK Ecosystem Dashboard Roadmap

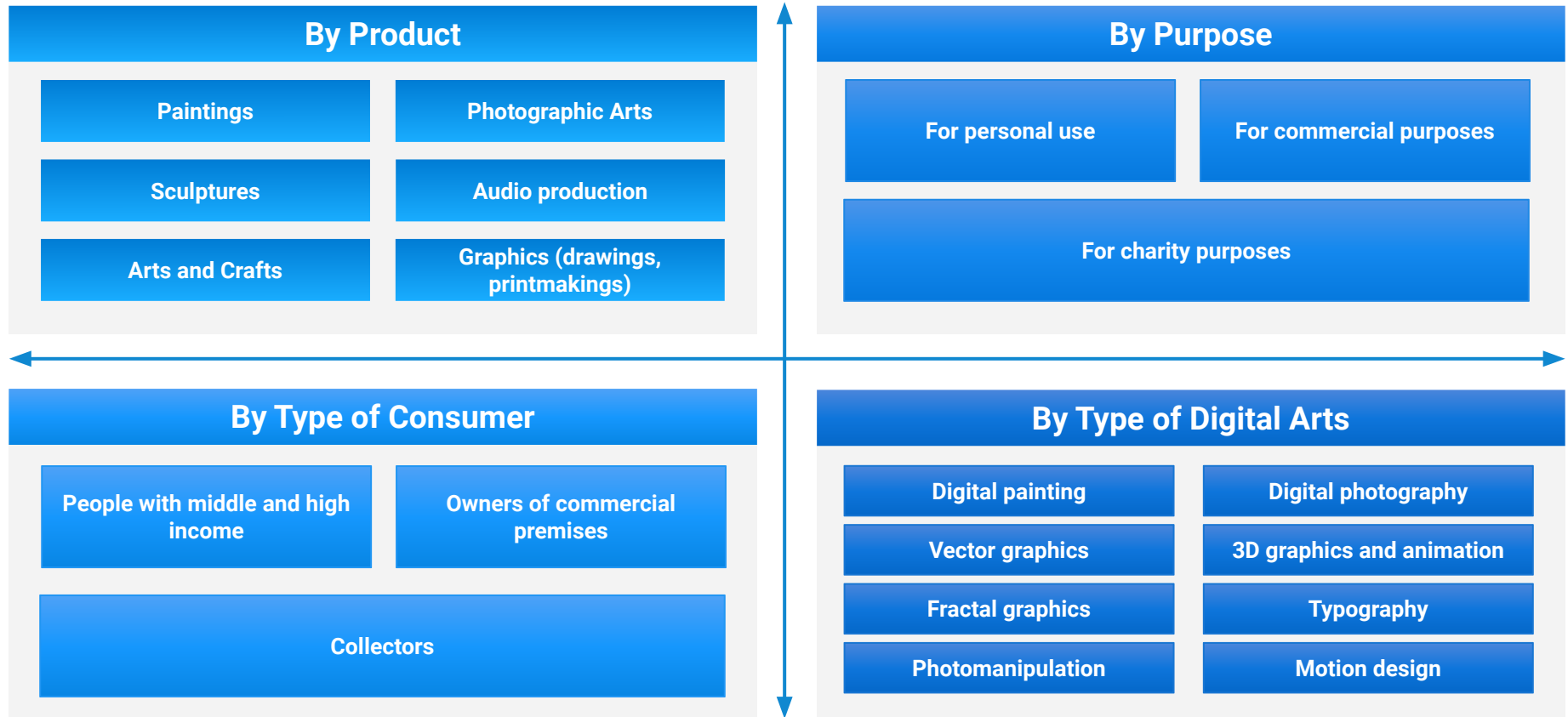


DKG CreaTech Platform

# Createch Industry Landscape Framework



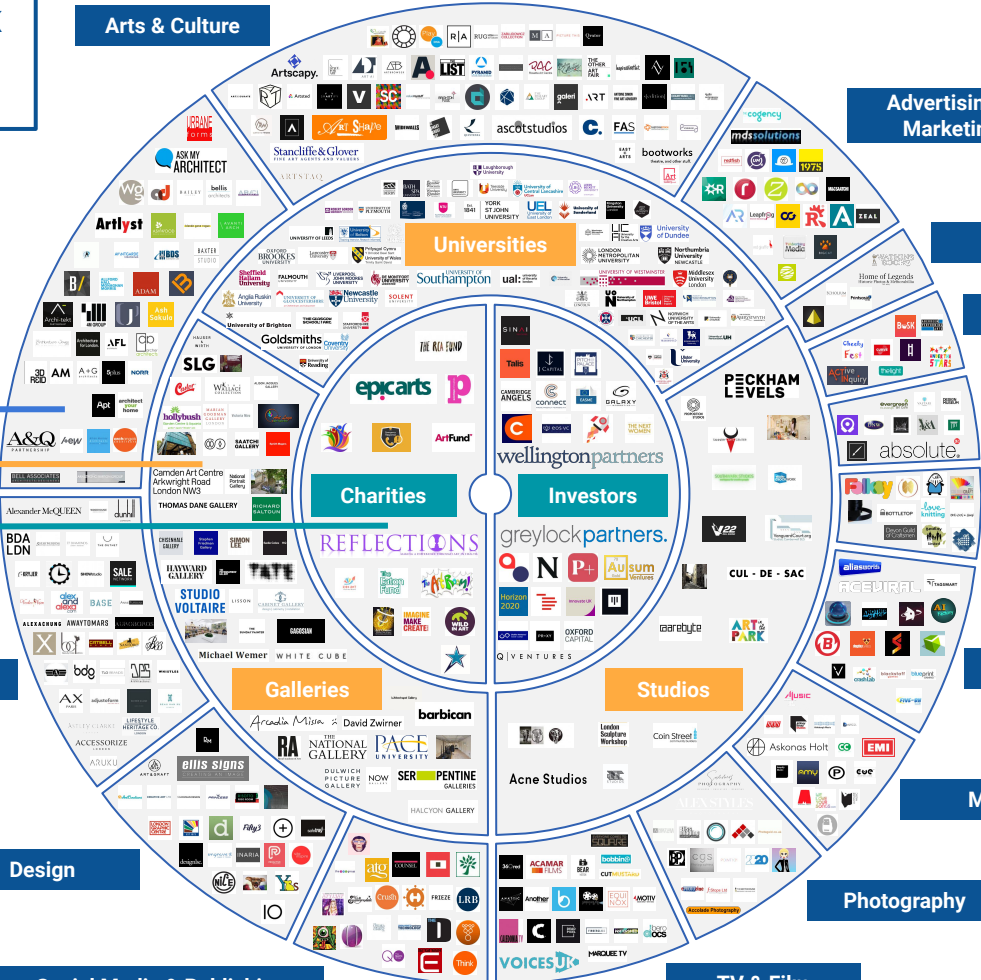
# Creative Projects Landscape Framework



**CreaTech Industry in the UK  
Landscape Overview  
2021 Q3**

**Companies - 300  
Investors - 20+  
Charities - 10+  
Galleries - 40+  
Studios - 10+  
Universities - 60+**

**Companies**  
**Universities, Galleries,  
Studios**  
**Charities & Investors**



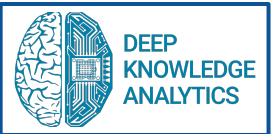
**Fashion**

**Design**

**Social Media & Publishing**

**Photography**

**TV & Film**





# Creative Industries Factsheet

**~1 in 8**

UK businesses are creative businesses

**95%**

of creative businesses employ fewer than 10 people

**>2 million people** are employed in creative industries in the UK

**12%**

of all UK service exports belong to the Creative Industries

**£422**

Median weekly earnings by employees\*

**£116B**

Contributed by CreaTech to the annual GVA

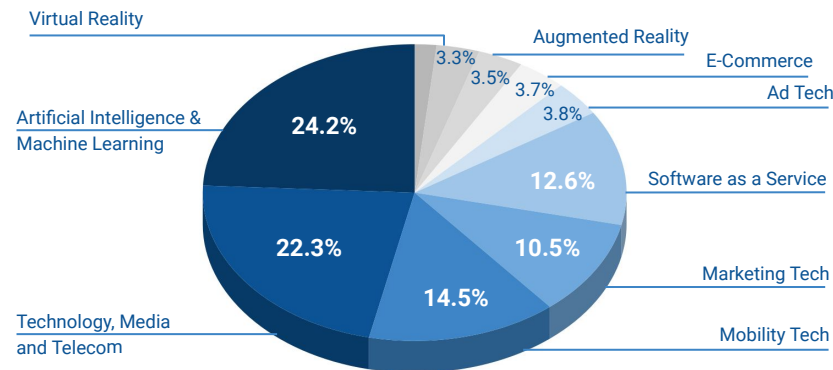
**£981.8M**

Raised by CreaTech companies in 2020

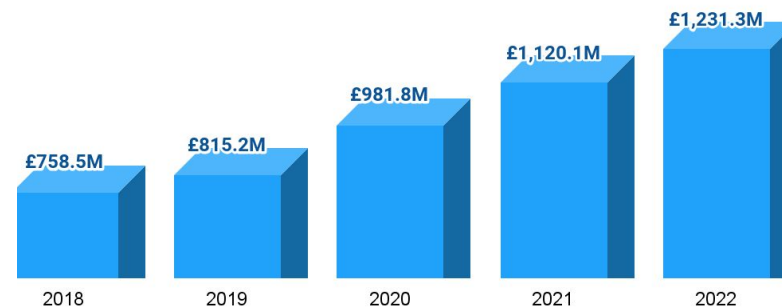
**64%**

Of investment came from UK investors between 2017-2020

## Creative Technology Companies by Area of Activity



## Investments in Creative Technologies in 2018-2022



# Creative Industries in the UK

The UK has a track record of introducing new advances in technology. These include many of the advances in the early days of computer science, as well as the first MP3 player, the first laptop computer, the first portable television, and the first 3D computer game. In the mobile content market, the UK is one of the leading app development hubs in Europe, as well as a recognised leader in visual effects, post-production and in other sectors where technology and creativity intersect.

## Why the United Kingdom?



### A Culture of Innovation and Creativity.

The UK has an open competitive environment in which innovators can develop ideas and collaborate, find sponsors and partners.

**Growth through CreaTech.** The UK has excellence in productivity, storytelling, data, crafts and gaming, which often serve as the foundation for CreaTech's technology-related innovation.

**A Stable IP and Business System.** The UK has a well-established transparent system for protecting technological innovation, as well as a stable business and political environment.

**Advanced Consumer Markets.** The UK provides technology companies with a vast market of savvy digital consumers and tens of millions of broadband connections.

**Diverse Workforce.** The UK's multicultural population, social liberalism and quality of life make relocation and recruitment an attractive prospect for global tech companies.

**Attractive to Investors.** UK tech businesses have attracted significant investment from overseas companies and private and venture capital firms.

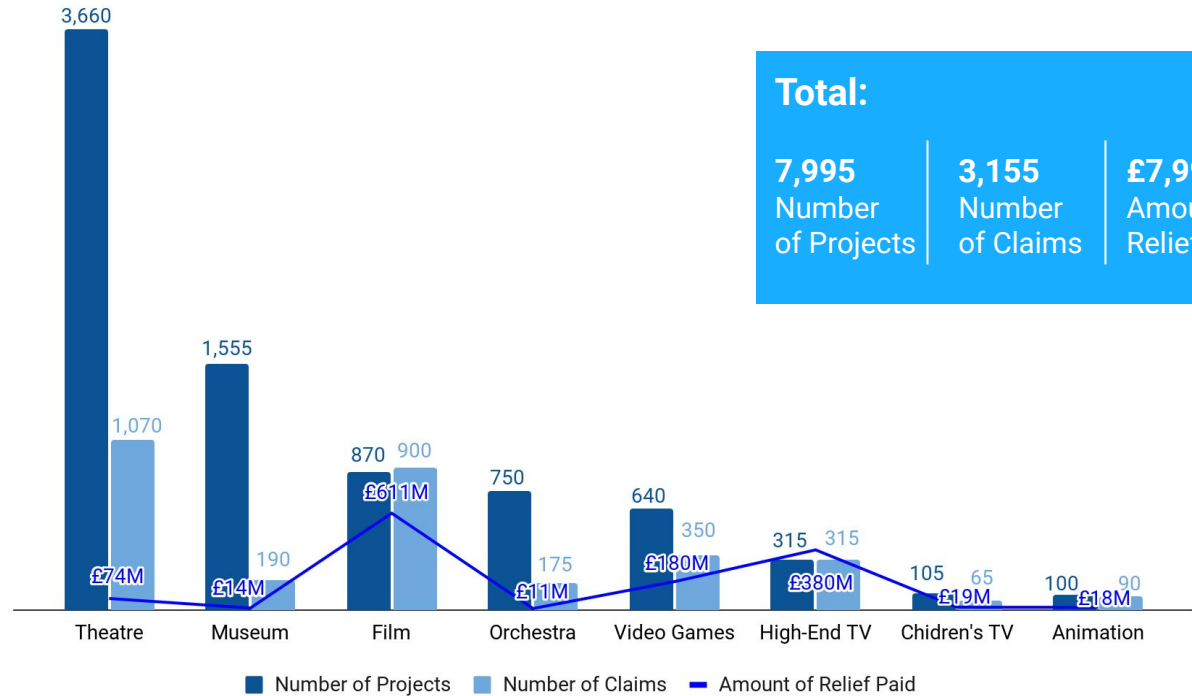
# Creative Industries In The UK: 2021 Statistics

The **cultural and creative industries account for over 5% of the total EU GDP**. The value of the global creative goods market has grown exponentially since 2002. These trends have coincided with the digitisation of the creative economy and the digitisation of artistic and creative works, including music, video production and publishing.

During the year ending March 2021, **£1.31B was paid in all tax credits for creative industries in the UK**. That is an 18% increase from the £1.11B per year paid in the year ending March 2020.

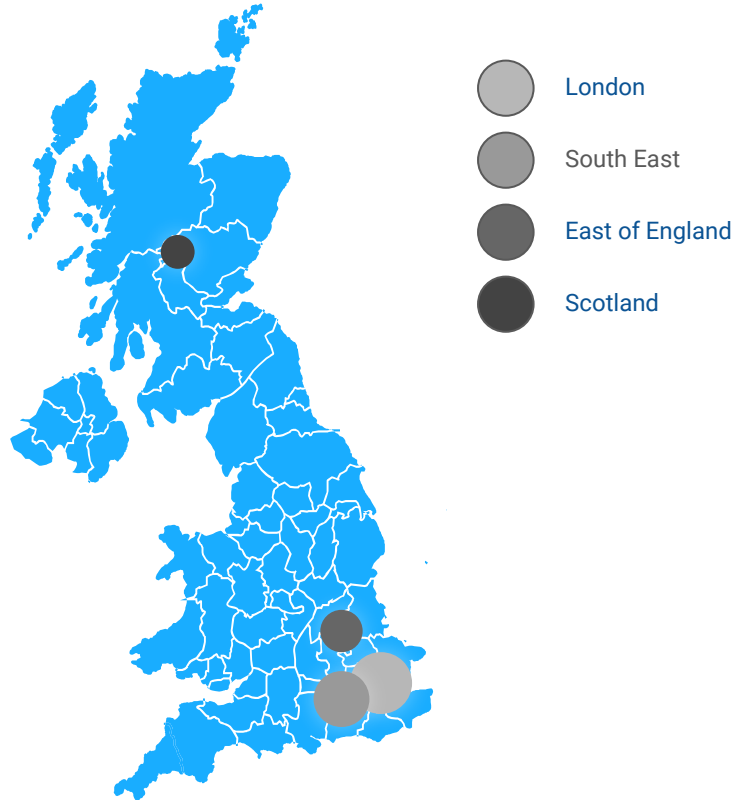
In 2021, tax breaks in film will account for nearly half of the total paid, and high-tech television (HETV) tax breaks will account for nearly a third of the total.

## Creative Industries in the UK: Statistics, 2020-2021



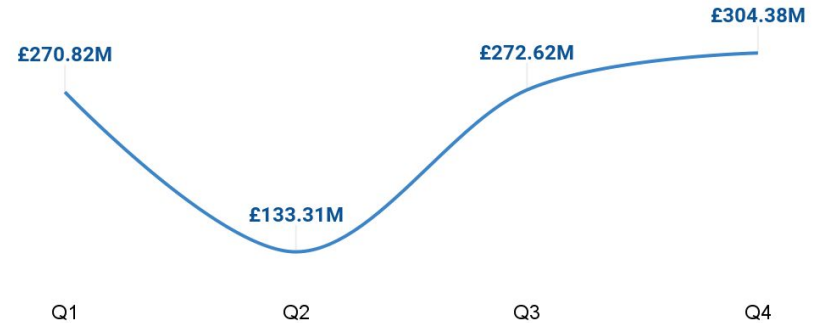
# UK Clusters of Investment In Createch Companies

## UK Clusters of Venture Capital Investment



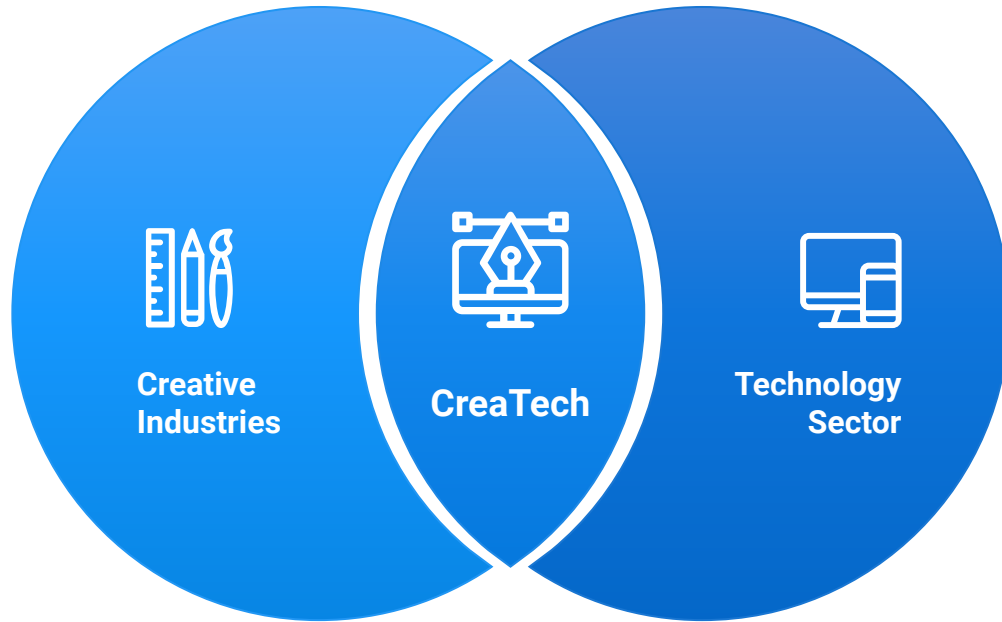
- Companies in London received £486M in VC investment, an increase from £352M in 2019.
- The South East of England raised £24M from 11 deals.
- The East of England raised £13M from 5 deals.
- Scottish CreaTech companies raised £7.5M in investment, an increase from £4.6M in 2019.

## Venture Capital Investment into UK CreaTech Companies by Quarter in 2020



# Createch As An Intersection Between Creative Industries And Technologies

## Connection Between Creative Industries and Technologies

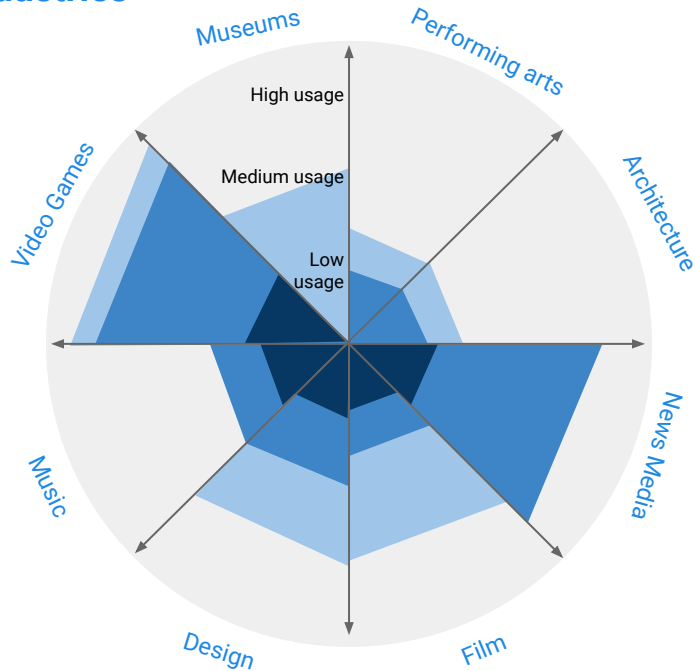


CreaTech, or Creative Technology, is used to describe new technologies aimed at improving and automating the delivery and use of creative services.

CreaTech is used to support companies, artists, investors, and consumers to better manage their operations and processes by applying specialised software and algorithms that are used on computers, smartphones, Internet of Things devices, etc.

The Creative Technology movement represents a pivotal movement for the UK, and its spread and development over the next decade will help lay the foundations for a prosperous, culturally rich and environmentally conscious age.

## Adoption of Emerging Technologies in Creative Industries



## AR/VR as One of the Most Used Technologies

Virtual and augmented reality has infused the cinema, video games, media and design industries with new immersive experiences.

In the video, online and mobile gaming segment, augmented virtual reality technologies **offer an enhanced user experience** for gamers, creating a realistic, fully immersive experience. Immersive media **can change the perception of news reading by bringing the event closer to the viewer**. The use of AR / VR in museums and galleries has been on the increase for some time as many have created AR / VR apps to **attract more visitors**. Making movies in virtual reality provides a new way to experience video content when viewers are inserted into a story.

