

7

SIGNS *of*
LONGEVITY
REVOLUTION



WHO IS SERGEY YOUNG?



Investor and visionary with a mission to extend healthy lifespans of one billion people and make longevity more accessible and affordable to everyone



Founder, Longevity Vision Fund

One of the leading longevity-focused funds in the world. Investing in affordable and accessible longevity



XPRIZE Foundation, Innovation Board Member

Age Reversal XPRIZE,
Development Sponsor



American Federation of Aging Board Member, AFAR

American Federation of Aging Research supports daring innovations to help us all live healthier and longer lives

Book Author

Foreword by:



Ray Kurzweil

American inventor
and futurist



Peter Diamandis

XPRIZE Foundation
Chairman



7 Signs

Longevity Revolution



1

Safer & Longevity Friendly Environment

2

Shift Towards Personalized and Preventive Medicine

3

Global Tech Giants Entering Life Sciences

4

Classifying Aging as a Disease

5

Winning the Fight with Killer Monsters

6

Economics of Aging Turns Positive

7

Augmented Humans

Environment is Fundamentally Safer & Longevity Friendly

The World is a Greener Place

China and India - the world's most populous countries - are leading the increase in greening on land

+10% per decade
change in leaf area in China



Source:
NASA

Driverless Cars

Self-driving technology will prevent most of the traffic deaths that happen today

1.25m
lives saved worldwide



Source:
General Motors

Plant-Based Food

Arrival of plant-based food (meat, eggs, fish, etc.) promises a number of health benefits

\$8b+
market cap



Shift Towards Personalized and Preventive Medicine

Wearable Devices Transforming Biomedicine Through Mobile & Digital Health

“Apple Watch has evolved into a health monitoring guardian and guru”

~34m
Units sold
globally in 2020

14%
CAGR over the
next 5 years

fitness tracking

irregular heart rhythm detection

ECG

fall detection

emergency SOS

Source:
Morgan Stanley,
Strategy Analytics



AI Becomes Better Doctor in Some Fields

AI brings the potential to revolutionize diagnostics, treatment planning, patient monitoring and drug discovery



99% vs **38%**
LYNA AI + Doctor Human Doctor

Successful diagnosis rate for metastatic breast cancer under time constraints



4^{sec} vs **13^{min}**
AI + Doctor Human Doctor

Analysing a patient's heart function on a cardiac MRI scan

Source:
The American Journal of Surgical Pathology, Telegraph

Global Tech Giants Entering Life Sciences

Google

Google increases exposure to health and wellness as well as Longevity



\$2.1b **\$1.5b**

Acquisition

R&D funding

TIME
CAN
Google
SOLVE
DEATH?

Source:
Morgan Stanley

Apple

Apple is emerging as an agent of change in healthcare and is building a healthcare platform and software development tools

\$300b

Apple's potential healthcare revenue by 2027



Apple Health



Source:
CBInsights, photo by esellercafe

amazon

Amazon gets into pharmacy space by acquiring PillPack. Developing own pharmaceuticals supply chain becomes a reality

\$0.7b

Acquisition



Classifying Aging as a Disease

We are Closer than Ever to Classifying Aging as a Disease

The official recognition of aging as a disease by regulatory bodies like the Food and Drug Administration (FDA) will result in inflow of talent and resources to the challenge of curing aging

afar

Targeting Aging with Metformin, **TAME**, trial may become a catalyst on the road to acceptance of aging as a disease

Total current aging research spending

\$2-4b

Worldwide pharma R&D expenditure

\$172b

Source: Evaluate Pharma, HourGlass



World Health Organization

In 2018 World Health Organization added a new code for “**old age**” to its disease classification system

AGING
IS ~~NOT~~ A
DISEASE



Winning the Fight with Killer Monsters (cancer, heart disease, and neurodegenerative diseases)

Huge Growth for Therapeutics Targeting Cancer in Recent Years

- The pharma industry continues to pursue the discovery of medicines for cancer patients with unprecedented rigor
- The cancer-drug pipeline and associated investment has been growing substantially



Share of oncology drugs
in global clinical pipeline

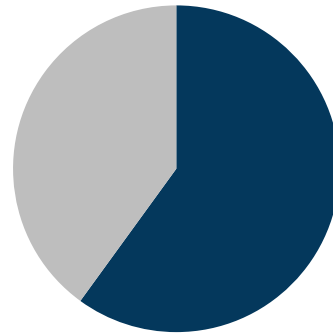
40+%

18%

2010

2020

Source: Deloitte



Source: GenEngNews

6 of top 10

best-selling drugs
worldwide are used
to treat cancers

Economics of Aging Turns Positive

Economics of Aging turns positive (opportunity, not risk) and Longevity becomes a Corporate Thing (Longevity @ Work)

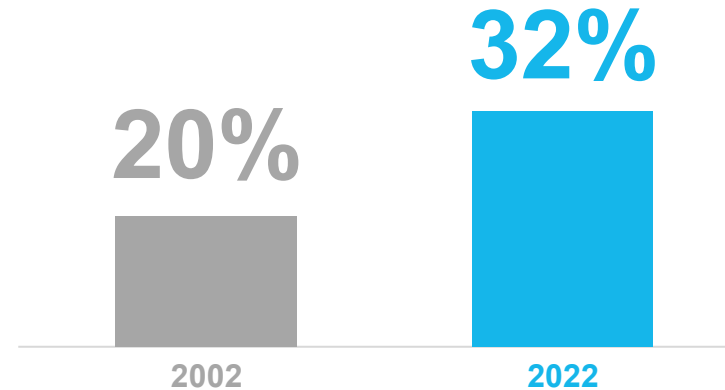
World population aged 60+



60+ population is projected to **double** by 2050 and **triple** by 2100

Source: United Nations, Worldometers

Healthier & more productive longevity



Estimated share of people between the ages of **65** and **74** remaining in the workplace

Source: Fast Company

Augmented Humans

We are on the Verge of New Technologies for Editing and Engineering Humans

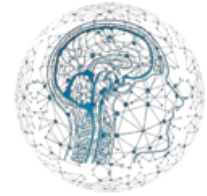
“In the next two decades, people may have the option to change themselves in ways that, up to now, have existed largely in the minds of science fiction writers”

Source: A. Gonfalonieri, The Startup

What is the next stage in human evolution?



Brain-AI Integration



Artificial body parts



Gene Editing



3 Horizons of Longevity Innovation

Horizon 1

SUSTAINING INNOVATION

- Wearable devices
- DIY diagnostics
- Digital healthcare delivery
- Medical software & apps



Horizon 2

DISRUPTIVE INNOVATION

- Gene therapy & editing
- Stem cell treatment
- Nano-robots
- AI-based diagnostics & drug discovery
- Smart hospitals



Horizon 3

TRANSFORMATIVE INNOVATION

- Reverse aging
- Brain-computer integration
- Replaceable body parts
- Avatars
- Internet of bodies



THANK YOU!

Let's connect on

[SERGEYYOUNG.COM](https://sergeyyoung.com)

- ✓ BOOK
- ✓ NEWS
- ✓ MAILING LIST



LONGEVITY
VISION
FUND