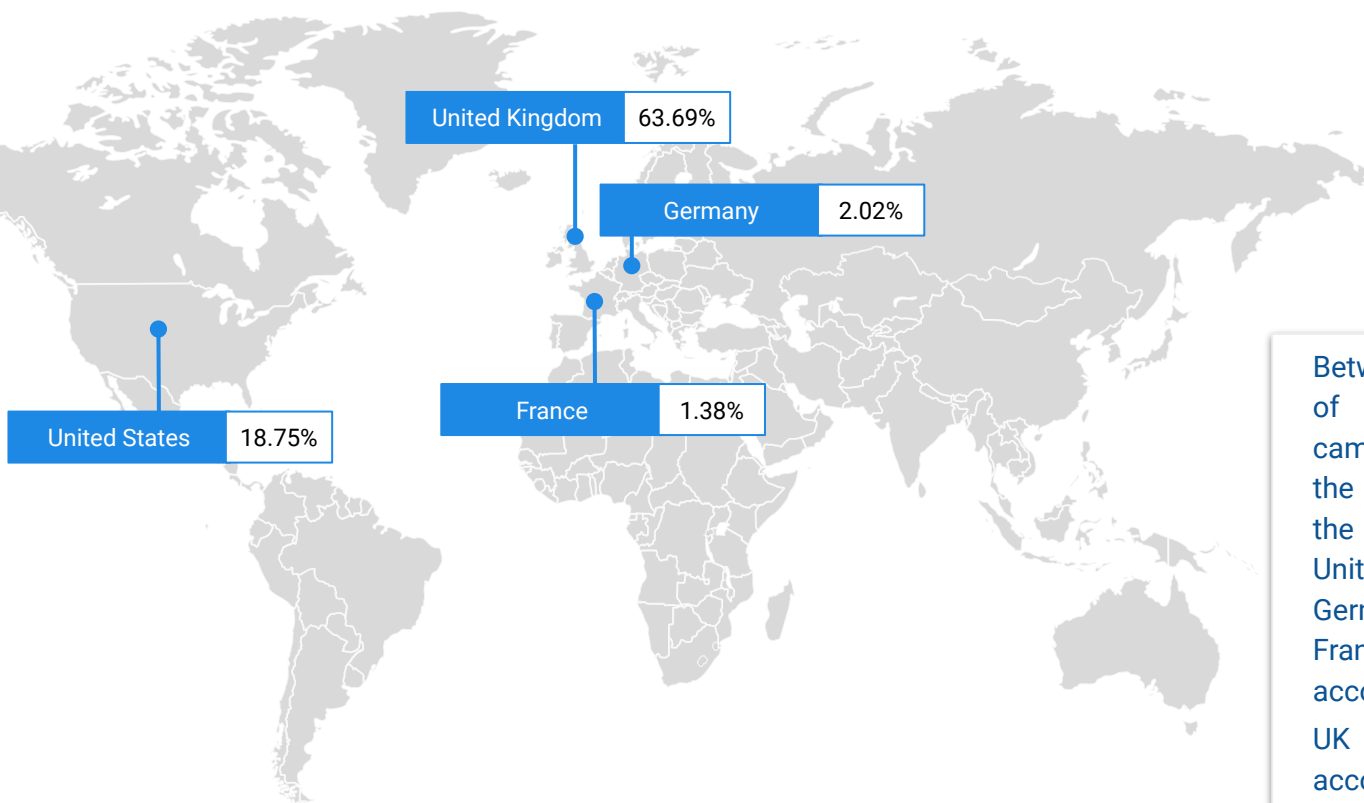
Despite exciting examples of use, **the proliferation of AR / VR in the creative industries raises a number of ethical and social issues**. For example, immersive media can be problematic as AR / VR in the news can create bias or convey unwanted emotions.

AR/VR

AI

Blockchain

# Source Country Of Investment In CreaTech in 2017-2020

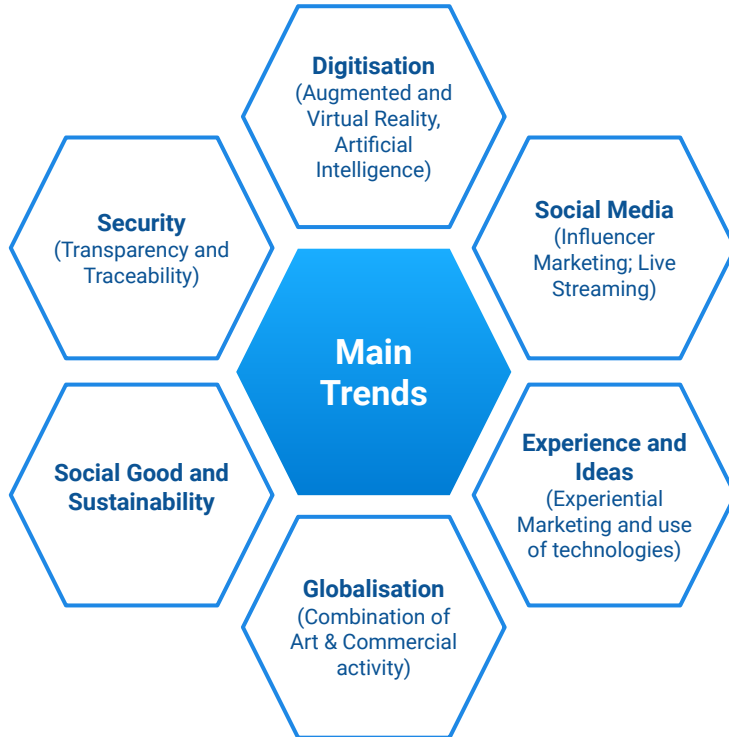


Between 2017 and 2020, 64% of investment in CreaTech came from UK investors. In the same time period, 19% of the deals came from the United States, 2% came from Germany and 1.4% came from France. Other countries accounted for 14%.

UK and US investors accounted for 82% of CreaTech investment in 2020.

# Main Trends And Obstacles In The UK Creative Industries

## Main Trends



## Main Obstacles



### Lack of Investments

Although, in 2020, the UK's creative sector managed to receive £157B in support from the government to stay afloat, the UK Creative Industries remain highly under-capitalized.



### Skills Shortage

Even though the education system aims to integrate creativity into the school curriculum to make students pursue a career in the creative sector, long-term unpaid internships lead to unequal access to opportunities.



### Innovations

There are certain requirements to be followed by companies in order to be eligible to claim corporation tax benefits for qualifying expenditure.



### Weak Skill and Employment Policy

Creative industries vastly rely on freelancers, who are most of the time excluded from direct government support. As a result of the pandemic, a negative trend in the freelance employment creative sector was noticed.



# DKG Createch Platform

This teaser is just the first step towards creating a feature-rich platform. From this teaser, **DKG plans to initiate a platform where various participants of the creative industries and emerging technologies will be gathered.** The platform will act as a place for discussions between representatives of the creative and DeepTech industries.



## Creative Industries Parties



## DeepTech Community

Are the creative industries ready to embrace emerging technologies?

What impact do technologies have on the creative industries?

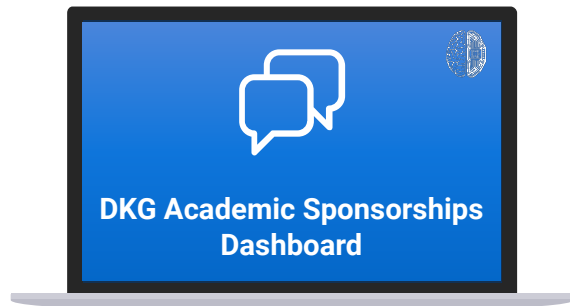
How and where can parties in the creative industries find out about potential interesting technologies?

Is there a need to introduce emerging technologies into the creative industries?

# Academic Sponsorships Dashboard

# Academic Sponsorships Dashboard

Philanthropists, Sponsors, Donors, etc.



Student Societies

Supporting the activities of DeepTech sector students and new graduates is of paramount importance to helping high-impact industries achieve real-world progress in the delivery of their potential humanitarian benefit. Deep Knowledge Group and its various subsidiaries are proud sponsors of a number of official student societies at top-tier universities and academic institutions, and are deeply committed to the support of student groups whose members will soon become the next generation of industry professionals driving humanitarian DeepTech progress. In order to help other organizations more efficiently and intelligently sponsor the activities of official student organizations, Deep Knowledge Group is building a **Big Data Academic Sponsorships Dashboard** that will provide deep analytics, social-impact benchmarking and region, cause and industry/sector filters of thousands of official university-associated student societies. This dashboard will help industry leaders discover student societies that are relevant to their strategic interests to sponsor, support and partner with.



Personal honor board for each sponsor on the dashboard, where the results achieved through donations will be described.

# Academic Sponsorships Dashboard Components



KYC procedures will ensure the integrity of donors, and enable a “one-click” sponsorship experience by pre-validating sponsors before they can actively utilize the platform.



Interactive search and multiparametric filter capabilities to enable donors to efficiently discover societies based on causes of interest, geography, and academic institution.



Sponsor-society smart-matching, in which sponsors fill in a questionnaire about their interests and preferences, and they are suggested societies that match their interests or provide the most impact in boosting personal brand.



Visualization mechanisms and video game-style incentives to gamify academic sponsorships, where potential donors will have digital avatars with visualized statistics, rankings and graphs.



Users will be able to see the other sponsors in shared societies and causes, and compare their own sponsorship statistics and scorings with others dedicated to the same causes.



The dashboard will feature donor benchmarking and highlight the top donors per month and per year in specific cause categories, and in specific humanitarian deliverables.

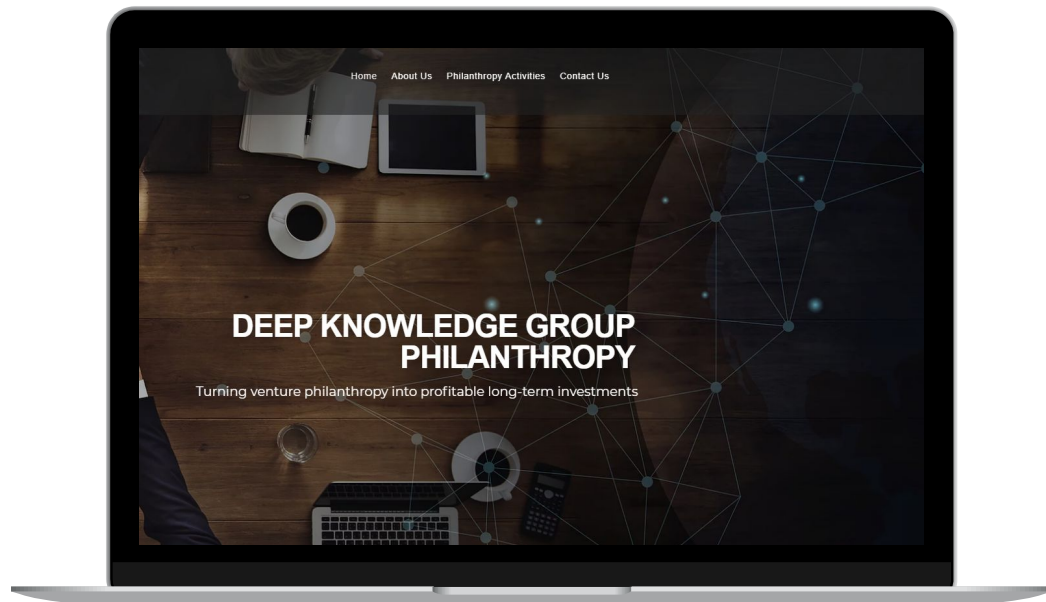


2 physical walls will be purchased and placed in a high-profile metropolitan locales (London, Geneva, etc), serving as “Halls of Fame” for top-scoring sponsors and donors, showcasing their names and faces.

The Academic Sponsorships Dashboard will enable philanthropically-minded corporations and individuals to simultaneously support social causes of interest, while gaining **personal brand association with some of the most well-branded, top-tier academic institutions in the world**. This will enable a quick, efficient mechanism for mutual benefit to both sponsors and student societies, substantially broadening the potential base of financial support available for student societies, while also establishing a clear and easy-to-use mechanism for personal brand development for corporate and individual sponsors and donors.

# Non-profit Activities

Deep Knowledge Group's for-profit as well as non-profit activities are structured in order to support, develop and leverage the power of DeepTech for socially-inclusive humanitarian benefit, based on the foundational principle that technological innovation is the key driver and most efficient tool for improving quality of life, safety, stability and growth potentials for global society, and the belief that the highest return on investment is not just profit, but ethical returns and the delivery of added quality of life and developmental opportunities for humanity. Deep Knowledge Group's analytical subsidiaries have produced a number of special analytical case studies on industries focused on social good and humanitarian benefit, highlighting crucial work being done by Non-Profits, Governmental Organizations and NGOs. Its analytical subsidiaries also work actively with national and international policy organizations to help drive growth in innovation economy sectors, and have produced a number of reports in coordination with the UK All-Party Parliamentary Groups on AI and Blockchain.



[www.deep-knowledge.org](http://www.deep-knowledge.org)

# DeepTech Innovation for Maximum Social Impact and Humanitarian Benefit

All of Deep Knowledge Group's activities (from for-profit to non-profit) are structured in order **to support, develop and leverage the power of DeepTech for socially-inclusive humanitarian benefit**, based on the foundational principle that technological innovation is the key driver and most efficient tool for improving quality of life, safety, stability and growth potentials for global society, and the belief that the highest return on investment is not just profit, but ethical returns and the delivery of added quality of life and developmental opportunities for humanity.



## Charity Analysis

Delivering deep analysis and social-impact benchmarking of charitable organizations, which allows founders, charity leaders, trustees, grant-makers, philanthropists and others to derive tangible insights on where to focus their money and time to achieve maximum human impact.



## Data Driven Research

Advanced data driven analytics repurposed from next-generation financial projects to the non-profit and charity sector, backed by AI, big-data analytics and advanced visualization tools.



## Big Data Aggregation and Advanced Visualisation

Automatized data parsing, aggregation, optimization, machine learning and deterministic scoring algorithms, charities and donations smart-matching.

# Deep Knowledge Group: Longevity Policy and Governance Initiatives



Metabesity and Longevity:  
USA Special Case Study.  
Joint Project with Targeting  
Metabesity 2019  
Conference in Washington.  
Policy Proposal to the US  
Congress.

Link to the Case Study [here](#)



Proposal to the UK All Party  
Parliamentary Group  
on Longevity:  
“National Strategy for Five  
More Years of Healthy Life  
Expectancy in the UK.

Link to the Proposal [here](#)



Response to the World  
Health Organization's  
"Decade of Healthy Aging:  
2020 – 2030 Draft Zero  
Action Plan".

Link to the Response [here](#)



Proposal to the UK House  
of Lords Science and  
Technology Committee's  
“Ageing: Science,  
Technology and Healthy  
Living” Evidence Inquiry.

Link to the Proposal [here](#)

# Investments and Donations: Spotlight on Longevity

Deep Knowledge Group continually supports companies, startups, and projects aligned with one of our key strategic goals: leveraging the transformative and democratizing power of knowledge and technology to transform the problem of aging into the opportunity for Longevity, and the addition of extra Health-Adjusted Life Expectancy (HALE) and Quality-Adjusted Life Years (QALY) for global humanity. In addition, we believe that the social impact from our donations and investments are even more critical than financial return. Pursuing these values in 2021, we are:



**Investing in Longevity Card** - an innovative company developing integrated AgeTech-WealthTech solutions and a sophisticated Longevity Product and Service Marketplace to enable people of all ages to maximize their health, wealth and Longevity

**Supporting Oxford and Cambridge University Longevity Societies** to educate new generations on professional prospects in Longevity

**Supporting the activities of 10+ analytical agencies** to develop relevant research and sophisticated Longevity industry analytics

**Investing in Longevity Biomarkers companies** to facilitate accelerated Longevity Industry development, growth and stability



# Longevity.International: One-Stop Platform for Longevity Industry

**Longevity.International** is a first-of-its-kind, open-access non-profit decentralized Longevity Industry Knowledge and Collaboration platform launched by 20+ Longevity non-profits to promote a greater degree of synergy, efficient cooperation, and discussion among a variety of Longevity Industry participants, including companies, investors, non-profits, academic labs and R&D hubs, governmental bodies and policy makers.

The platform utilizes sophisticated data-driven analytics provided by Aging Analytics Agency and AI powered advanced IT solutions (including interactive industry databases with intelligent multi-parametric search and filter capabilities, as well as industry participant smart-matching engines to recommend and facilitate intelligent cooperation and collaboration).

## Institutional Co-Founders



Databases  
Analytics  
Networkings  
Community



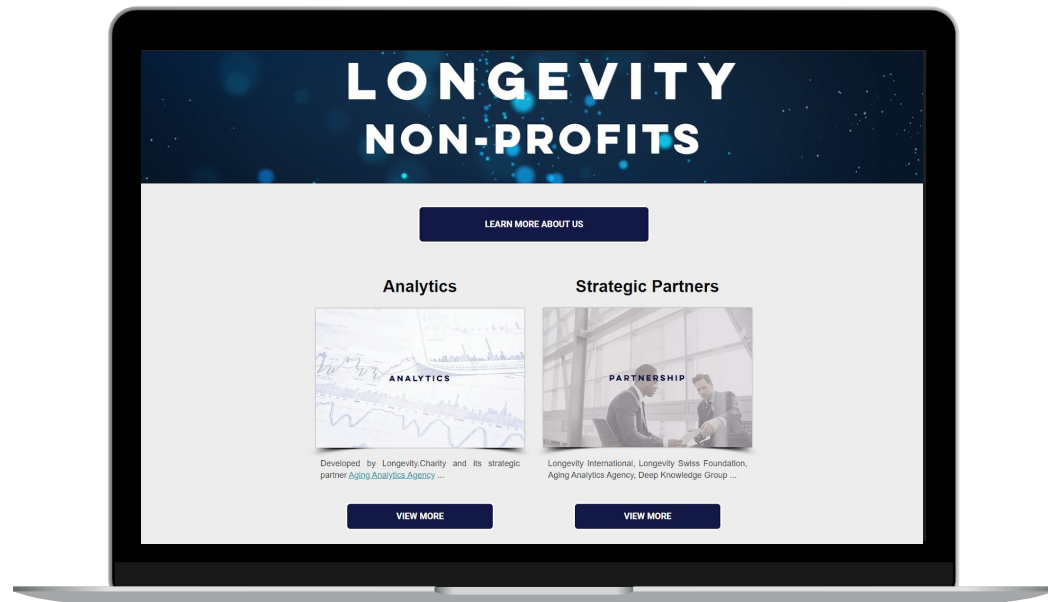
Personalities  
News  
Jobs  
Crowdfunding

# Longevity.Charity: Portal for News and Analysis of Longevity Charities

Longevity.Charity, launched by the Deep Knowledge Group-sponsored non-profit decentralized Longevity Industry Knowledge and Collaboration platform Longevity.International, is an open-source non-commercial project and platform seeking to provide deep analytics and social-impact and monetary efficiency benchmarking of the Longevity Non-Profits sector.

The platform will feature benchmarking and ranking of Longevity-focused non-profits according to donation efficiency and social impact, to enable platform users to more efficiently structure their donations to achieve maximum practical and humanitarian impact per dollar.

The platform will also feature AI and machine-learning mediated smart matching and extensive non-profit categorization in order to provide automated recommendations for users on which non-profits most closely match their social cause and interest preferences.



[www.longevity.charity](http://www.longevity.charity)

# Deep Knowledge Group Philanthropic Priorities (2021-2023)

2018-2020



DKG is the **sponsor of the Cambridge University Longevity Society and the Oxford University Aeronautical Society**, and is actively working on dramatically increasing its budget for support of DeepTech-related university societies.



Deep Knowledge Group is **investing in Longevity Banking Card** to provide individuals with integrated AgeTech-WealthTech solutions for maximizing health and wealth, and access to its Longevity product and service marketplace.

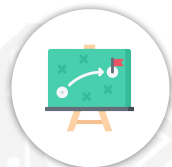


Deep Knowledge Group is **investing in Longevity and Biomarkers companies** to facilitate accelerated Longevity Industry growth and stabilization, and the shift to a more relevant, dependable human-centered focus.



Deep Knowledge Group is **supporting the activities of more than 10 analytical agencies** aim to provide the deep analytics needed to optimize DeepTech sector strategic decision making.

2021



DKG is creating a **Charity Dashboard, dedicated to Africa**, which will identify African countries' problems and facilitate the support of charity organizations as a response to critical issues.

Deep Knowledge Group is open to **helping national governments create robust National Longevity Industry Strategies** to grow their Longevity Industries, economies, and transform the problem of aging population into the socioeconomic opportunity of Longevity.

2022



Deep Knowledge Group will **help governments of developing countries to establish telemedicine projects**. This initiative will improve health conditions in these countries and determine epidemics at an early stage.

**Cross-sector engagement with government, industry, academic, private-sector and public-sector stakeholders** to maximize the reach and inclusivity of the Swiss Foundation's projects and activities.

2023



Deep Knowledge Group will create **Academic Sponsorships Dashboard** for people to find and make relevant sponsorship of university-associated student societies.

To maximize the value of each donation by ensuring that it is used transparently and for its intended purpose, **Deep Knowledge Group will create a donations tracking platform based on blockchain technology.**

# Case 1: Longevity Policy-Making in Emerging Markets/Countries

**Longevity will soon become a major component of most developed nations political agendas by the year 2030**, as increasing numbers of governments are already beginning to formulate and execute national industrial strategies to facilitate the synergetic development of four main sectors and driving forces of Longevity Industrialization (Advanced Biomedicine, AgeTech, Artificial Intelligence (AI), and the Longevity Financial Industry). Governments need to begin formulating Longevity National Longevity Development Plans already now in order to capitalize on their limited windows of opportunity. As an organization, we can help governments create relevant, realistic and data-driven National Longevity Development Plans and Industrial Strategies to minimize the economic burden of aging population and maximize the growth and stability of their national Longevity economies and the health and wealth of their citizens. In addition, we can help to:



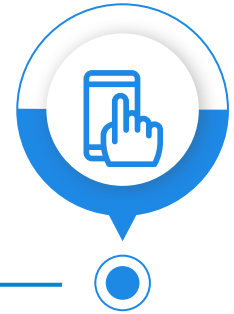
## Determine Business Objectives

We can **help in determining which business objectives and international partnerships** are best at this stage of development to allow the country to maximize its Longevity prospects.



## Implement R&D Facilities

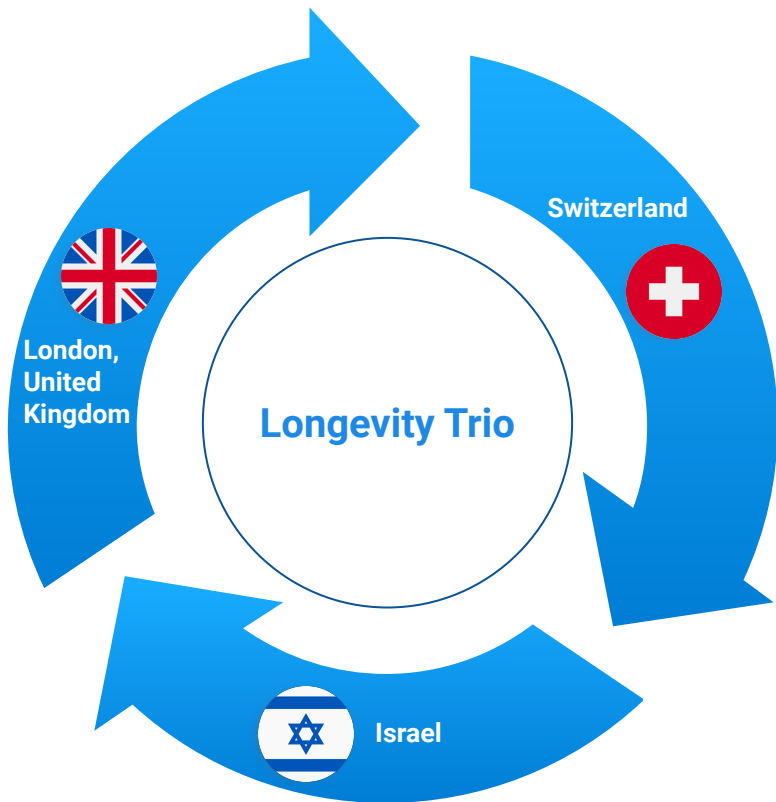
Our experts in various DeepTech industries can assist governments with the implementation of robust, capable and competitive R&D and innovation ecosystems.



## Digitize Developments

We can help with the **digitisation of these developments in a central location** so that interested stakeholders can easily find all the necessary information and news.

# Case 2: Swiss Longevity Valley as the Centre of the Longevity Development



In the future, the nations developing advanced technologies rapidly and those that need to implement Longevity Policy and Governance initiatives could become part of the **Swiss Longevity Valley**.

**Switzerland** has many strong prospects to become the world's first Longevity Valley. It is ideally suited to synergize advanced technologies and sophisticated financial bases, markets, entities and instruments.

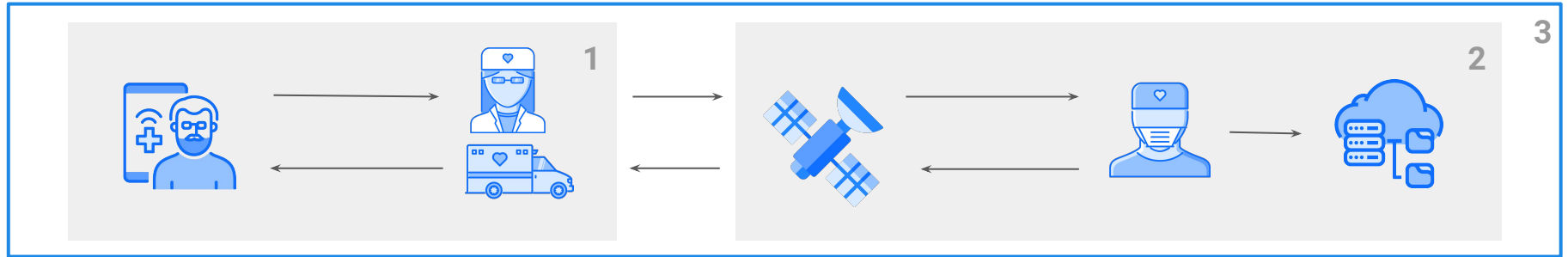
**London** also has significant potentials and a vast financial base for accelerated Longevity Industry development. Meanwhile, **Israel** has a proficient technological base and strong geroscience and tech sectors.

## Scope of Activities

Engagement with Swiss Longevity companies and financial corporations interested in the emerging markets of Longevity Medicine, AgeTech and Longevity WealthTech.

Engagements with broader international organizations such as World Economic Forum, the World Health Organization, United Nations-related organizations, etc to optimize Longevity Policy.

# Case 3: Telemedicine as a Flagship Project for Emerging Markets



**Step 1.** Patient comes to mobile health vehicle for health check and diagnosis. Paramedics take basic tests and examine patients condition, then they input patient's condition and test results in database.

**Step 2.** Doctors in medical centers immediately receive data and patient's results from database in the real-time via online infrastructure. They analyse symptoms and test results and form diagnosis and recommendations with a treatment plan.

**Step 3.** Doctors' recommendations come back to paramedics via online infrastructure that indicate the necessary treatment for the patient. Moreover, a special infrastructure for secure storage and transmission of data will be developed for patients' medical history.

**The telemedicine project is focused primarily on developing countries** as many citizens of such countries usually do not have access to medical services either because of the distant location of hospitals or because of a high percentage of economically underdeveloped populations. The ideal solution may be **to create mobile health vehicles that will provide a wide range of services to ensure the proper diagnosis and adequate follow-up of patients with specific medical needs**, referral of critical cases to advanced care, and detection of possible outbreaks of diseases. With the help of computers, data science and IT-Technologies, all patients' tests results will be transferred to medical centers where specialized doctors will decide on the further treatment of the patient and provide the necessary recommendations.

# Case 4: Donations Tracking Blockchain Based IT-Platform

Deep Knowledge Group's goal is to maximize the value of each donation by ensuring that it is being used transparently and for its intended purpose. To achieve the highest level of transparency, we will create a donations tracking platform based on blockchain technology. It will give charities not only transparency of expenditure but it will help to track all processes in the chain of donations - people and causes in need.

Thanks to our tracking technology, the risk of loss (such as high administrative expenses or theft of money or products) will be reduced and security will be enhanced. Additionally, delays and other bottlenecks will be identified to ensure that any issues are resolved and every dollar arrives to its end destination as soon as possible.



# Swiss Longevity Valley



# Swiss Longevity Valley - Introduction

I.

## Swiss Government Engagement on National Longevity Development Plans and Initiatives

Proactive engagement with Swiss government agencies and members of the Swiss Parliament to establish a framework for a National Swiss Longevity Development Plan and Industrial Strategy to grow Switzerland's Longevity ecosystem to scale and enable extension of the national Health-Adjusted Life Expectancy.

III.

## Coordinated Development of AI Centres for Longevity to Enable the Shift from Treatment to Prevention

Though the intensive application of AI to advanced biomedicine, Switzerland can lead the world in Precision Health, utilizing the latest innovations in AI, Longevity, Biomarkers of Ageing and Advanced Biomedicine to become nation leading the world in preventive, personalized and precision health care for its citizens.

II.

## II. Cross-Sector Dialogue with All Major Longevity Industry Players

A focus on cross-sector dialogue, projects and initiatives spanning government, industry, academia and other relevant spheres of activity, Swiss Longevity Association aims to achieve a maximum level of synergy and convergence, growing every aspect of Switzerland's Longevity ecosystem to scale.

IV.

## Support of Progressive Longevity Financial Reform to Neutralize Economic Burden of Ageing Population

Swiss Longevity Association will work alongside large Swiss financial institutions including pension funds, insurance companies, private wealth banks and other relevant entities to roadmap initiatives and policy proposals to turn the problem of ageing population into the economic opportunity of Healthy Longevity.



## Swiss Longevity Valley

# Longevity Activities of DKG in Switzerland, UK and Israel



London,  
United Kingdom



All Party Parliamentary Group for Longevity

Aging Analytics Agency



AgeTech UK  
IT-Platform



Longevity Industry in  
United Kingdom



Practical Applications of  
Mitochondria Research  
for Human Longevity and  
Space Medicine



King's College  
Longevity  
Summits: AI,  
Policy, Finance



Switzerland



Basel Area Life Sciences  
Ecosystem



All Industry in Switzerland  
Landscape Overview



Longevity in  
Switzerland



Precision Medicine  
Clinics in Switzerland



Longevity Industry in  
Switzerland 2019



Longevity InsurTech in  
Switzerland



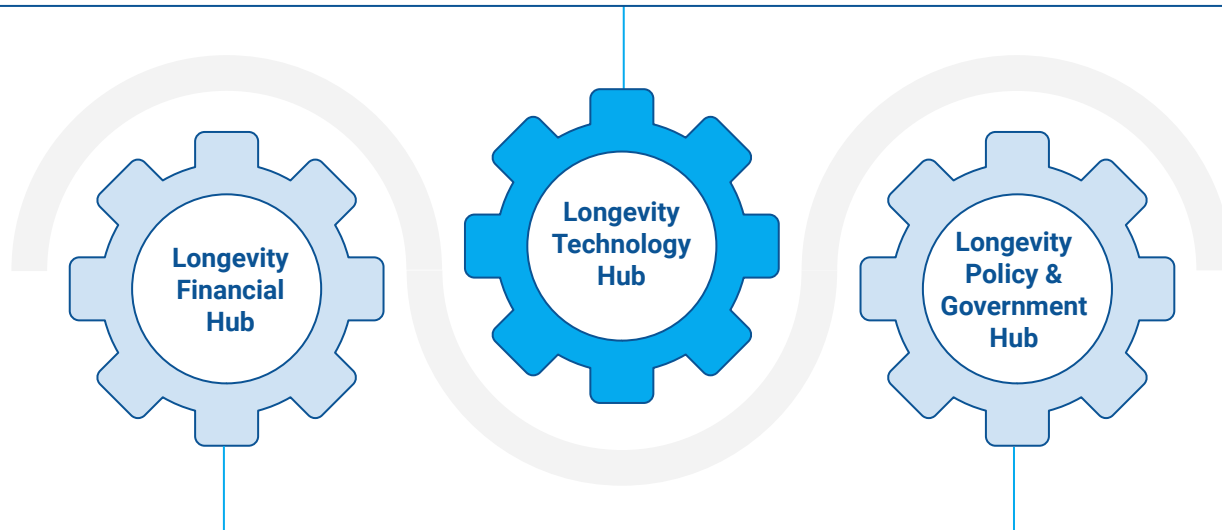
Israel



Longevity Industry in Israel 2019

# Deep Knowledge Generation and Implementation

Every industry needs an innovative out-of-border approach that can be accelerated by the intense research & development sector. Close collaboration between academic and industrial representatives of the BioTech community may create an auspicious ecosystem. In such an environment, high-tech startups rise, attracting new investments and talents, daring to find solutions to the most difficult aging-related issues of modernity.



The main objective of Longevity Financial Hub is to develop strong global connections and focus on the needs of the economy and serve as an international financial platform for particular regions and the global economy in general. Progressive asset management firms, investment banks, pension funds, and insurance companies based in Longevity Financial Hubs will develop new business models using AI to improve analytics quality.

Additional efforts are needed to further maintain and develop the industry's existing strengths, including government support for research and development, as well as other stakeholders in the Longevity Industry. Aging proliferation as a growing problem is turning into an opportunity for governments to develop progressive policies for the pension system, an ecosystem of insurance companies, and a national strategy for intensive healthcare system development.

# Development of AI Centres for Financial Wellness



I.

## **Coordinated Development of AI Centres for Financial Wellness to Enable Financial Stability over Extended Periods of Healthy Longevity for Swiss Citizens, Applying Advances in WealthTech and AgeTech**

Given both its status as an international BioTech epicenter, combined with its reputation for being one of the most progressive countries in terms of its financial industry and FinTech sector, the prospects for Switzerland to lead the world in the development of its Longevity Financial Industry are solid. As a core component of its mission to develop Switzerland into a leading international Longevity Financial Industry hub, the Swiss Longevity Association also plans on road mapping the development of complimentary AI Centres for Financial Wellness.



II.

## **Synergetic Development Alongside AI Centers for Longevity to Cover Full Scope of Healthy Longevity**

Whereas the proposed AI Centers for Longevity would focus on optimizing health into old age, this center would focus on the application of AI to the creation of methods and technologies to promote wellness in the elderly in all aspects of life besides health, such as financial wellness, continuing education, happiness, psychological well being, neuroplasticity, and active social involvement.



III.

## **Artificial Intelligence and Big Data Analysis to Maximize the Economic Opportunities of Extended Health-Adjusted Life Expectancy and to Neutralize the Economic Burdens of Aging Population**

Considering the vast amount of data and information about citizens being collected by financial institutions, telecom companies, etc., there are a large number of options and avenues for how AI, machine learning, big data analysis, and other predictive analytical systems could utilize that data to create personalized recommendations for how citizens 60 years and older can optimize their lifestyles and behaviors to achieve a high degree of wellness, stability, and social involvement and activity. The establishment of dedicated centers focusing on providing companies active in this space with advanced AI-driven support and solutions will help optimize products and services to improve the overall lifetime wellness of elderly individuals in all aspects of life besides health.

# Swiss Longevity Association - Scope of Activities & Agenda for 2019-2022

## Stage I. March 2019

**Seasoned and Experienced Founding Partners with Years of Experience in Supporting the Development of Government-led Longevity Development Plans and Sophisticated Longevity Industry Analytics**

Aging Analytics Agency and the Biogerontology Research Foundation were instrumental in the initial groundwork and establishment of the UK APPG for Longevity, whereas Aging Analytics Agency provided key data, analytics and informational inputs for the APPG for Longevity, and whereas the Biogerontology Research Foundation provided the initial financing that enabled implementation of its first scope of activities.

## Stage II. September 2019

**The Launch of Swiss Longevity Association to Support the Development of Switzerland into a World-Leading Longevity Biomedicine, Policy, Politics, Governance and Progressive Financial Industry Hub**

The founders and executives of these two entities have plans to establish a similarly-purposed entity in Switzerland, given that the country's policy-related ecosystem and its scientific and financial industry-related environment are quite matured, to a similar level as in the UK, which provides excellent grounds for launching a non-profit Swiss Longevity Association to structure the initial scope of activities and accumulate the initial budget to establish a Longevity Committee within the Swiss Parliament.

## Stage III. September 2022

**Cross-Sector Engagement with Government, Industry, Academic, Private-Sector and Public-Sector Stakeholders to Maximize the Reach and Inclusivity of the Swiss Foundation's Projects and Activities**

- Engagement with Swiss Longevity companies and financial corporations interested in the emerging markets of Longevity Medicine, AgeTech and Longevity WealthTech including private wealth banks, insurance companies, pension funds, family offices, etc
- Engagements with broader international organizations like the World Economic Forum, the World Health Organization, United Nations-related organizations, etc.
- Aggregation of around 200.000 CHF from approximately 10 sponsors, who will also provide active support in the form of strategic development, establishment of good relations with relevant Swiss counter-parties.

# Swiss Research Project AGE - NT 2021-2024

AGE-NT is the largest national research project dealing with the challenges and opportunities of demographic change. The aim of the project is to identify knowledge and best practice examples in selected priority areas, both nationally and internationally, and to make them visible and accessible to a broad public and decision-makers.

## Fields of activities



**Technologies for Older Adults**



**Dementia: Prevention and Care**



**Employment in Retirement**



**Longevity**



**Social Inclusion**

## Ongoing projects



### **Technology and Active & Assisted Living**

Long-term tests of a chest strap with innovative humidification elements to measure heart rate variability



### **Easierphone**

Development of an Age-Appropriate Smartphone App



### **HEROES**

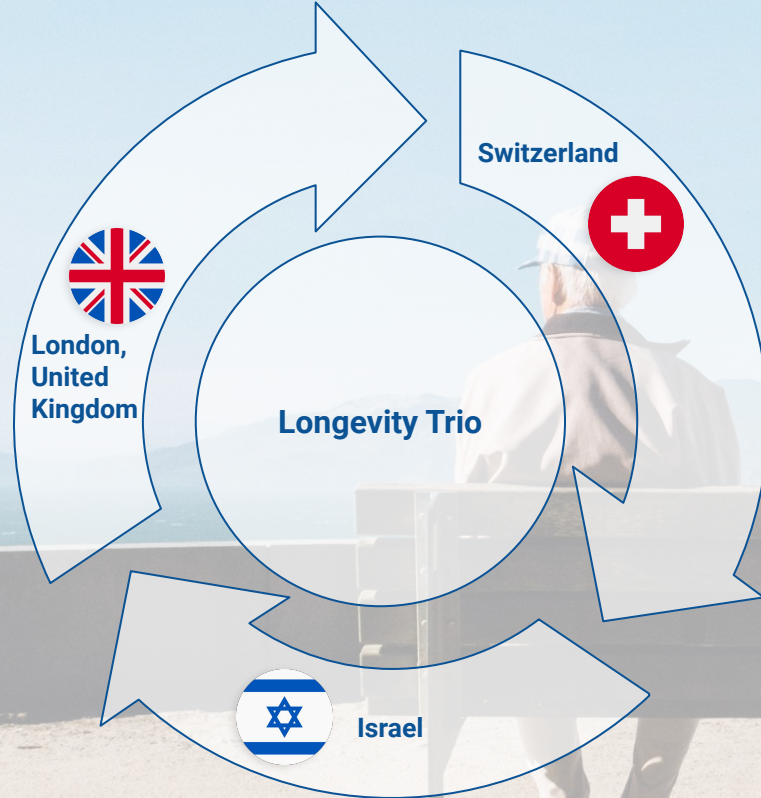
Improvement of speed and cost-efficiency of nursing recruitment through an online platform



### **Robotics**

Successful use of service robotics in the care and nursing of older adults through Human Centered Design

# Longevity Triangle



**The United Kingdom, Israel, and Switzerland** have the most developed economies and healthcare systems.

**Switzerland** is the initial virtual capital of Longevity Valley. It is the perfect place where advanced technologies and developed financial bases meet.

**London** has great potential and a vast financial base to develop a Longevity Industry. On the other hand, **Israel** has a proficient technological base and many developments in the Longevity field.

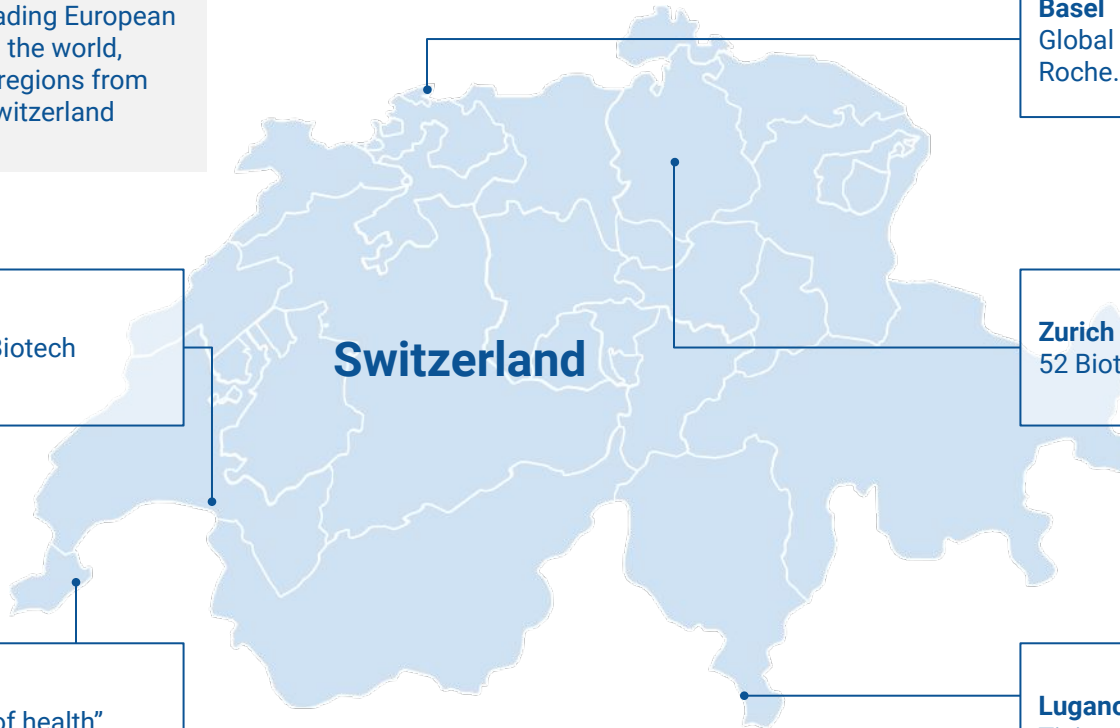
In the future, the nations developing advanced technologies rapidly and need to implement longevity governmental initiatives could become part of the **Swiss Longevity Valley**.

# Swiss BioTech Clusters and Hubs

**BioValley**, one of the leading European Life Sciences regions in the world, bringing together three regions from France, Germany and Switzerland

**Lausanne**  
Lake Geneva region: 48 Biotech companies

**Geneva**  
Unofficial “world capital of health”  
Home to UN, WHO and Red cross



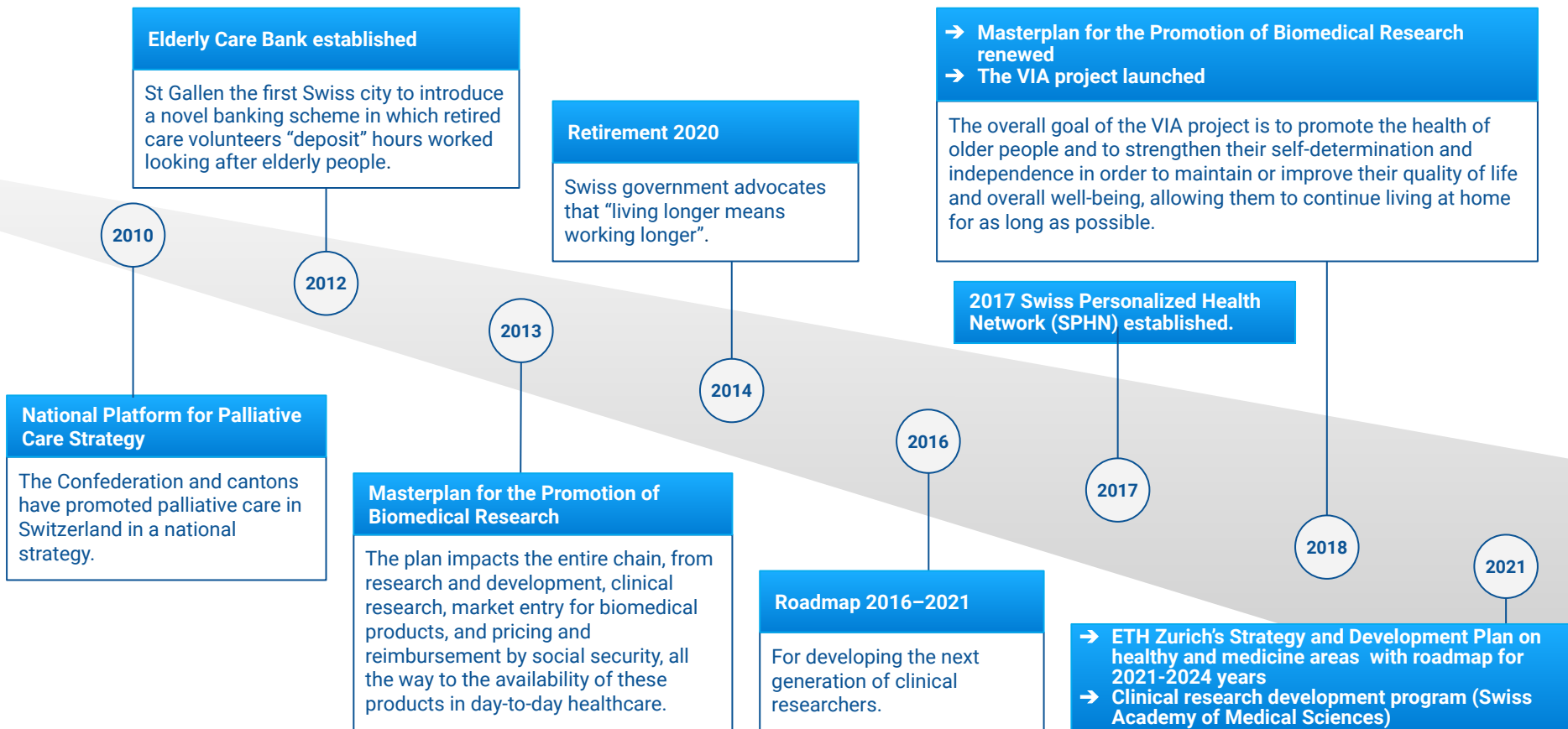
**Basel**  
Global headquarters of Novartis and Roche. 69 Biotech companies

**Zurich**  
52 Biotech companies

**Lugano**  
Ticino region: 26 Biotech companies



# Timeline of Swiss Government Involvement in Longevity



# Swiss Longevity Association - Summary

I.

## **Developing Switzerland into a Coordinated Longevity AI and Data, Finance, and International Policy and Governance Hub**

Leading Geneva-based Longevity Policy Non-profits and Think Tanks can take advantage of Switzerland's national strengths and potential to turn the nation into a world-leading Longevity Hub through the coordinated development of Public Policy and Governance, the Longevity BioTech Industry, Preventive Medicine, Precision Health and the emerging Longevity Financial Industry. Furthermore, leveraging Switzerland's existing reputation as a hub for independent international policy organizations like the World Economic Forum, the United Nations, UNESCO, the World Health Organization, and Others, the Swiss Longevity Association aims to turn Switzerland into the leading international hub for cross-sector and cross-nation Longevity Development projects and initiatives.

II.

## **Active Involvement with Swiss Governmental Departments and Proactive Dialogue with Industry Stakeholders**

Swiss Longevity Association will work with the help of proactive corporate and institutional partners to interface with the relevant Swiss ministries, governmental organizations, and members of Swiss Parliament to establish a National Swiss Longevity Development Framework, as well as the establishment of a parliamentary body equivalent to the United Kingdom's All-Party Parliamentary Group on Longevity.

III.

## **Founding Members of Swiss Longevity Association Bring Years of Relevant Experience and Expertise**

The Founding members and partners of the Swiss Longevity Association bring years of relevant experience and activity to the task of coordinating these national and international Longevity Development Efforts, including Dmitry Kaminskiy, founder of Deep Knowledge Ventures (a VC firm that made its first investments into the Longevity industry in 2014, at a time when most investors did not consider it a serious prospect), Head of International Cooperation for the UK All-Party Parliamentary Group for Longevity Secretariat, Founder of Aging Analytics Agency (the primary source of data and analytics for the UK APPG for Longevity) and the Biogerontology Research Foundation (leading Longevity-focused non-profit), and Stefan Hascoet, a Geneva-based financial industry professional with years of experience working for Swiss investment banks and other financial corporations and institutions).

# Steps for Cooperation and Collaboration

Swiss Longevity Association is interested in strategic partnerships and collaborations with several relevant counterparties to succeed in its mission to make Switzerland a renowned International Longevity Hub.

I.

## Cooperation with Governmental, International and Non-Governmental Organizations

Swiss Longevity Association is interested in cooperation, collaboration, and initiating dialogue with the relevant organizations actively involved in Swiss governance, ranging from government ministries, agencies, and departments, to relevant policy-focused NGOs and think-tanks, to members of Swiss Parliament to establish a framework for the coordinated development of the nation's Longevity politics and governance sphere.

II.

## Cooperation and Sponsorship with Biomedical and Financial Institutions

Swiss Longevity Association plans to work with several key Swiss Longevity Industry participants and stakeholders to develop a framework and blueprint for a Government-led National Longevity Development Plan to increase the national HALE of all Swiss citizens. The scope of this plan also includes financial reform to boost the Swiss GDP and reduce the economic burden of an aging population. To support this sphere of activity, the Swiss Longevity Association is keen to work alongside large Swiss financial institutions to roadmap initiatives and policy proposals capable of turning the problem of the aging population into the economic opportunity of Healthy Longevity.

III.

## Donations from Individual and Institutional Sponsors

To bootstrap its activities in the realms of Longevity policy, politics, governance, and synergetic industry development, the Swiss Longevity Association is seeking donations from key institutional and individual sponsors that are keen to see the nation manifest its latent strengths and prospects and become the leading Longevity nation that it has the potential to be.

# Charities in Africa Dashboard

# Introduction

Charities in Africa Dashboard highlights the state of charitable sphere in Africa. The dashboard includes the map divided into the districts and indicates such key data as:



Deep Knowledge Analytics is building a sophisticated cloud engine for advanced analytics in healthcare and philanthropy in Africa.

## Main Features of the Platform:

- General state of the country / districts analysis
- Identification of critical challenges
- List of charities operating in the country
- Key financial indicators of charities
- List of African charitable programs

## Value Proposition:

- Platform shows the full landscape of philanthropic industry in Africa
- Up-to-date information regarding the country could be provided to interested parties
- Platform could be shaped to meet specific needs

The range of parameters depends on the objective and can vary regarding the final goal.  
To learn more: <https://platform.dkv.global/dashboards/africa-charities-dashboard-operation>

# Charities in Africa Dashboard's Statistics

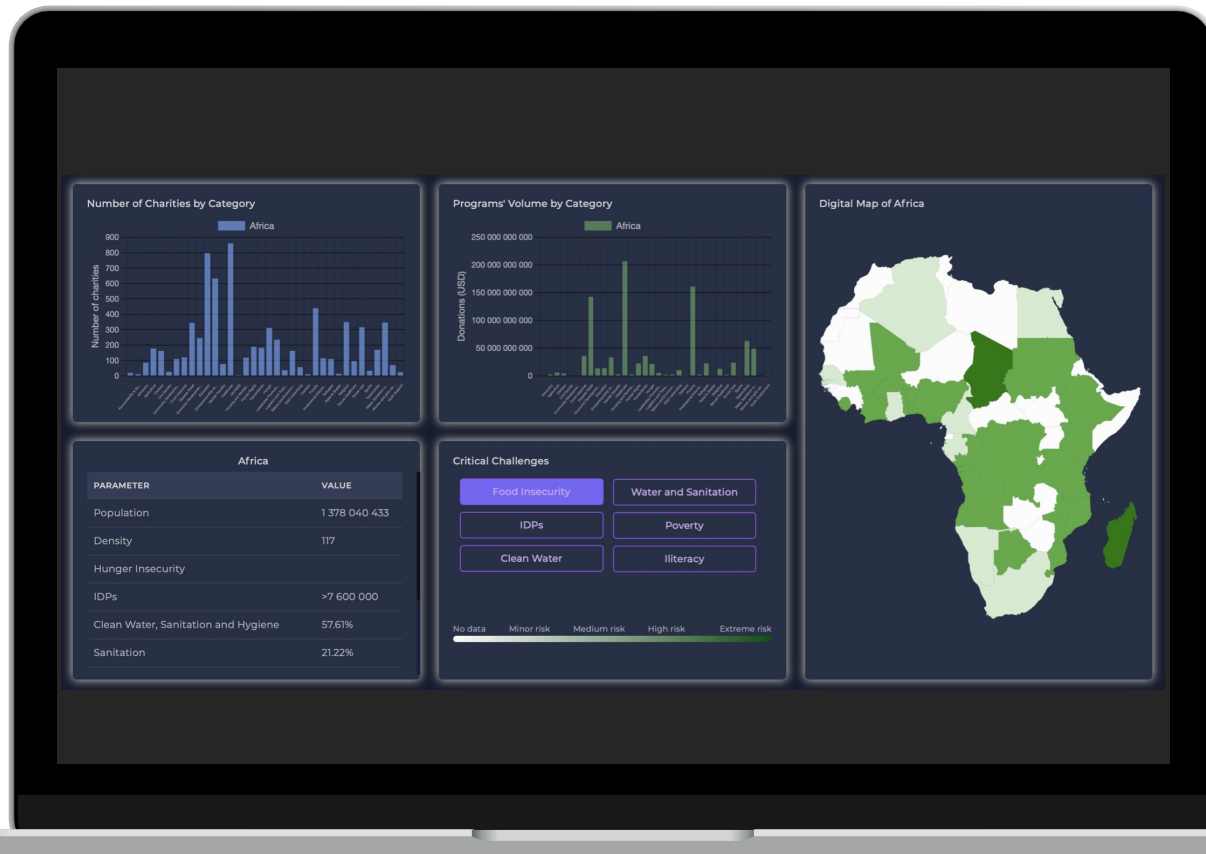
**217**  
Charities

**1,300+**  
Programmes

**65,000+**  
Parameters









**35**  
Categories

**~\$900B+**  
Value of Support



# Charities Operated in Africa

## Parameters

 <b>Charity</b>	 <b>Board Leadership</b>
 <b>Mission</b>	 <b>Revenue</b>
 <b>Expenditure</b>	 <b>Net Assets</b>
 <b>Grants</b>	 <b>Administrative Expenses</b>

Charities in Africa Dashboard includes a comprehensive overview of more than 200 charities in the country. The overview combines both qualitative and quantitative indicators to provide the customer with the up-to-date information regarding the most demanded charities in Africa.

Africa
Clear all
Select country
Select category
All people ▼

NAME	BOARD LEADERSHIP	MISSION	REVENUE	EXPENDITURE	NET ASSETS	GRANTS	ADMIN EXPENSES
Esperan'a	Martin Johnson Board Chair, Royce	Since 1970, Esperan'a has been providing Healthcare and hope for the w ...	\$3,599,363	\$3,332,408	\$3,617,437		
Ashoka	Bill Drayton	Founded in 1980, Ashoka strives to shape a global, entrepreneurial, co ...	\$40,990,598	\$36,954,523	\$50,249,352	\$38,295,290	\$4,345,971
Rise Against Hunger	Brian Nell Martin	Rise Against Hunger is growing a global movement to end hunger by empo ...	\$59,299,161	\$60,818,336	\$3,710,824	\$59,243,503	\$5,279,267
All God's Children International	Brittany Norman	All God's Children International (AGCI) is an orphan care ministry ans ...	\$5,899,335	\$5,010,510	\$1,500,601	\$2,739,088	\$186,143
Hope for Africa International	Charles Mwape	HOFAI is using HIV awareness as the main strategy in combating HIV/ AI ...					
The Fund for Global Human Rights	Chris Canavan	The Fund for Global Human Rights equips grassroots activists across th ...	\$21,961,665	\$13,874,597	\$17,032,540	\$21,905,689	\$1,033,882
Jewish World Watch	Diana Buckhantz	Jewish World Watch is an expression of Judaism in action, bringing hel ...	\$1,441,202	\$1,546,854	\$985,372	\$1,044,396	\$199,716

# Charitable Programs in Africa

## Parameters



Charity



Board Leadership



Mission



Revenue



Expenditure



Net Assets



Grants



Administrative Expenses

The total amount of charitable programs included into Charities in Africa Dashboard amounted to more than 1,300 ones. The customer is able to sort the programmes by countries and the target audience to highlight the most suitable programs. Moreover, all the programs are divided into categories.

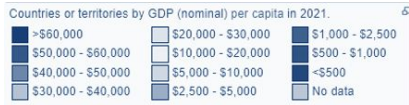
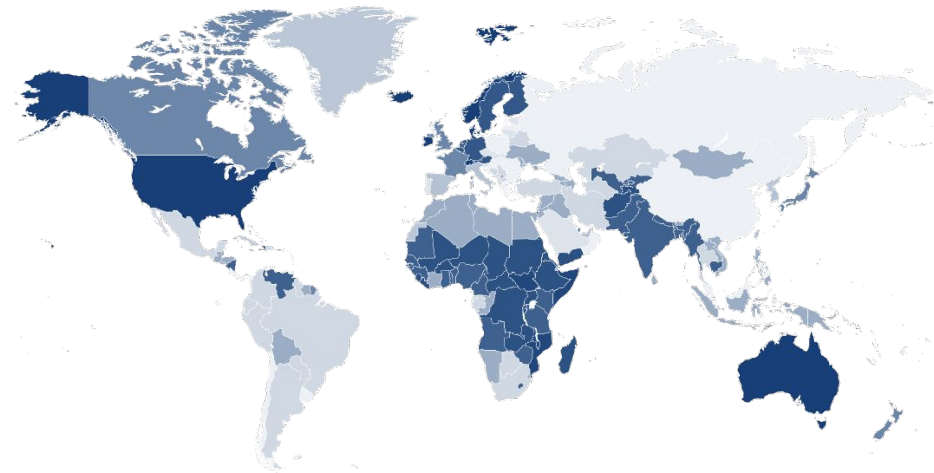
Africa							
	<input type="button" value="Clear all"/>	<input type="text" value="Select country"/>	<input type="text" value="Select category"/>	<input type="text" value="All people"/>			
NAME	BOARD LEADERSHIP	MISSION	REVENUE	EXPENDITURE	NET ASSETS	GRANTS	ADMIN EXPENSES
A Chance In Life	Mauro C. Romita	- A Chance In Life has changed the lives of over 35,000 at-risk youth th ...	\$2,217,374	\$1,903,585	\$3,236,950	\$2,341,691	\$457,013
Action Against Hunger USA	Raymond Debbane	Action Against Hunger is the world's hunger specialist whose primary g ...	\$146,004,059	\$127,324,395	\$95,091,214	\$146,097,369	\$11,723,989
Acton Institute for the Study of Religion and Liberty	David Humphreys	- Founded in April, 1990, the Acton Institute for the Study of Religion ...	\$10,475,844	\$10,620,474	\$16,080,454	\$9,373,678	\$695,875
Acumen	David Humphreys	- Founded in 2001, Acumen Fund is a global venture fund that uses entrep ...	\$34,621,633	\$22,674,343	\$131,681,787	\$35,291,088	\$1,372,090
ADRA International Board	Geoffrey Mbwana	- ADRA (Adventist Development and Relief Agency) was initiated by the Se ...	\$86,510,622	\$83,872,401	\$55,136,590	\$24,936,596	\$4,071,701
Advocates International	Jeffrey A. Brauch	- Advocates International (AI) is guided in its mission and methods by C ...	\$390,111	\$399,407	\$346,693	\$384,788	\$2,637
African Leadership Foundation	Elizabeth Berry	The African Leadership Foundation is a non profit organization that su ...	\$7,822,500	\$7,072,983	\$4,842,647	\$7,559,440	\$108,339



# Entrepreneurship in Africa

- Entrepreneurship levels in Africa are the highest in the world
- 22% of Africans are starting new businesses
- Loan providers need to increase their lending by at least \$135 billion to meet demand by Africa SMEs

## Countries with Low GDP Have Low Financial Inclusion Ratio



## GDP per Capita 2021

More people start a new business in Africa than in LAC or Asia



## Who are the African entrepreneurs?



African women are twice as likely to start a business than women elsewhere

## Mostly in services

Top early-stage entrepreneurs



Trade, hotels and restaurants



Agriculture, forestry and fishing



Manufacturing

Innovative



20% of new African entrepreneurs are introducing a new product or service

# Smart Matching Platform for Charitable Purposes in Africa



Smart Matching Platform connects different charities, NGOs and other players of the philanthropic industry with charitable programmes and local funds based on their location, problems, target groups, and type of support. It enables charities to find the best entities for cooperation and to build a mutually beneficial relationship. Thus, it optimizes the supply chain of the support related to problems in Africa.

# COVID-19 and GovTech Analytical Dashboards

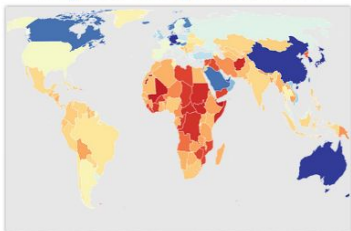
# Covid-19 Big Data Analytics: IT Platform

GeoEconomic Dashboard

## COVID-19 Global Analytics Dashboard

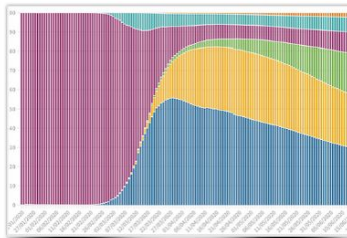
-  Quarantine Efficiency
-  Government Efficiency
-  Monitoring & Detection
-  Healthcare Readiness
-  Country Vulnerability
-  Emergency Preparedness

### COVID-19 Regional Safety Assessment



View More

### COVID-19 Dynamics



View More

### List of Regions

#### Full List of 250 Regions, Countries and Territories

COVID-19 Regional Safety Assessment  
List of 250 Countries, Regions & Territories

Region	Area	Population	Urban	Rural	Coastal	Mountain	Island	Total
Africa	30,291,000	1,200,000,000	1,000,000,000	200,000,000	100,000,000	100,000,000	1,000,000,000	
Asia	44,579,000	4,500,000,000	4,000,000,000	500,000,000	100,000,000	100,000,000	4,500,000,000	
Europe	10,180,000	750,000,000	700,000,000	50,000,000	100,000,000	100,000,000	750,000,000	
Latin America	10,592,000	650,000,000	600,000,000	50,000,000	100,000,000	100,000,000	650,000,000	
Middle East	3,629,000	450,000,000	400,000,000	50,000,000	100,000,000	100,000,000	450,000,000	
Oceania	3,692,000	45,000,000	40,000,000	5,000,000	100,000,000	100,000,000	45,000,000	

View More

MedTech IT-Platform

Safety Score of 30 Regions

COVID-19 Interactive Mindmaps

35,000+

Data Points

Were used in this special analytical case study

### Regional Distribution

Africa

Asia & Oceania

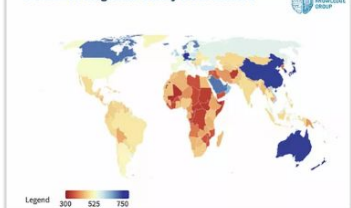
Americas

Europe

Middle East

### COVID-19 Regional Safety Assessment Regional Distribution

#### COVID-19 Regional Safety Assessment



View More

### Methodology

#### Analytical Framework and Methodology



View More

### Correlation Between Indicators

#### Correlation between ratio of fatal cases and other indicators



View More

### Correlation between ratio of fatal cases and other indicators

Obesity

Population Density

Diabetes prevalence

Incidence of tuberculosis

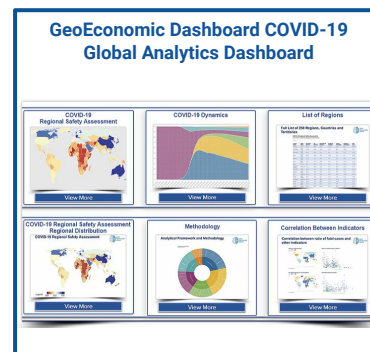
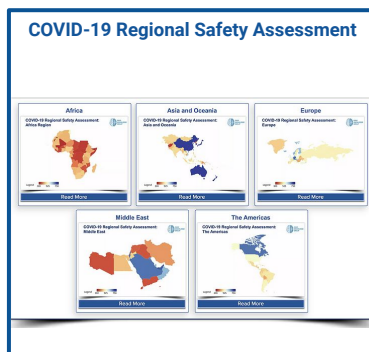
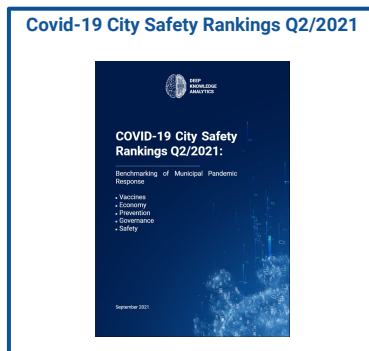
Current health

Number of Doctors

You Are Welcome!

# Introduction of COVID-19 Analytics Division

Deep Knowledge Group's COVID-19 analytics is designed to classify, analyze and rank the economic, social and health stability achieved by countries and regions, as well as the strengths, weaknesses, opportunities, and threats or risks that they present in the battle against the global health and economic crisis triggered by COVID-19.



# DKG's COVID-19 Analytics Governmental Acknowledgements



**Benjamin Netanyahu**  
Prime Minister of Israel

Israel has been ranked first in the Covid-19 Health Safety Countries Ranking on the Deep Knowledge Group website.



**Hong Nam-ki**  
Deputy Prime Minister of South Korea

Finance Minister Hong Nam-ki posted a Forbes article that ranked South Korea as the third safest out of 100 countries around the world during the COVID-19 pandemic.



**Karin Prien**  
German Minister for Education, Science and Culture

Germany is very far ahead in the country comparison: "Compared to the other countries, Germany currently has the best security and stability ranking in Europe and is also one of the leading nations worldwide in terms of crisis management."



**Judith Varga**  
Hungarian Minister of Justice

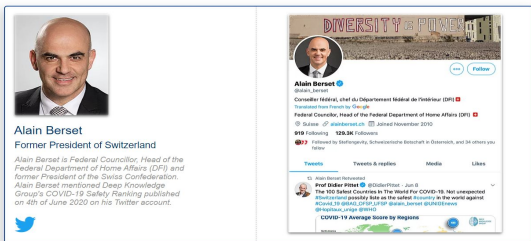
We are grateful for all healthcare workers and first responders battling the coronavirus. Hungary will continue to focus all its efforts on protecting the lives of its citizens and mitigating the adverse health and economic impacts of the pandemic.



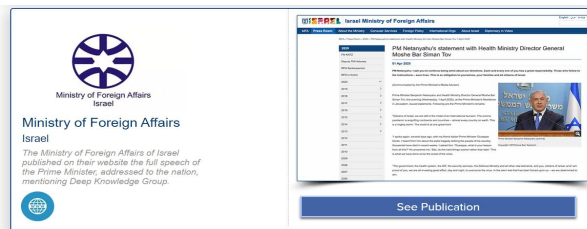
**Fabrice Filliez**  
Ambassador of Switzerland to Singapore

Deep Knowledge Group's report, based on 130 parameters, ranks Switzerland #1 due to its economy's resilience & careful ways to relax lockdown without sacrificing public health and safety.

## FORMER PRESIDENT



**Alain Berset**  
Former President of Switzerland  
Alain Berset is Federal Councillor, Head of the Federal Department of Home Affairs (DH) and former President of the Swiss Confederation. Alain Berset mentioned Deep Knowledge Group's COVID-19 Safety Ranking published on 4th of June 2020 on his Twitter account.



**Ministry of Foreign Affairs Israel**  
The Ministry of Foreign Affairs of Israel published on their website the full speech of the Prime Minister, addressed to the nation, mentioning Deep Knowledge Group.

[See Publication](#)



**The Saudi Government Communication Center**  
Ministry of Media  
The Government Communication Center is one of the vital arms of the Ministry of Information, whose main task is to strengthen and integrate the tools of government communication. The Center tweeted about Deep Knowledge Group's COVID-19 Safety Ranking published on 4th of June 2020.

تقرير دولي، المملكة في المركز الـ 17 عالمياً في مواجهة جائحة كورونا، على صعيد الأمان الصحي وفعالية الوثاقية والرعاية. #الوسائل\_المكشوبية @DCKGSaudi

في المواجهة للجائحة كورونا المملكة في المركز 17 بين 200 دولة حول العالم

# COVID-19 Analytics in Media

DER SPIEGEL



"According to a ranking, the Federal Republic is currently the safest and most stable country in Europe and even the second safest in the world. Only Israel manages the crisis better, according to the country comparison of the London Deep Knowledge Group (DKG), which is exclusively available to SPIEGEL."

[Read Article](#)

NIKKEI ASIAN REVIEW



"The countries that will be able to provide long-lasting protection for their citizens, and stay stable, will to some extent automatically attract financial activity." Dmitry Kaminsky, DKV's founder and managing partner, told the Nikkei Asian Review."

[Read Article](#)



"The Palestinians benefit from the Israeli assistance, since Israel was just ranked the safest country in the world during the pandemic by the Deep Knowledge Group." - Fox News says."

[Read Article](#)

DW Deutsche Welle



"Germany is the safest country in Europe, with Greece in 30th place and Cyprus in 29th. In their research, DKG analysts took into account many different criteria, such as the validity of restrictive measures, the number of quarantine violations, the range of travel bans, the number of diagnostic tests and the availability of hospital beds."

[Read Article](#)

Esquire



"Deep Knowledge Ventures, which is focused on health care and longevity technology, ranked 20 countries in Asia Pacific on these parameters: lowest likelihood of infection, lowest chance of mortality, and highest likelihood of recovery based on efficiency of quarantine and government management, monitoring and detection, and emergency treatment readiness."

[Read Article](#)

Forbes



"The Deep Knowledge Group, a respected consortium of commercial and non-profit organizations, has just published an interim review of measures to combat the COVID-19 pandemic, including a "Safety Countries Ranking" of the 40 countries that are doing the best job of protecting their citizens against coronavirus."

[Read Article](#)

RTL



"In order to assemble the ranking, DKG analysts gathered information on several factors, including the period of lockdown and the number of confinement infractions per country. Other indicators are travel bans, coronavirus testing and how well hospitals are equipped in each country."

[Read Article](#)

WELT



"According to Deep Knowledge Group Germany manages extremely well to protect its population against the dangers of coronavirus. In an analysis by the Hong Kong and London-based company, Germany ranks the second worldwide when it comes to providing security and dealing with the crisis."

[Read Article](#)

The Washington Times



"A list of the world's 10 current "safest countries," compiled by the London-based Deep Knowledge Group, includes classic European-style parliamentary democracies (Israel, Australia and New Zealand), densely populated city-states (Singapore and Hong Kong) and totalitarian (China)."

[Read Article](#)

Forbes



"Deep Knowledge Group has developed advanced analytical frameworks to analyze this data. The results are presented in the form of open source country rankings to help people and governments make informed decisions that maximize beneficial outcomes for humanity."

[Read Article](#)

DER SPIEGEL



"Internationally, its crisis management is praised. In the country comparison of the London Deep Knowledge Group on the corona crisis, Germany is currently the safest and most stable country in Europe and the second safest in the world, with Israel as the front runner. Spahn can be celebrated and gives interviews to international broadcasters such as CNN."

[Read Article](#)

euronews.



"According to research by Deep Knowledge Group, the COVID-19 crisis is best managed by Israel on a global scale. Germany is the second and South Korea is the third. Deep Knowledge Group, a London-based artificial intelligence and data analysis company."

[Read Article](#)

## Deep Knowledge Group's COVID-19 Ranking on National TV Channels Globally

RTL



11 | כאן



# Covid-19 Big Data Analytics Timeline: Overview of Activities

### COVID-19 MedTech IT-Platform May 5, 2020

### COVID-19 Regional Safety Assessment (200 Regions) June 4, 2020

**COVID-19 Regional Safety Assessment**

Big Data Analysis of 200 Countries and Regions COVID-19 Safety Ranking and Risk Assessment

### GeoEconomic Dashboard COVID-19 Global Analytics Dashboard August 23, 2020

### Best Residence-by-Investment Cities for Business

### Covid-19 City Safety Rankings Q2/2021

**COVID-19 City Safety Rankings Q2/2021:**

Benchmarking of Municipal Pandemic Response

- Mobility
- Location
- Preparedness
- Governance
- Safety

### COVID-19 Regional Rankings March 26, 2020

### COVID-19 Regional Safety Assessment May, 18 | 2020

**20 Regions COVID-19 Safety Ranking**

1	ISRAEL	781	11	UNITED ARAB EMIRATES	700
2	GERMANY	749	12	CANADA	699
3	SWITZERLAND	742	13	HONG KONG	698
4	SINGAPORE	740	14	NORWAY	685
5	JAPAN	738	15	DEKADEN	671
6	AUSTRIA	728	16	TAIWAN	666
7	CHINA	717	17	SANDI ARABIA	657
8	AUSTRALIA	715	18	HONGKONG	656
9	NEW ZEALAND	715	19	THE NETHERLANDS	651
10	SOUTH KOREA	712	20	VIETNAM	637

### COVID-19 Regional Safety Assessment July, 30 | 2020

**COVID-19 Regional Top-30 Ranking**

1	SWITZERLAND	780	14	NETHERLANDS	697
2	NEW ZEALAND	758	15	LUXEMBOURG	696
3	SOUTH KOREA	758	16	ISLAND	695
4	GERMANY	757	17	MEXICO	691
5	JAPAN	752	18	IRELAND	689
6	CANADA	751	19	FINLAND	688
7	AUSTRALIA	749	20	FINLAND	687
8	AUSTRIA	729	21	ITALY	682
9	FRANCE	728	22	LUXEMBOURG	682
10	UNITED ARAB EMIRATES	725	23	HONGKONG	678
11	ISRAEL	711	24	CORONA	676
12	CANADA	709	25	THE NETHERLANDS	671
13	TAIWAN	688	26	CHINA	669
14	HONG KONG	688	27	JACOBINA	653
15	NORWAY	682	28	COLOM	648

### Investment Migration Programs Health Risk Assessment March 23, 2021

**Investment Migration Programs Health Risk Assessment**

Groundbreaking research reveals unique insights into residence- and citizenship-by-investment programs

### Covid-19 City Safety Ranking Q1/2021: Benchmarking of Municipal Pandemic Response

**25 Cities COVID-19 Ranking**

1	Abu Dhabi	73	11	London	61
2	Seoul	71	12	Los Angeles	61
3	Sydney	70	13	Amsterdam	60
4	Singapore	68	14	Riyadh	58
5	Osaka	68	15	Taipei	58
6	Berlin	66	16	New York	58
7	Taipei	66	17	Moscow	56
8	Tel Aviv	66	18	Park	53
9	Zurich	63	19	Madrid	52
10	Amsterdam	62	20	Berlin	52
11	Oslo	62	21	Sofia	50
12	Hong Kong	62	22	Sofia	50
13	Beijing	62	23	Mumbai	49





# Covid-19 City Safety Rankings Q3/2021



## COVID-19 City Safety Rankings Q2/2021:

Benchmarking of Municipal Pandemic Response

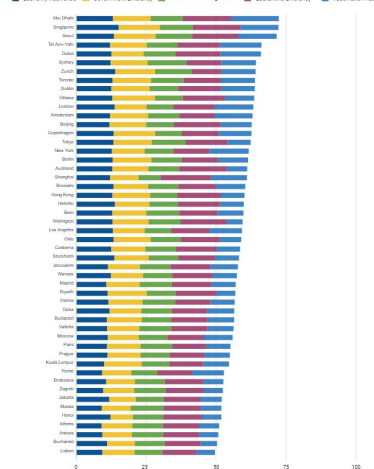
- Vaccines
- Economy
- Prevention
- Governance
- Safety

September 2021

Initially, 25 municipalities from different states and background were selected taking into consideration Covid-19 Regional Safety Assessment and analyzed. Then, the analysis was expanded to 72 municipalities, and the top 50 cities with the highest scores are distinguished and examined for their best practices and the challenges they have had to face. The analysis presented in this iteration of the series uses more than 8,000 data points in total, classified into 5 qualitatively distinct categories - Government Efficiency, Economy Resilience, Healthcare Management, Quarantine Efficiency, Vaccination Rate.

### Comprehensive Ranking

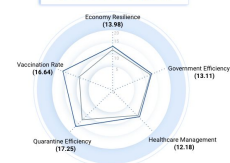
■ Economy Resilience ■ Government Efficiency ■ Healthcare Management ■ Quarantine Efficiency ■ Vaccination Rate



### COVID-19 City Safety Ranking - Abu Dhabi

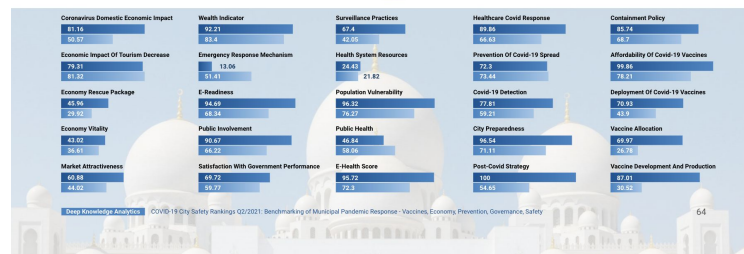


Overall Score - 73.16 /100



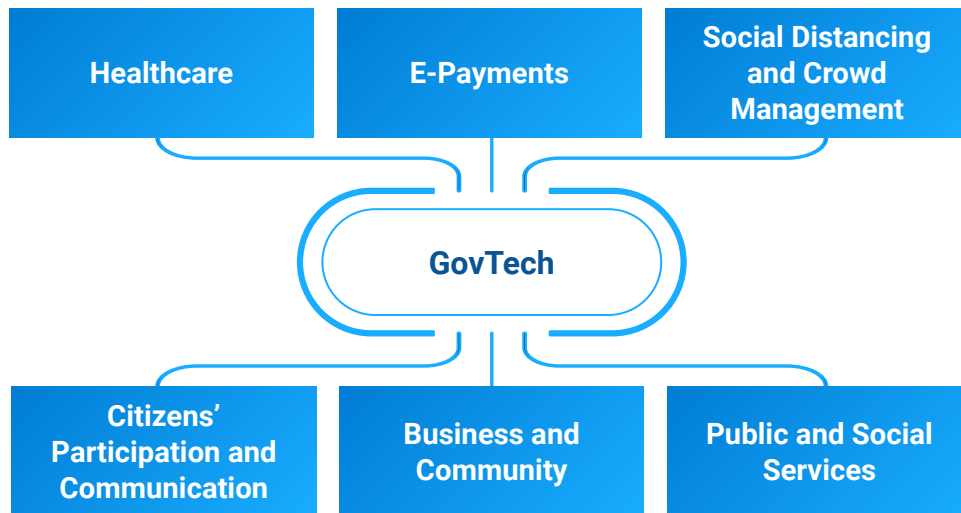
Category	Ranking
Economy Resilience	7
Government Efficiency	20
Healthcare Management	4
Quarantine Efficiency	2
Vaccination Rate	1
<b>Overall Ranking</b>	<b>1</b>

Abu Dhabi takes the lead among the top-50 cities by COVID-19 City Safety Ranking. The city has broken vaccination records by offering a wide range of services and vaccines. In addition, during the coronavirus pandemic, local authorities took a strong response: the healthcare system was prepared by using emergency protocols, smart technology, and aggressive testing was effectively used to combat COVID-19. Also, local authorities actively worked with the community and other stakeholders to provide the missing resources throughout the crisis. To revitalize its economy, Abu Dhabi has developed a business incentive plan and is successfully moving the direction that was defined.



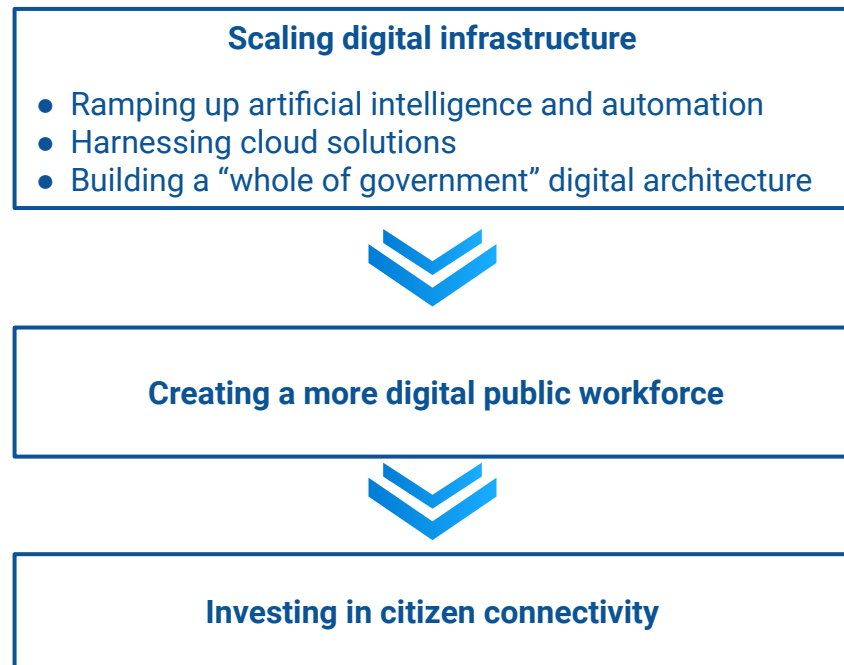
# GovTech and COVID-19 Analytics

## Areas where Government Technologies Were Especially Used During The COVID-19 Pandemic



COVID-19 has been a catalyst for the use of new technologies in the public services response to the pandemic. Although governments are at very different stages in their journey of digital transformation, more and more countries are implementing transformation plans. Some are driven by modernization while others are driven by the need to be innovative.

## To Meet The Needs Of The Pandemic, Governments Accelerated Their Digital Journey Along Three Major Dimensions



### Scaling digital infrastructure

- Ramping up artificial intelligence and automation
- Harnessing cloud solutions
- Building a “whole of government” digital architecture

### Creating a more digital public workforce

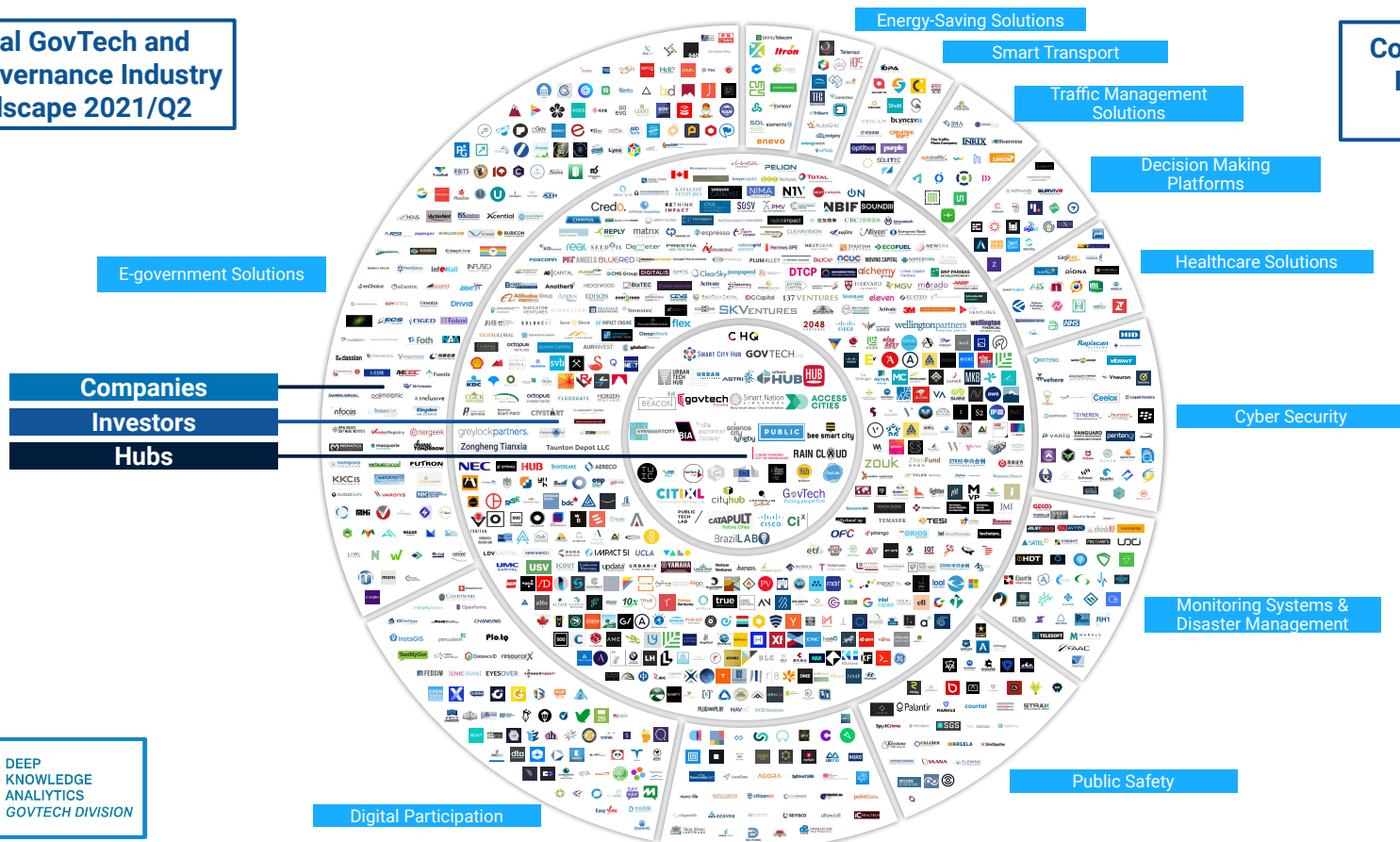
### Investing in citizen connectivity

[www.govtech.global](http://www.govtech.global)

# GovTech Division Timeline

Global GovTech and E-governance Industry Landscape 2021/Q2

Companies - 500  
Investors - 500  
Hubs - 35+



DeepTech  
Dashboards

## GovTech / E-governance Global Industry Landscape in the Post-Pandemic World Dashboard

Landscape Analytics

GovTech Industry  
Landscape

GovTech Companies

GovTech Investors

GovTech Hubs

Gov Tech Industry Landscape



View More

Dashboard Parameters

COMPANIES

500

INVESTORS

500

HUBS

30+

INFLUENCERS

80+

CATEGORIES

12

REGIONS

5

Full Report

GovTech / E-governance Global Industry  
Landscape in the Post-Pandemic World  
Q2 2021

June, 2021

View More

GovTech Industry  
Landscape

Mindmap (Sectors)

Mindmap (Regions)

Mindmap (Static)

Industry Developments

GovTech Industry  
Landscape 2019

Landscape Overview

Interactive MindMap

Teaser

Interactive MindMaps



Matching Tool



Predictions and Conclusions

GovTech Predictions 2022-2024



Downloadable  
Materials

Report

Teaser

One Pager

The GovTech Division of Deep Knowledge Analytics focuses on producing sophisticated open-access and proprietary analytics that reveal major factors driving the ongoing transformation of the global GovTech industry, main sectors to be changed, barriers to this process, and ways to overcome them. The division conducts quantitative analytics and benchmarking on the main types of technologies used by GovTech including blockchain, AI and machine learning, IoT, robotic automation, and geospatial data analysis, with emphasis on the best examples of their implementation.



**GovTech Development During COVID-19:  
How Technologies Have Helped**  
Special Edition  
August 2021

**GovTech Development  
During COVID-19:  
How Technologies Have Helped**

View



**GovTech / E-governance Global Industry  
Landscape in the Post-Pandemic World  
Q2 2021**

June, 2021

**GovTech / E-governance Global  
Industry Landscape in the Post-  
Pandemic World Q2 2021**

View



**Global Longevity  
Governance Landscape**  
50 Countries Big Data  
Comparative Analysis of  
Longevity Progressiveness

**Global Longevity Governance  
Landscape Overview 2019**

View

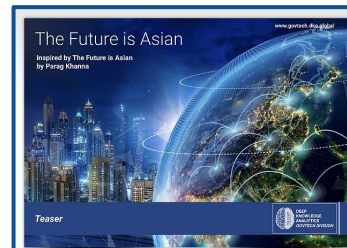


**GovTech / E-governance  
Global Industry Landscape  
Overview 2019**

Teaser

**GovTech / E-governance  
Global Industry Landscape  
Overview 2019**

View



**The Future is Asian**  
Inspired by The Future is Asian  
by Prang Khma

Teaser

**The Future is Asian**

View

# GovTech Division Timeline

During the last few years, Deep Knowledge Analytics GovTech Division has produced a number of evaluations of the GovTech Industry landscape. The company has recently published the second iteration of “GovTech / E-governance Global Industry Overview”, which describes the impact of the COVID-19 outbreak on the industry. The report provides information on the main types of technologies used by GovTech including Blockchain, AI and Machine Learning, IoT, Robotic Automation, and Geospatial Data Analysis, with an emphasis on the best cases of their implementation.



2019

2020

2021

'GovTech Development During COVID-19: How Technologies Have Helped' is an upcoming conference dedicated to coverage of the most effective E-government and GovTech solutions, implemented during the COVID-19 period. The scope of the conference will be split into five main directions that are - Government Efficiency, Economy Resilience, Healthcare Management, Quarantine Efficiency, and Vaccination Rate.

The event will bring together policy-makers, government officials and field experts all over the world to share their experiences and insights learnt from the pandemic. Also, the expansion of E-government and GovTech tools usage will be considered for the Post-pandemic world. Lastly, the further course of global fight against coronavirus and the necessary steps we have taken to consideration at this point will be discussed.

Exclusive Online Event



**GovTech Development  
During COVID-19:  
How Technologies Have Helped**

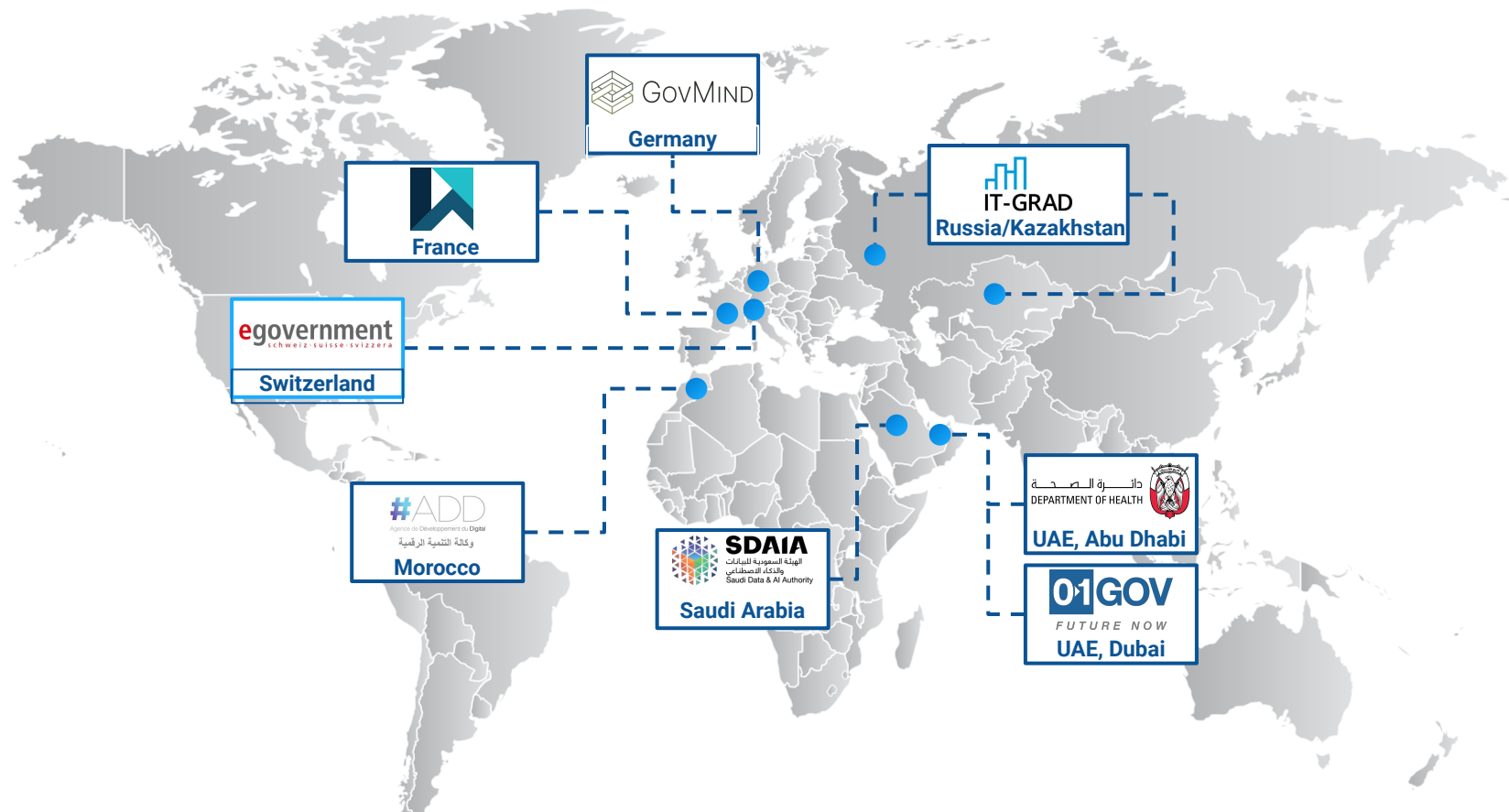
DEEP  
KNOWLEDGE  
ANALYTICS  
GOVTECH DIVISION

Conference

14 October 2021 | 5 PM BST

[www.dka.global/govtech-event](http://www.dka.global/govtech-event)

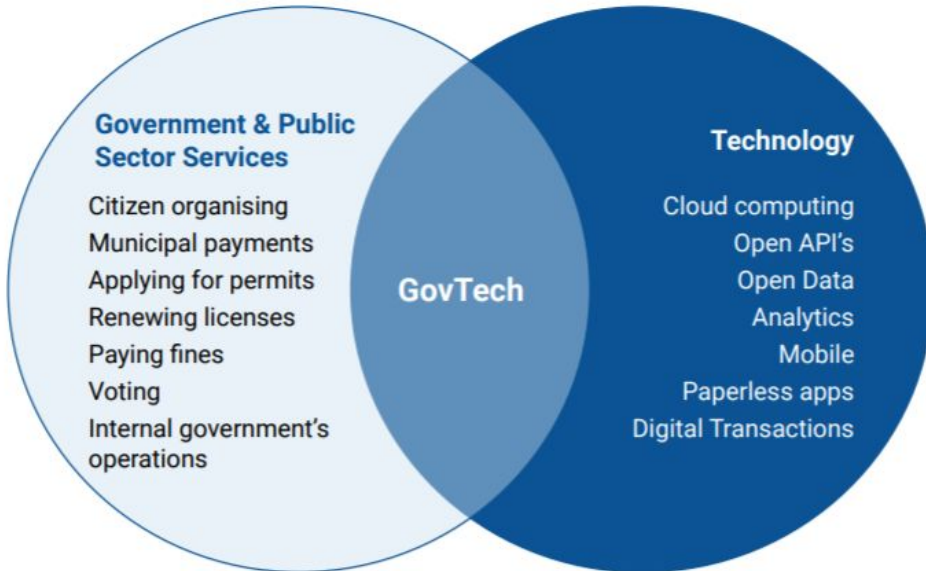
# GovTech Partnerships





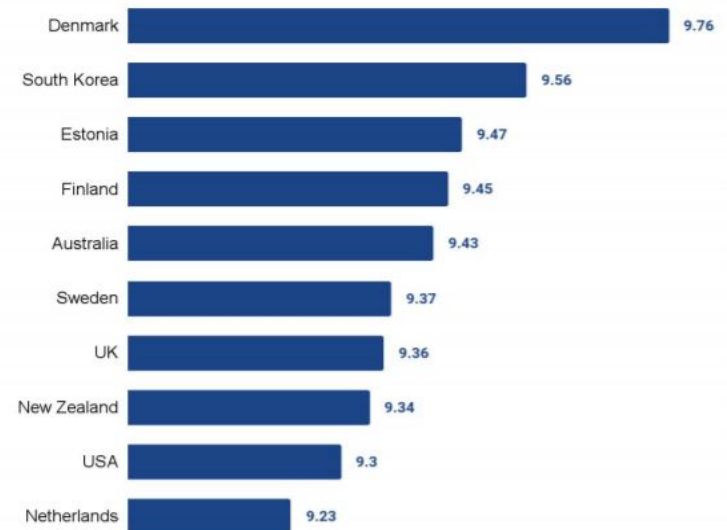
# GovTech Division: Value Proposition

Stay-at-home ordinances and social distancing caused by COVID-19 have changed government and constituency engagement. The coronavirus pandemic has also exposed the flaws of legacy tech stacks. The limitations of legacy systems, including critical capacity gaps, as and cybersecurity issues, have become apparent to government officials worldwide. Digital transformation is being catalyzed by federal programs and regulations. They are accelerating technology adoption by increasing capital investment and streamlining procurement processes. By using API (standardized data transfer) and open data, and combining multiple data sources to find monetization proposals, startups bring a different approach to service delivery to GovTech.



[www.govtech.global](http://www.govtech.global)

Top-10 Countries by GovTech Index in 2020\*



# SpaceTech Analytical Dashboard

# Proprietary Analytics

1

Deep analysis of the deal-making prospects in the SpaceTech space, identification of top mini-trends and larger tendencies in innovations and technology adoption.

2

Tangible forecasts on the 3-5 years horizon, providing an overview of future scenarios of the development of various technologies in the SpaceTech industry.

3

Practical guides for adopting various technological solutions and best practices, vendor profiling, and contract research strategy building.

4

Analysis of key market players in the emerging and high-growth areas of SpaceTech industry.

5

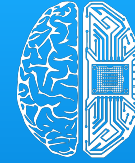
Comparative competitive analysis of companies, investors and government agencies to make an automated algorithm driven analytics for scoring and ranking of industry entities.

6

Specialized reports and case studies on different topics related to SpaceTech industry as a business development assistance services and analytics related to that.

7

White-label solutions in the form of interactive IT platform, big data analytics dashboard and interactive mindmaps.



SpaceTech  
Analytics

## Value Proposition

Custom Consulting Projects

“Ready-to-Use” Proprietary  
Reports

Covering M&A Prospects

Strategic Growth Ideas

# New Website and Dashboard

**SpaceTech Analytics Dashboard**

View more

SpaceTech Industry 2021/Q2 Landscape Overview  
View More

1000+ SpaceTech Leaders/Full Database  
View More

Upcoming Events  
View More

INVESTMENT DIGEST  
SpaceTech Industry 2021 / Q2  
July 2021  
View More

View more

**Add your Organization**  
Help the SpaceTech database and future reports become more complete by adding your organization for free. Fill in the form, it will take no longer than 5 minutes.  
Fill Form

**Become a Partner**  
Our partners help make our reports more advanced through data sharing, collaboration, sponsorship and research. We'd love to discuss any ideas.  
Reach More

**Proprietary Analytics**  
SpaceTech Analytics produces open industry reports covering high-growth sectors in the industry. Some of the more in-depth research will only be available to our clients under the "Proprietary Analytics" category.  
Reach More

**We provide expert opinions and comments upon request**  
SpaceTech Analytics Team is actively developing the space industry by providing highly comprehensive reports and recommendations based on applied data science tools, qualitative analysis, obtained anonymized data from top tier players, and more.  
Book a meeting

## Introduction the new home for SpaceTech:

**Global SpaceTech Ecosystem**

**Market Intelligence**

- Company Search
- Company Competitors Search
- Interactive Mindmaps  
View More
- Dashboard Parameters  
COMPANIES: 12000+  
INVESTORS: 5000  
HUBS AND R&D: 340  
INDUSTRY SECTORS: 14  
PARAMETERS: 100+  
DATA POINTS: 1499989
- SpaceTech Public Companies  
Investment Digest  
FAQ  
Send us Feedback

**Search Engine**

- Investor Search
- Investor Competitors Search
- Downloadable Analytics
- Space Medicine  
View More
- Interactive Charts  
View More
- SpaceTech Industry 2021 Report  
View More

**Financial Indicators**

- Investment Digest
- FAQ
- Send us Feedback

**Landscape Overview Documents**

- Teaser
- One Pager
- Press Release

[Access now!](#)

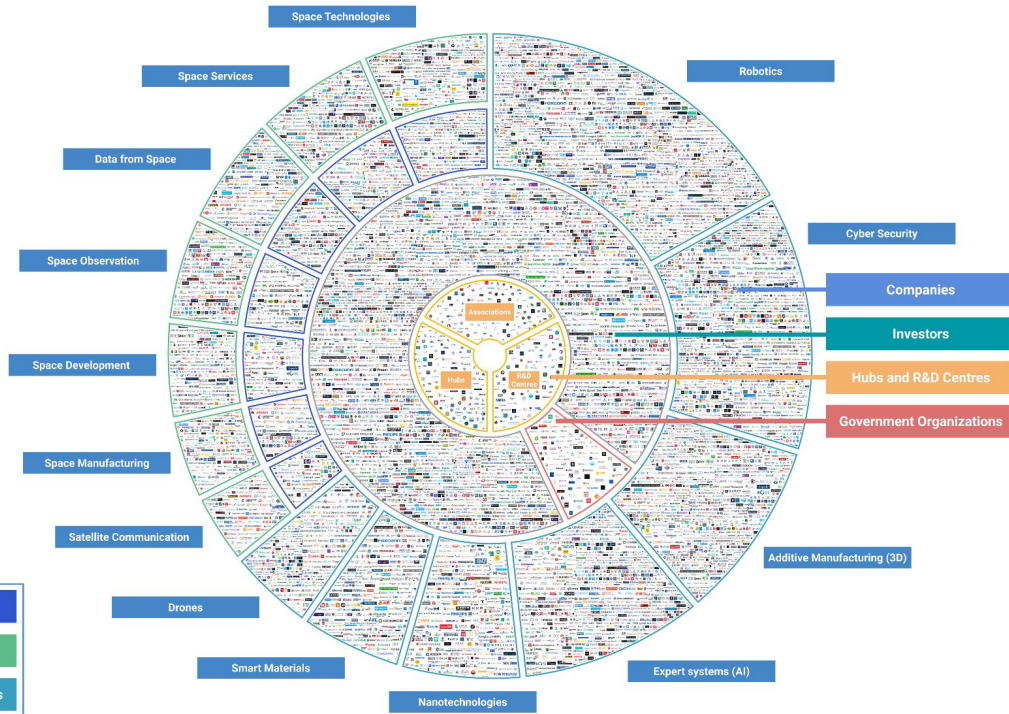
# Mindmaps

12 000 Companies

4 000 Investors

200 R&D Hubs and Associations

140 Government Organizations



USA

Canada

UK

Germany

China

France

India

Israel

Spain

Japan

Australia

Eastern Europe

Singapore

France

Southern America

Ireland

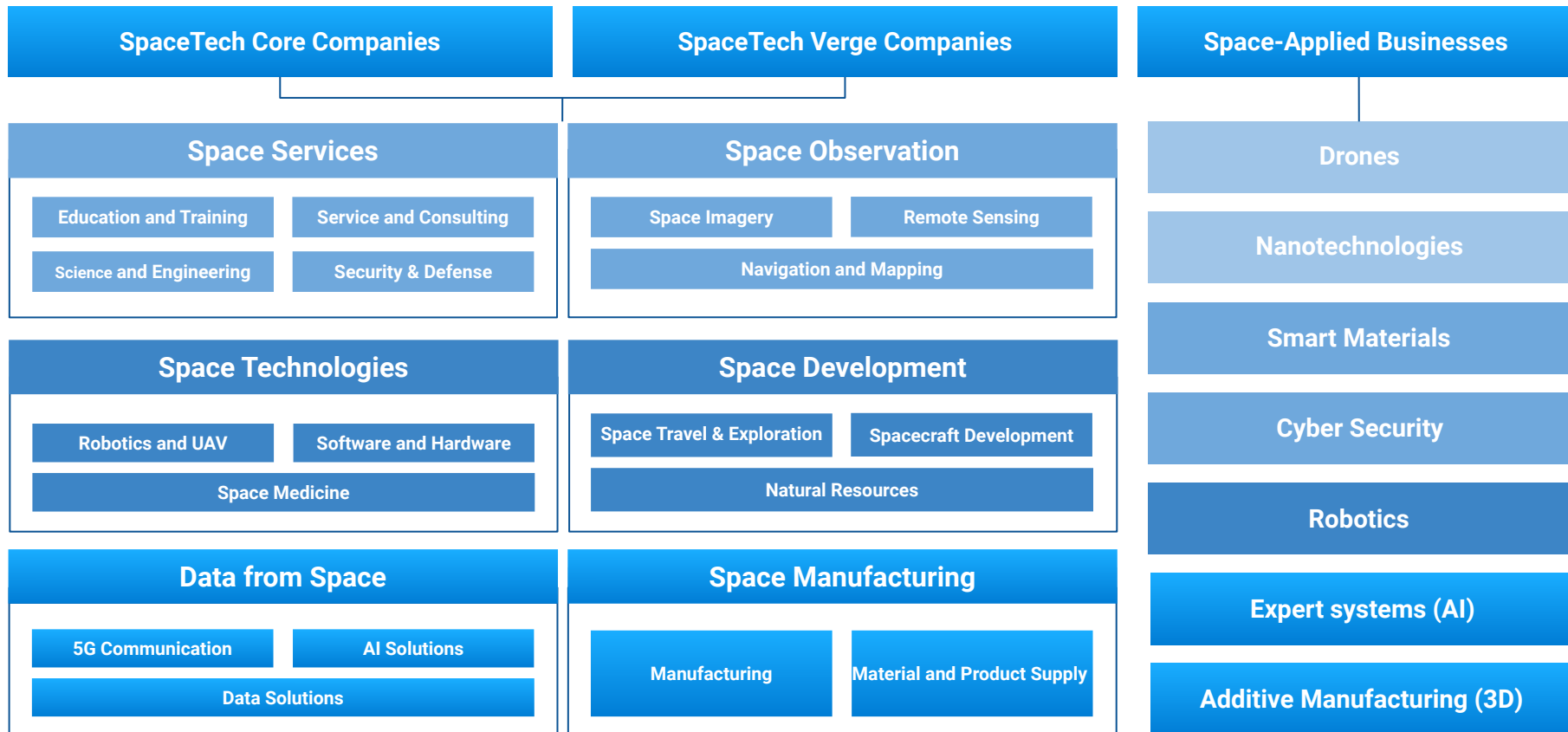
Gulf Region

EU

Africa

Sweden

# SpaceTech Industry Framework (How We See the Industry)



SpaceTech Analytics is now creating an analytically sophisticated Dashboard which will incorporate big data analytics, machine learning, AI engine, and investment analytics technologies already developed and validated by SpaceTech Analytics' parent company and its various analytical subsidiaries. Concept is being developed.



12,000+  
Companies

4,000+  
Investors

14 Industry  
Sectors

100+  
Parameters

1000  
Leaders

1,500,000  
Data Points

SpaceTech Analytics is a strategic analytics and investment agency focused on markets in the Space Exploration, Spaceflight, Space Medicine, and Satellite Tech industries. The range of activities includes research and analysis on major areas of high potential in the SpaceTech industry, maintaining profiling of companies and governmental agencies based on their innovation potential and business activity, and providing consulting and analytical services to advance the SpaceTech sector.



**SpaceTech Industry Landscape Overview**

Q3 2021

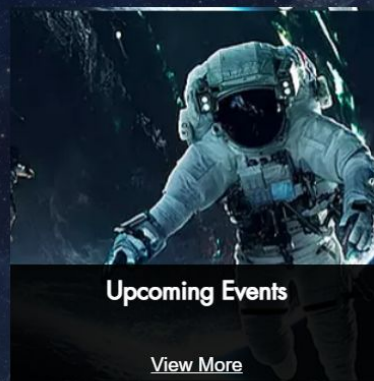
**SpaceTech Industry 2021/Q3 Landscape Overview**

[View More](#)



**1000+ SpaceTech Leaders Full Database**

[View More](#)



**Upcoming Events**

[View More](#)



**INVESTMENT DIGEST**

SpaceTech Industry 2021 / Q2

July 2021  
www.spacetechnology.global

 SpaceTech Analytics

**Investment Digest**

[View More](#)

[View more](#)



## MarketWatch

[READ THE ARTICLE](#)

"The release delivers information about major industry trends and sector insights on 350+ SpaceTech publicly traded companies and 700 investors. This is a part of an inaugural 165-page case study 'SpaceTech Industry Landscape Overview', dedicated to providing information about other segments of the space industry."

[READ THE ARTICLE](#)

"Based on a comprehensive analysis of key market players and overall industry dynamics, the project has identified a number of key trends and insights about the investment landscape, R&D collaborations, and more."

## THE TIMES OF INDIA

[READ THE ARTICLE](#)

"As per the report by Spacetechnics Analytics titled 'SpaceTech Industry 2021/Q2 Landscape Overview', most companies globally (2,820) are in navigation and mapping, followed by 1,000 manufacturing firms, 718 doing space communication, remote sensing (211), aerial imaging (152), spacecraft development (80), space travel (58), and space medicine (48)."

## NationaalDebat

[READ THE ARTICLE](#)

"Elon Musk's SpaceX might get all the headlines, but there are now a huge number of companies who are competing to open up an unprecedented level of human access to space. The U.S. now has 5,582 space-focused companies, almost ten times more than the next country, the UK, which has 615."

## Forbes

[READ THE ARTICLE](#)

"Most of the 10,000+ companies are clustered in just five sectors, according to a new report from SpaceTech Analytics. Navigation and mapping is the largest, with 2,820 companies, followed by Cloud Solutions at 2,406, and Manufacturing at 1,048."

## yahoo! finance

[READ THE ARTICLE](#)

"The report and the analytics dashboard are designed to serve as powerful tools for generating strategic insights, opportunity evaluation and competitor profiling relevant to SpaceTech decision makers, investors, consulting companies, and regulatory agencies."

# Our Team

## Board of Advisors (in a progress more people to be confirmed)



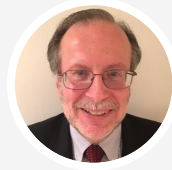
**Glenn Reynolds**

Chaired Professor of law at University of Tennessee



**Dr Dana G Andrews**

University of Washington Seattle | UW · Aeronautics  
Doctor of Philosophy



**Courtney Stadd**

Former and first Head of the Office of Commercial Space Transportation at the Department of Transportation



**Dr Andrew Aldrin**

Director of the Aldrin Space Institute at Florida Institute of Technology.



**Egbert Edelbroek**

CEO SpaceBorn United, space life science researcher

## Our Partners (constantly growing)



**StellarModal**



**SpaceBorn United**



**Space Ventures Investors**



**Promin Aerospace**



**Carolina Institute of Technology (CIT)**



**Alpine Space Ventures**



**Space4Women**



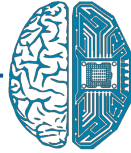
**Space Connex**



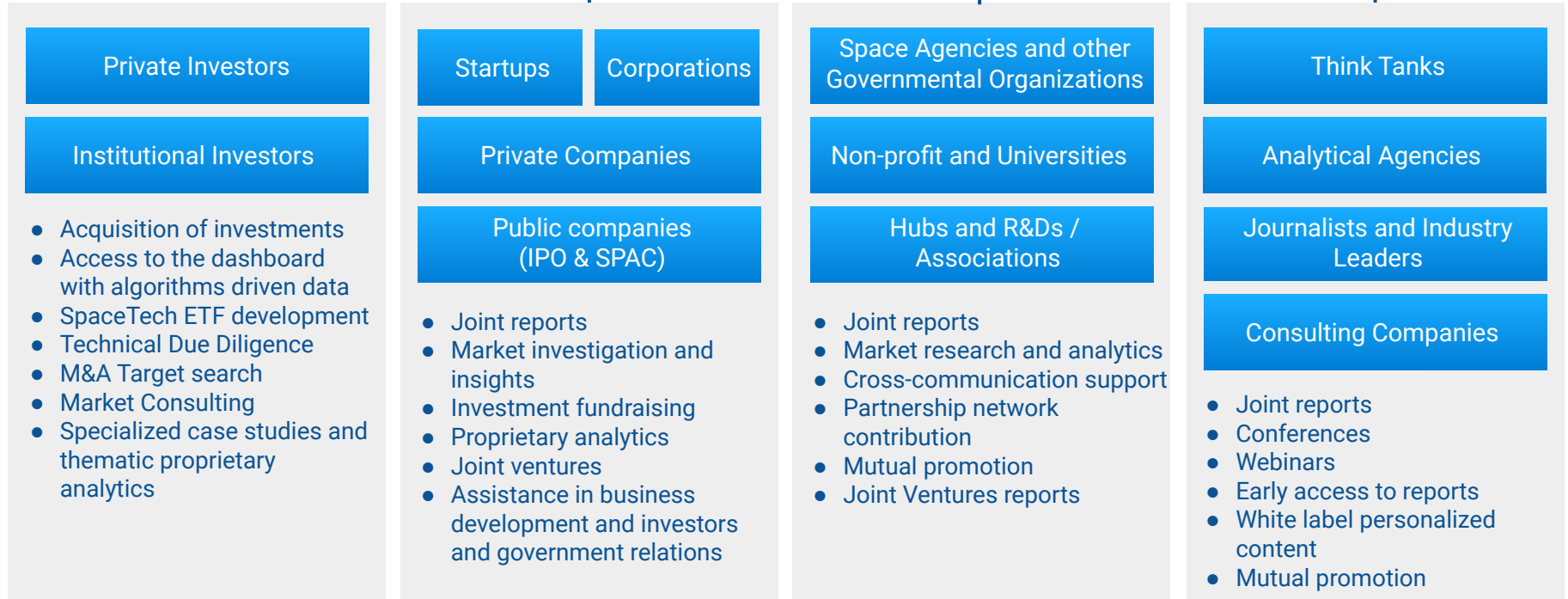
**AerOx**



**Emerging Technologies Sweden**

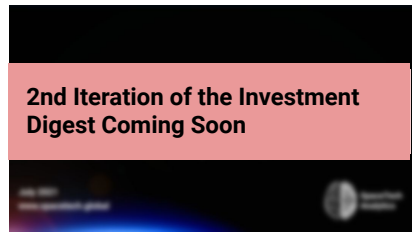


## SpaceTech Analytics





In the 85-page investment digest, we have assembled information about key industry trends and more than 350+ publicly traded SpaceTech companies in 20 industries, 5,000 leading investors in 50+ countries, 20+ venture funds, and other SpaceTech related players contribute to the growing space economy experiencing a rapid growth nowadays.



In the next iteration of the investment digest, we plan to analyze an expanded portfolio of companies, create custom SWOT-analyses, and also to reveal in detail the topic of SPVs, SPACs and other popular investment tools in the SpaceTech industry.

## SpaceTech AMC (2021)



SpaceTech AMC is a performance tracker certificate, issued in Switzerland, providing exposure to an advanced SpaceTech company on track for a Luxembourg IPO.

## SpaceTech SPV (2021-2022)



Special-purpose entity (special-purpose vehicle/SPV) is a special purpose company, or "project company", formed to carry out a specific project or for a specific purpose. This investment instrument becomes more popular in SpaceTech Industry. In this regard, SpaceTech Analytics will create a list of the most promising companies from different sectors with high potential that may become a prospective investment.

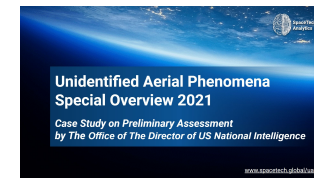
## Open Access Analytics

View more

### Industry Overviews and Investment Digests



### Case Studies



## Space Medicine Activity

With the growing financial capabilities of the space industry, the commercialization of space travel is inevitable. As long-term spaceflights are becoming closer to reality, we shall consider the possibility of human gestation on other planets to ensure the safeness and success of future generations of space explorers.

Our interest in space medicine topic is dedicated to state-of-the-art technologies that will enable humankind to survive in the space environment, give birth, and endure interplanetary journeys in the future of space exploration.

## Special Case Studies and Joint Reports

### Space Medicine and Human Longevity in Space

Q3 2021

[www.aginganalytics.com](http://www.aginganalytics.com)  
[www.spacetech.global](http://www.spacetech.global)  
[www.femtech.health](http://www.femtech.health)



### Mitochondria in Longevity and Space Medicine

Q3 2021



[www.aginganalytics.com](http://www.aginganalytics.com)

### Giving Birth in Space

Q3 2021

[www.spacetech.global](http://www.spacetech.global)



# Events by SpaceTech Analytics



SpaceTech Analytics

## Space Mining The High Frontier

Conference

28 July 2021 | 5 PM BST

The virtual conference that took place on July 28, 2021 (5 pm - 8 pm, BST) where SpaceTech Analytics business development consultant Rand Simberg and speakers from the space-mining industry discussed the opportunities presented by the rapidly emerging interest in in-situ resource utilization (ISRU) – as a key part of expanding human presence in space and in generating economic benefit both off planet and terrestrial, from space activities. Speakers also addressed the need to conduct space-resource utilization in a sustainable manner to allow healthy growth of the off-world economy.



SpaceTech Analytics

## Staying Healthy in Space

Conference

15 September 2021 | 5 PM BST

The virtual conference taking place on September 29, 2021 (5:00 pm - 9:00 pm, BST) in which speakers from the space-medical community will discuss the opportunities and challenges presented by the coming rapid growth in the number of humans working, playing, and perhaps even living in space – as a key part of expanding human presence in space and in generating economic benefit both off-planet and terrestrial, from space activities. Speakers will address the issues, potential solutions to them, and identify areas of necessary research to better understand both the issues and best solutions.



SpaceTech Analytics

AER OX

DEEP KNOWLEDGE GROUP

## The Future of Space Medicine

Conference

15 October 2021 | 5 PM BST

Understanding of new technologies emerging for space medicine will become ever-more important with the soon-to-come plunging of launch prices, enabling thousands of people, many not necessarily in the best of physical health, to visit space in the near future. In addition, with that much activity, the chances of accidents will vastly increase, and many of them will need to be dealt with in space, because waiting for an ambulance to get back to Earth may be too late. But we haven't developed protocols or procedures for surgery or burn treatments in free fall (though ironically, that may be the best environment in which to treat a burn victim, and conceivably, there could even be orbital hospitals for such cases).

## Upcoming Conferences



**Assembly in Space**



**Space Longevity**



**3D Printing in Space**

# SpaceTech Analytics Roadmap

2021  
Q3

Giving Birth in Space (Joint Report)

Space Medicine Conference

SpaceTech Industry Landscape Overview 2021/Q3 with contributions

New Dashboard and IT Platform

Incorporation in the US

2021  
Q4

AI in SpaceTech Industry Case Study

Public Companies Investment Digest

Advanced Visualisation Prototypes

Incorporation of Machine Learning, AI Engine

AMC tracker, providing exposure to an advanced SpaceTech company on track for a Luxembourg IPO



Launch SpaceTech SPV as a managing company

2022  
Q1/Q2

Operating Board of Advisers (15 people)

Joint projects with BoA and partners' network for new connections and orders

Developed network of sponsored societies for brand development

Non-profit for space medicine development in partnership

2022  
Q3/Q4

Joint venture with the investment fund

Paid Contributions and access to the Dashboard on a subscription mode

Consultancy and proprietary analytics for customer track record and investment raising



# FemTech Analytical Dashboard

# Overview of Activities

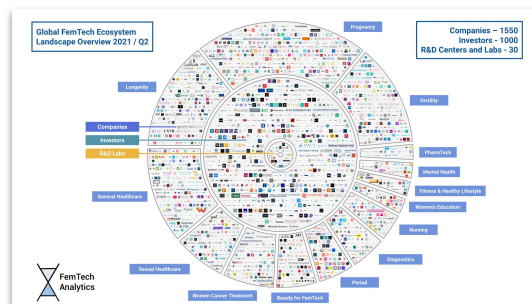
## Open Access Analytical Case Studies

Preparing open access studies focused on global FemTech Industry landscape for the purposes of a wide range of customers.



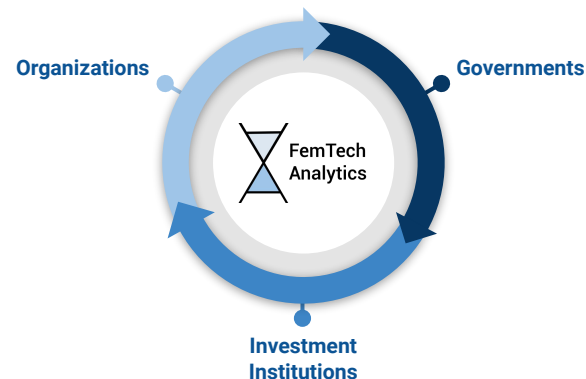
## Interactive IT-Platforms

Providing a framework for a better understanding of FemTech, including personalities, companies, investors, R&D centers, and interconnections between market players.



## Proprietary Analytics

Delivering proprietary analytical services, based on the specific customer needs. Strategic partnership with leading organizations, investment institutions, and governments across the globe.



# Open Access Analytical Case Studies

FemTech Analytics develops a sophisticated analytical case studies to provide overview of the FemTech market ecosystem.

**Open access analytical case studies** include:

- Market overview and short-term projections.
- Market ecosystem analysis.
- Segmentation by sectors, product types, regions, end users, etc.
- Overview of key trends and innovations.
- Key opportunities and challenges on the FemTech market.
- Data-driven insights about emerging areas in FemTech.
- SWOT analysis of the most promising femtech companies.

**The main goals of the analytical products** are to highlight the importance of the FemTech industry; determine the most effective solutions invented and implemented, and to consider existing tools and solutions that have been further developed and boosted.

## Industry Overview



## Special Case Studies



## Investment Digest

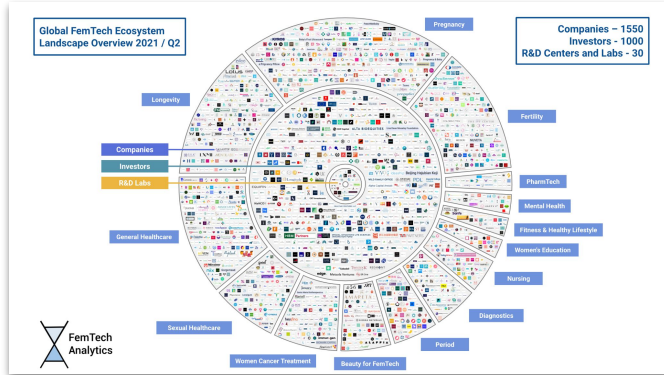


## 700 FemTech Leaders

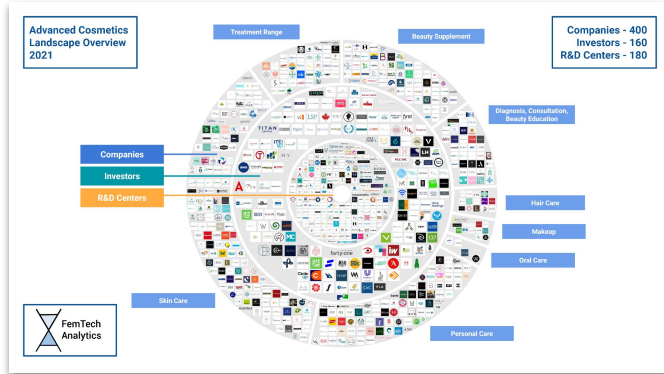


# Interactive IT-Platforms

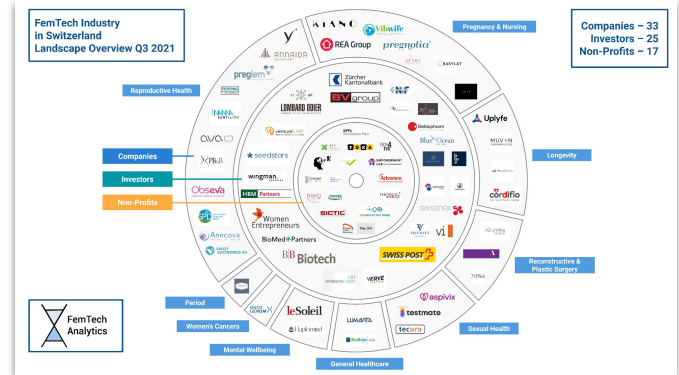
## Global FemTech Ecosystem



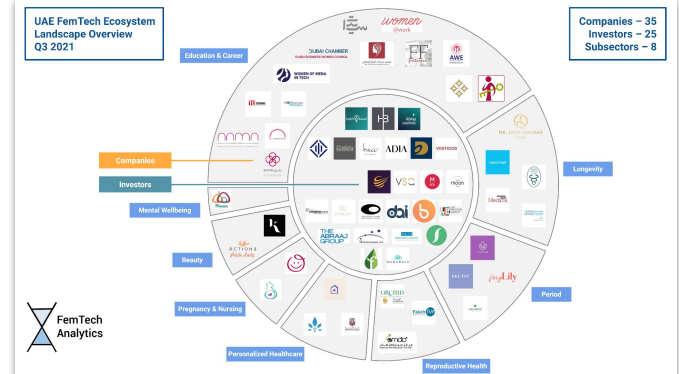
## Advanced Cosmetics Landscape



## FemTech Industry in Switzerland



## FemTech Industry in UAE



# Proprietary Analytics

FemTech Analytics is a strategic partner to the leading FemTech organizations, investment institutions (VC funds, investment banks), and governments across the globe – in matters related to investments, strategic positioning, and policy development in the areas of FemTech research.

While FemTech Analytics is regularly producing open industry reports covering high-growth sectors in the women's healthcare, including reproductive health, pregnancy & nursing, emotional wellbeing, and diagnostics, some of the more in-depth research is only available to our clients and strategic partners under the "Proprietary Analytics" category.

## **Our services** include:

- Investment landscape profiling, identifying investment ideas in the FemTech field
- Preliminary due diligence
- Comprehensive due diligence
- Infringement analysis of technology
- SWOT analysis of companies and technological sectors, competitive profiling
- Industry profiling and growth strategy development for top-tier companies and governments

## The value our reports deliver:

Deep analysis of the deal-making prospects in the FemTech space, identification of top mini-trends and larger tendencies in innovations and technology adoption

Tangible forecasts on the 3-5 years horizon, providing an overview of future scenarios of the development of various technologies in the FemTech industry

Practical guides for adopting various technological solutions and best practices, vendor profiling and contract research strategy building

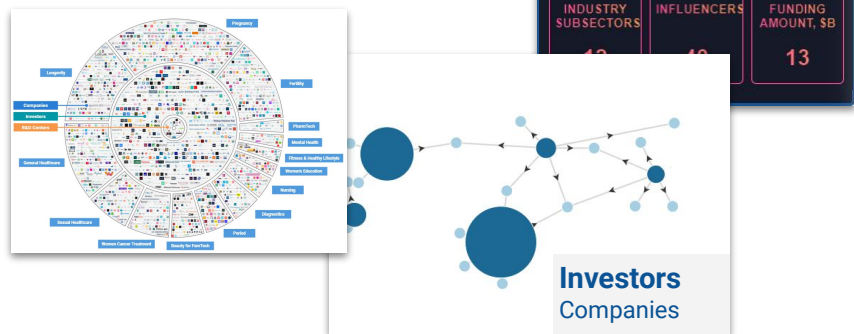
Analysis of key market players in the emerging and high-growth areas of FemTech industry

# Our Approach

At FemTech Analytics we believe in the power of data. It is essential for us to present data so it can tell a story about markets and trends and point to a unique growth opportunity or investment prospects.

## Our Visualization Methods Include

- 2D and 3D data visualization charts.
- Knowledge graphs.
- Multiparametric analysis.
- Deep SWOT analysis charts.
- Mind maps, Treemaps.
- Network Diagrams.
- Trends charts and heatmaps.
- Filters and sorting tools.



## Technologies are Applied For Our Products



Data Aggregation and Analysis



Clusterization and Competitor Analysis

Supervised and unsupervised Machine Learning

Brownian motion modelling for stock market forecasts

Deep neural networks

Real option analysis, scenario planning

Natural language processing

K-Means algorithm for companies clusterization

Data parsing

Calculation of the distance between companies in multidimensional space

GARCH model

Using tag clouds to categorize companies

## Global FemTech Ecosystem

Companies & Investors

Top Public Companies

Leading Companies

Leading Investors

### FemTech Mindmap



View More

### Dashboard Parameters

COMPANIES

1500+

INVESTORS

1000

R&D CENTERS

30

INDUSTRY SUBSECTORS

14

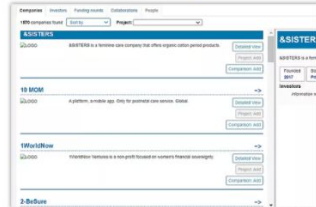
INFLUENCERS

50

FUNDING AMOUNT, \$B

16

### List of Companies



View More

AI for FemTech

Longevity in FemTech

FemTech Market Trends

Industry Overview

Other Assessments

Top 50 FemTech Leaders

Leading R&D Centers and Labs

Top FemTech Conferences

### FemTech Market Overview



View More

### FemTech Investments Overview



View More

### FemTech Industry 2021 Report



View More

Teaser

One Pager

Press Release

Landscape Overview Documents



## About Us

### FemTech Analytics

is a strategic analytical agency focused on relatively young yet the next big market disruptor FemTech market, including subsectors:

- Longevity for women
- Mental Health & Healthy Lifestyle
- Reproductive Health
- General Healthcare

The range of activities includes research and in-depth analysis on major areas of high potential in the FemTech industry, profiling of companies and governmental agencies and providing consulting and analytical services to advance the FemTech sector.



## Our Services

### Open Access Analytics

Preparing open access studies focused on the global FemTech industry for the purposes of a wide range of customers.

.....

### Interactive IT-Platforms

Providing a framework for a better understanding of FemTech, including personalities, companies, investors, R&D centers, and interconnections between market players.

.....

### Proprietary Analytics

Delivering proprietary analytical services, based on the specific customer needs. Strategic partnership with leading organizations, investment institutions, and governments across the globe.

## FemTech Analytics In Press



First-of-its-Kind Full-Scope Overview of the Emerging FemTech Market



FemTech: Key trends and companies driving the future in women's healthcare



The New Specialized ThinkTank FemTech Analytics has profiled and analyzed the 2021 global FemTech Industry



## Management Board



**Kate Batz**

*Director at FemTech Analytics*



**Maria Shmelova**

*Head of FemTech Analytics*



**Julia Bondaruk**

*Business Development Manager*

## Our Advisory Board



**Flynn Lebus**

*Director at FSG*



**Dr. Simona Roggero**

*Entrepreneur, MD, PhD, CV Lab*



**Dr. Elan Ziv**

*CEO & Medical Director,  
ConTIPI Medical*



**Rachel Bartholomew**

*CEO & Founder of Hyivy Health Inc.*

# Our Partners & Ambassadors

## Partners

**EPFL**  
Innovation Park



**Uplyfe**



MyMenopauseRx



## Ambassadors



**Netta Doron**

*Linkedin Marketing & Sales*



**Joyce Knappe**

*CEO & Founder of Pro Parents*



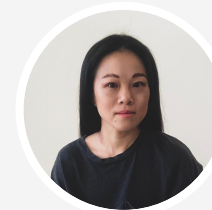
**Astrid Gyllenkrok  
Kristensen**

*CEO & Founder of LEIA*



**Maïa Alexaline**

*CSO & Business Builder at Lyv*



**Karen Heng**

*Founder of dellacare*



## FemTech Advancing Women's Wellness and Lifespan

FemTech Analytics

Virtual Conference

30 September 2021 | 5 PM - 8 PM BST

### FemTech Advancing Women's Wellness and Lifespan

A virtual 1-day conference featuring a number of FemTech influencers, including founders & CEOs of startups and established companies, investors, scientists and other key players in the Women's Health industry. The event will focus on the impact of technologies on women's health and lifespan and how FemTech contributes to women's Longevity in general.



## FemTech Industry Landscape 2021: Discovering New Horizons

FemTech Analytics

Conference

29 July 2021 | 5 PM - 8 PM BST

### FemTech Industry Landscape 2021: Discovering New Horizons

The virtual conference "FemTech Industry Landscape 2021: Discovering New Horizons" held on July 29, 2021, where professionals from FemTech Analytics and invited guest speakers who are Founders & CEO of FemTech companies and start-ups, Healthcare Innovators, Investors and Hubs, Women Influencers and Enthusiasts shared insights, findings and personal experience about new possibilities and cutting-edge technologies in fast developing FemTech market.

**The main goal** of the FemTech Blog is to **increase awareness about FemTech, share insights, case studies and build community**. The Blog contains integrated social media buttons for Facebook, Twitter and LinkedIn to foster improved media engagement.

We are constantly updating our content with helpful information, articles, companies case studies and success stories.



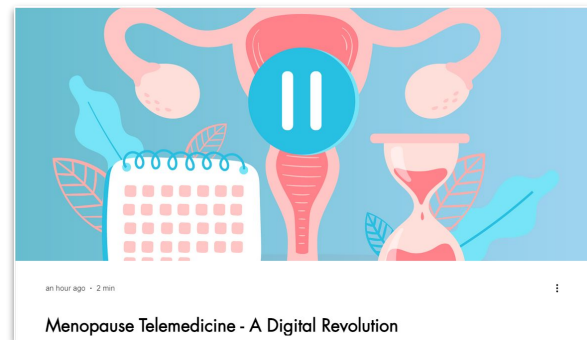
## Why FemTech Is On The Rise?

How a shift in societal perception of female health, rapid digitalization and personalized healthcare have given a boost to the FemTech industry development.



## 11 Key Trends Facing The Advanced Cosmetics Industry In 2021

Describing some of the industry's latest Advanced Cosmetics innovations and the key trends to watch in 2021.



## Menopause Telemedicine – A Digital Revolution

A blog post contributed by FemTech Analytics' partner – MyMenopauseRx and the company's Founder & CEO Barbra Hanna.

# Longevity Biomarker Big Data Analytical Dashboard

# Longevity Biomarker Big Data Analytical Dashboard

One of the technical solutions developed by the company is Biomarkers-based Big Data Analytics Dashboard. One of its main goals is to assist financial institutions exposed to Longevity Risks. Such institutions are hedge funds, pension funds and investment pension funds, insurance, and reinsurance companies, Healthcare-related investment entities. DKG's value-proposition will be delivered through the Biomarkers-based AI-fueled models applicable for computational risks assessment, general risk management, and de-risking practices.

## Computational Risk Assessment Tools

Value at Risk assessment family & Expected Shortfall

Risk-adjusted Return on Capital (RAROC)

Full Scope of Classical Statistical Methods



An analogue technical solution, Longevity Investment Big Data Analytics Dashboard, can be seen above

NextGen AI-fueled Market Predictions

Advanced Hedging Models

Monte-Carlo Risk Assessment

# Longevity Risk / Longevity-derived Financial Instruments

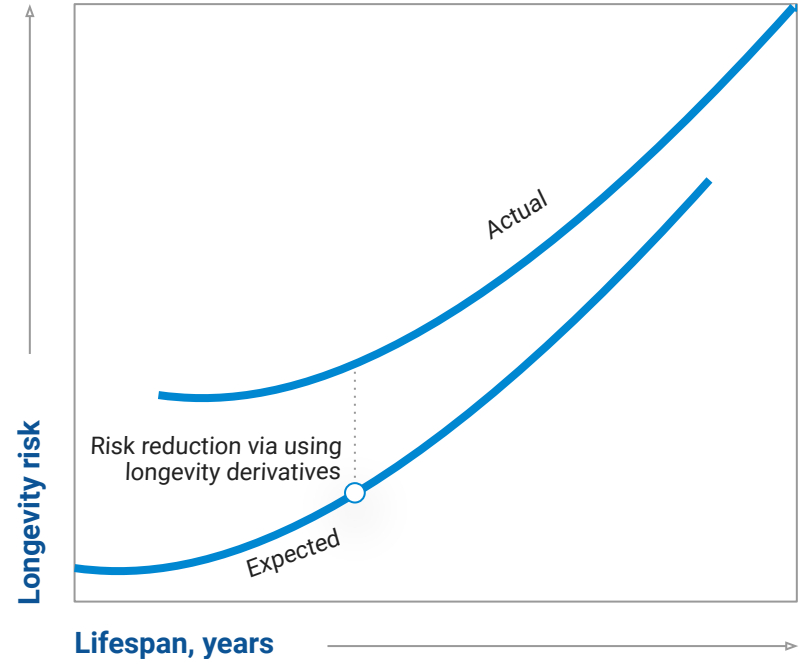
Extended lifespan raises challenges regarding how individuals manage their wealth. It also causes the Longevity risk which arrives due to inaccurate predictions of the level of mortality rate and numbers of retirees. The Longevity derivatives are the tools aimed to suppress the adverse effects of this risk.

## Problems

- Inaccurate predictions of mortality level rate and numbers of retirees
- **Solvency II Regulation** requires that insurance companies measure and evaluate the Longevity risk and, as a result, increase the capital level required for the Longevity risk hedging
- The absence of optimized and accurate Longevity-related financial instruments

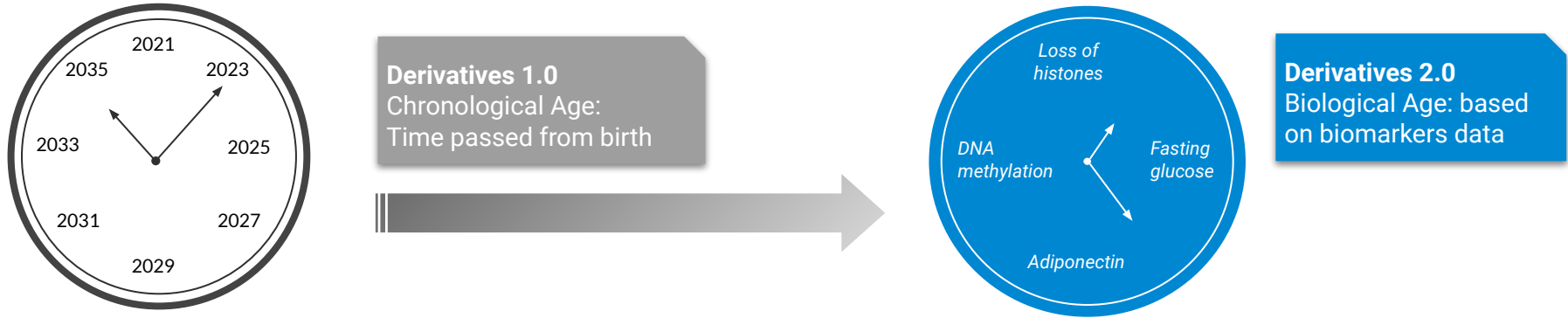
## Solutions

- Hedging Longevity risks with Longevity-derived financial instruments
- Engineering and valuation of a next generation of the Longevity derivatives
- New investment opportunities due to Longevity derivatives weak correlation with other financial risks



# Longevity Risk / Longevity-derived Financial Instruments

As a rule, the players of life insurance markets use Longevity instruments tied to **chronological age**. That means that underlying assets are related to chronological age, for instance, mortality indexes. At the same time, we propose the development of financial derivatives tied to **biological age (Derivatives 2.0)** that can prove their efficiency in decreasing the Longevity risk.



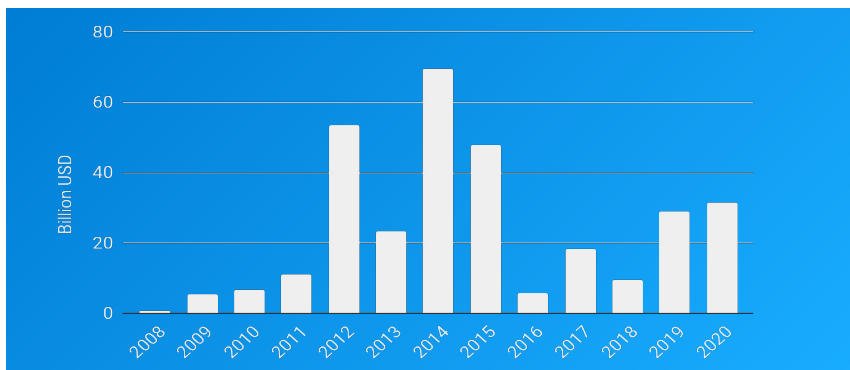
	Chronological age	Biological age
<b>Definition</b>	The amount of time that has passed from birth of organism to the given date	Age based on the individual's physiological health status that is defined by a health-related biomarkers analysis. Biological age highlights the cumulative aging rate of a person.
<b>Key features</b>	<ul style="list-style-type: none"> <li>Do not influenced by lifestyle habits or socioeconomic conditions</li> <li>Has a statistical correlation with how people feel and function physiologically, but it is varies between individuals</li> </ul>	<ul style="list-style-type: none"> <li>May be different from the chronological age as it correlates with the health status that is varies among individual of the same chronological group</li> <li>Can be reversed/accelerated by lifestyle factors, such as sleeping, diet, exercising</li> </ul>



# Longevity Risks Hedging Opportunities for Companies

The graph below depicts the dynamics of Longevity swaps' operations in the period of 2008-2020 years. During this period, deals for the amount of \$ 313 billion had been struck. The amount of new operations correlates with life insurance market size. For example, the insurance market size in the US also significantly dropped after the 2015 year and slightly recovers during the 2016-2020 years (IBISWorld, 2020). About 95,77 % of longevity swap deals belong to 3 countries: UK (53,49%), the Netherlands (25,09%) and USA (17,19%).

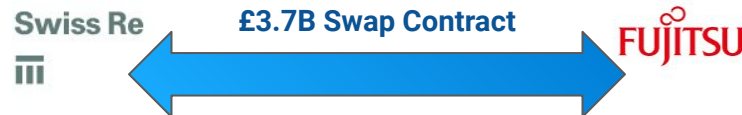
Longevity Swaps Operations, 2008-2020



Source: Artemis, Longevity Derivatives

The one of the biggest deals using longevity swap was signed in May 2021 between **Swiss Re as an arbitrageur** and **The Trustee of the ICL Group Pension Plan, a Fujitsu pension scheme, as a hedger**. This longevity risk transfer insured **£3.7 billion of hedgers' liabilities** and covers pensions in payment for approximately 9,000 members. **Other institutions** of the swap deal infrastructure include:

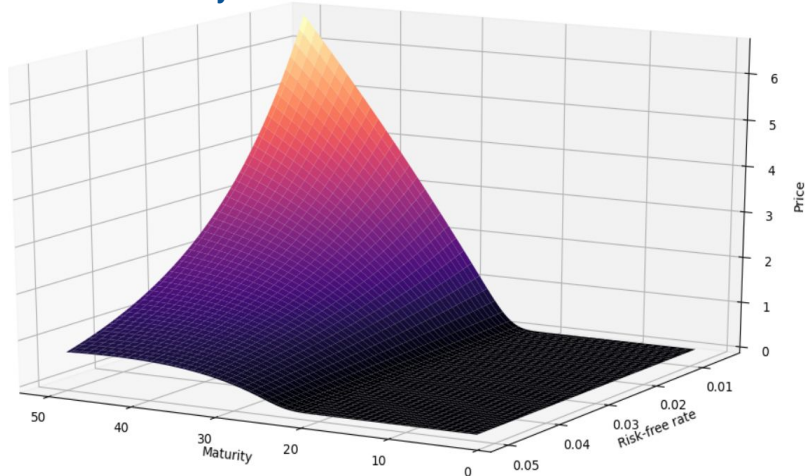
- **Willis Towers Watson** as actuarial and transaction adviser to the hedger
- **Gowling WLG LLP and Momentum Investment Solutions and Consulting** as legal and investment adviser to the hedger
- **Pinsent Masons LLP** as legal adviser to the hedger
- **Insight Investment** as calculation agent, collateral manager, and collateral valuation agent.



# HALE Options Valuation

Taking into account the aforementioned market dynamics, as well as the existing need in the new solutions developed specifically for the financial market of the Longevity Industry, DKG has developed a unique pricing model for Longevity options. We used database containing life expectancy (HALE) at birth statistics (The World Bank). For this data we calculate growth for each year and use them for valuation of the simple Longevity option. Black-Scholes formula for non-tradable assets is applying for calculating possible payoffs of call and put options. The next step we want to realize is engineering derivatives backed by biological age (based on the biomarkers of longevity) of specific cohorts of insured persons.

## Price Results for Strike Price = 80, Maturity and Risk-free Rate are Variables



## Inputs that raise HALE Options prices:

### Call Option:

- Lower Sharpe ratio
- Higher biological age CAGR
- Longer maturity

### Put Option:

- Higher strikes
- Lower Biological age CAGR
- Shorter maturity

### Both Call and Put Option:

- Lower Risk-free rates
- Higher standard deviation (as potential biological age growth leads to higher potential pay-offs)
- Lower current median biological age (underlying asset price) (because of the biological life duration limitation)

InvestTech Advanced Solutions, a spin-off of the Deep Knowledge Group, has recently developed a full-fledged proprietary version of the Longevity Derivatives and Financial Instruments report. This overview develops a holistic point of view on the development of the advanced Longevity-based financial instruments. The report provides additional market analytics of the Longevity-tied instruments, as well as analysis of the existing modelling approaches. An interested reader will find an exhaustive overview of the biomarkers-based Longevity assessment solutions, including more profound information on the development of the Longevity derivatives 2.0.



## A value proposition of the report



Allows to assess the existing market of the Longevity-tied financial instruments



Provides an overview of the advanced models developed for the purposes of the Longevity and mortality indices creation

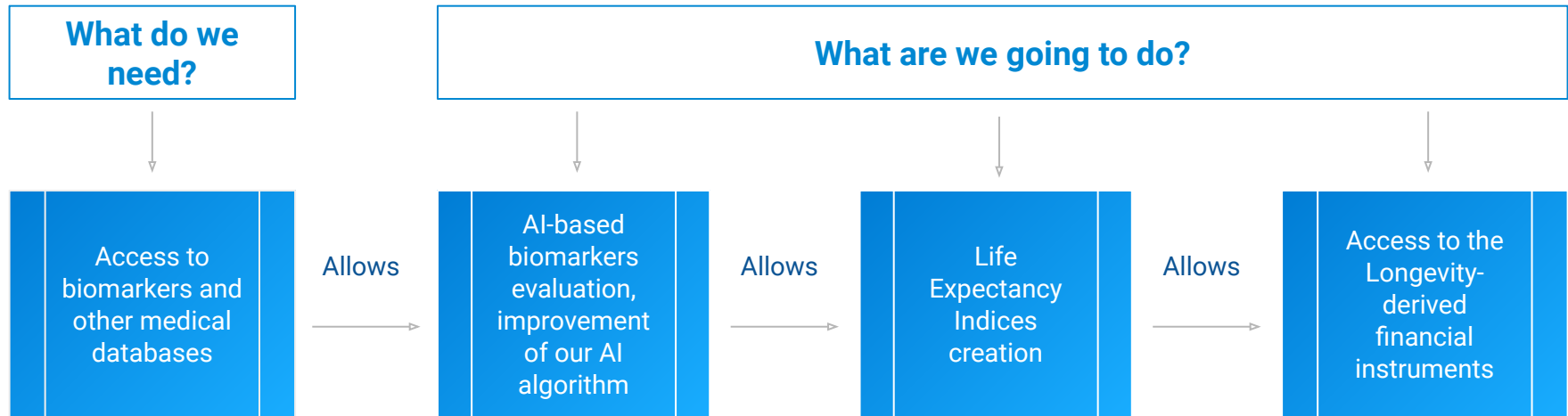


Allows to go through the whole process of the creations of the Longevity derivatives 2.0, including the exact results and formulas proposed for the option pricing

# Biomarkers of Human Longevity for the Derivatives 2.0 Development

The proliferation of digital medical data, including from wearables, implies the ability to obtain longitudinal and high frequency medical information with the potential for a new generation of Longevity biomarkers-derived financial instruments that can be used, for example, as risk-transfer tools. The aim of Deep Knowledge Group is to use such digital medical data in order to create Longevity derivatives.

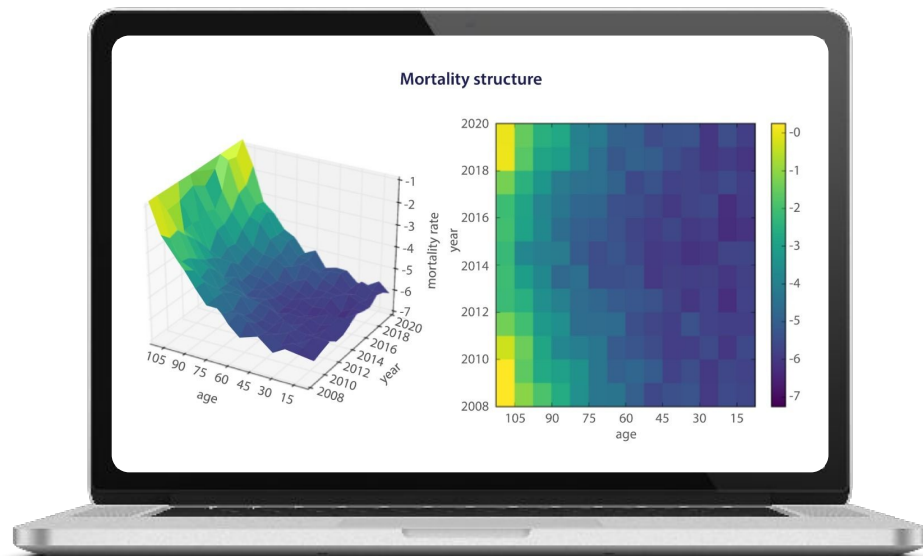
The databases are necessary for training the AI algorithm which role would be to evaluate certain biomarkers. Obtaining the needed medical data will allow the company to proceed on its main development trajectory which is presented below:



# Longevity Risk Modelling

As a specific example of the services provided via the Dashboard is Longevity Risk Modelling. This service enables clients to manage Longevity Risk more flexibly compared to currently available products such as life annuities. Determination of income while being alive as well as a principal payment on death providing a bequest that reflects individual preferences.

Our **AI-driven big data analytics tools** support the release of longevity derivatives which reduces the longevity risk substantially for life annuities.



## Support of Longevity Insurance Products

Assessment of Personal Longevity Risk

Comprehensive AI-based Analytics of Financial Products

Real-time Evaluating


Simulations of Different Strategies

ML-based Forecast

# Advancement and Developing Prospects

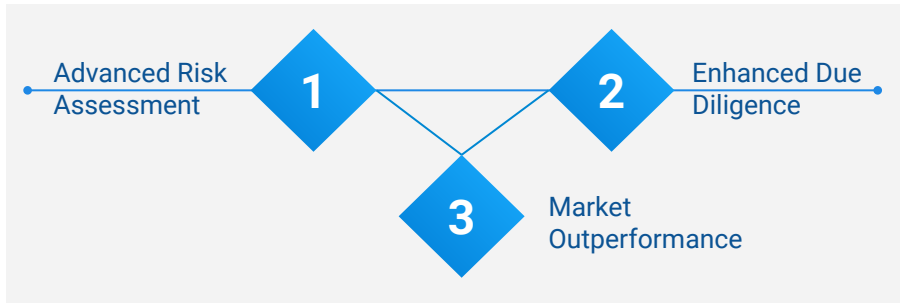
The scope of our activities within biomarkers industry is not limited to creation of the uniquely engineered Longevity-tied financial instruments. We set a goal to identify and assess various financial solutions that would be based on diseases-related biomarkers as well. Thus, the scope of future products and services will be subject to further extension across various practical and biomedical research domains.

The implementations of conceivable clinical information flow and facility options also involves the following areas:

-  **Longevity Insurance Programs**
-  **Personal Lifestyle and Diet Recommendations**
-  **Platform for Therapeutic Clinical Trials**
-  **Longevity Researches**
-  **Broad Biomedical Implications: Oncology, Diabetics, Cardiovascular Pathologies**
-  **Diverse and Accessible Molecular Diagnostics Array**

A vast array of tests would help grow and progress in sectors such as cancer, diabetes, cardiovascular disease, and neurodegenerative illnesses, not only for detection but also for the forecast of their development or progression. Having numerous data points from diverse cohorts opens up the prospects of developing advanced FinTech solutions and automotive platforms.

# Biomarkers Big Data Analytics Dashboard



General risk management is executed via the linear and nonlinear equations. The parameters for these equations are computed based on the statistic correlations, expert marks, and benchmarks. Our key feature is the computation of such parameters based on the biomarkers' assessment. Effective implementation of these techniques requires profound Big Data-based analysis and thus cannot be introduced without advanced NLP-fueled data aggregation.

Longevity Biomarkers are the first frontier on our journey. We will extrapolate our approach to oncology, diabetics, cardiovascular diseases, and other areas.



An analogue technical solution, Longevity Investment Big Data Analytics Dashboard, can be seen [by this link](#)

Such advances will allow us to proceed on NextGen Semi-Automated Biomarkers-based startups' due diligence and valuation. Furthermore, taking into account the well-developed Longevity Companies Big Data databases, our company will provide state-of-the-art semi-automated investment solutions for interested startups, developed companies, and all types of investors.

# Automated Data-driven Due Diligence

Using sophisticated quantitative analytical frameworks, we identify and provide recommendations on the most promising startups, most undervalued or overvalued companies and enhance the process of investment target identification for large investment funds.

Enhanced due diligence includes deep ratios analysis of scientific and technological strength, assessment of management team, analysis of marketing, IP and other pertinent metrics to strengthen and automate the due diligence process.



## Identification of Startups with Unique DeepTech Expertise

Spotting of Undervalued Prospective Companies

Technological Due Diligence and Analysis of IP Compliance

Risks Assessment Based on Hierarchical Holographic Modelling

Comprehensive Market and Competition Analysis

AI-based Analysis of Financial and Legal Information



# Legal Disclaimer

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# DEEP KNOWLEDGE GROUP

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