

CHANGING the
future for good:
redefining HEALTH
AND WELLBEING



PREFACE

Today's science and technology breakthroughs can provide, as never before, the way forward to improve the health and wellbeing of people, communities, and society. Simultaneously, confusion and pessimism have saturated many narratives, impacting trust and leaving many skeptical governments, institutions and organizations.

There is an urgent need to reimagine and redefine health and wellbeing towards a more human-empowered, knowledge-driven, and technology-enabled approach. While the pandemic has exposed and accelerated the need to change, the problems are long-standing. Part of the widespread worry stems from the inherent weaknesses of society's current approach to health, triggering a reevaluation of its purpose, business models, incentives, and education of the community. Technology is vital to shaping improvements in health, but the focus should be holistic and extend beyond digital.



At NTT, we aim to be useful to the world around us by contributing to society through our business operations. We are continuously looking for new ways to solve some of the world's most significant challenges. The pandemic has accelerated the urgent need to focus on individual health and every aspect of our wellbeing; emotional, social, environmental, physical, occupational, and financial.

Your doctor and local hospital are no longer solely responsible for your health, and your health and safety have increasingly become a personal responsibility. Since the start of the pandemic, employers, schools, restaurants, retailers, urban planners, hotels, airlines and others began influencing our wellbeing in new and different ways. Harnessing this collective action and force in a meaningful and positive way has the potential to be transformative.

Envisioning an expanded and shared health and wellbeing ecosystem, we explore a blueprint and path forward for the future—a road to an integrated and proactive approach that puts people first across all of life's touchpoints. The focus is on prevention, better outcomes, lower cost and more natural experiences in your health and wellbeing. We seek to enable an intuitive ecosystem of knowledge, trust and resources bound by seven human-centric principles and four necessary stages to get us there. Together, working with all of society's stakeholders, we see a brighter future for all of our health and wellbeing.



A VISION of a human-centric approach to HEALTH AND WELLBEING

Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. Reducing the significant amounts of effort and resources to manage conditions relatively easy to prevent should be the goal.

The vision of a human-centric approach to health and wellbeing aligns with the United Nations view that good health is a healthy lifestyle, preventative measures, and modern, efficient healthcare for everyone. Ensuring healthier lives and wellbeing involves, moving away from the status quo, and overcoming the challenges to pave the way forward.

Innovation across health-related disciplines and technologies has the power to transform lives. Behavioral science and quantitative health, combined with wearable technology and digital concierges, will shift the game from curing diseases to predicting and preventing them.



The bio digital twin is brightening the future of medicine, particularly in preventing health and disease.

New generations of human-friendly workplaces will enhance the healthfulness, ergonomics, and resilience of organizations for clients, partners and employees. Bio digital twins will massively reduce the need for real-time experimentation, increase comfort, and improve outcomes. A good starting point is with those suffering from cardiovascular disease.

Research and growth of health and wellbeing disciplines dramatically escalate breakthroughs that promise to improve quality of life.

DISCIPLINE		PROMISE FOR GOOD
1	Behavioral science	How human behavior impacts thoughts, decisions, interactions, and triggers positive influences of health and wellbeing choices.
2	Genomics	Edit and evolve genes to fight viruses, creating more immune systems to solving congenital diseases in-utero.
3	Human augmentation / augmented bodies	Enhance physical capabilities through removable extensions (e.g., wearables, brain-computer interface devices) or lasting transformation technologies (e.g., exoskeletons, artificial implants).
4	Lifestyle medicine	Educate and motivate patients to change personal habits and behaviors to prevent, treat and reverse diseases caused by lifestyle factors such as nutrition, addictions, physical inactivity, or chronic stress.
5	Mindfulness	Cultivate self-perspective, enhance consciousness and identity to bring greater peace mentally and relationally, addressing stress, anxiety, loneliness, or pain.
6	Nanomedicine	Clinical devices (e.g., diagnostic devices, sensors, contrast agents, drug delivery vehicles) are on the scale of nanometers (i.e., billionths of a meter) and small enough to be non-intrusive inside the human body.
7	Neuroscience	Understand the brain and its impact on behavior and cognitive functions for curing diseases related to the mind and central nervous system.
8	Precision or personalized medicine	Customize healthcare with treatments, practices, or products tailored to subgroups of patients (e.g., based on their genetic content), or even individual patients, instead of the current one-drug/treatment-fits-all model.
9	Preventive medicine	They are addressing diseases or disabilities by preventing their occurrence and averting complications after their onset.
10	Regenerative medicine	Heal or replace tissues and organs damaged by age, disease, or trauma, growing them synthetically when the body cannot do it by itself and implanting them.

Table 1. Ten examples of health and wellbeing disciplines that will positively transform how we live.

OVERCOMING the challenges of the current STATUS QUO

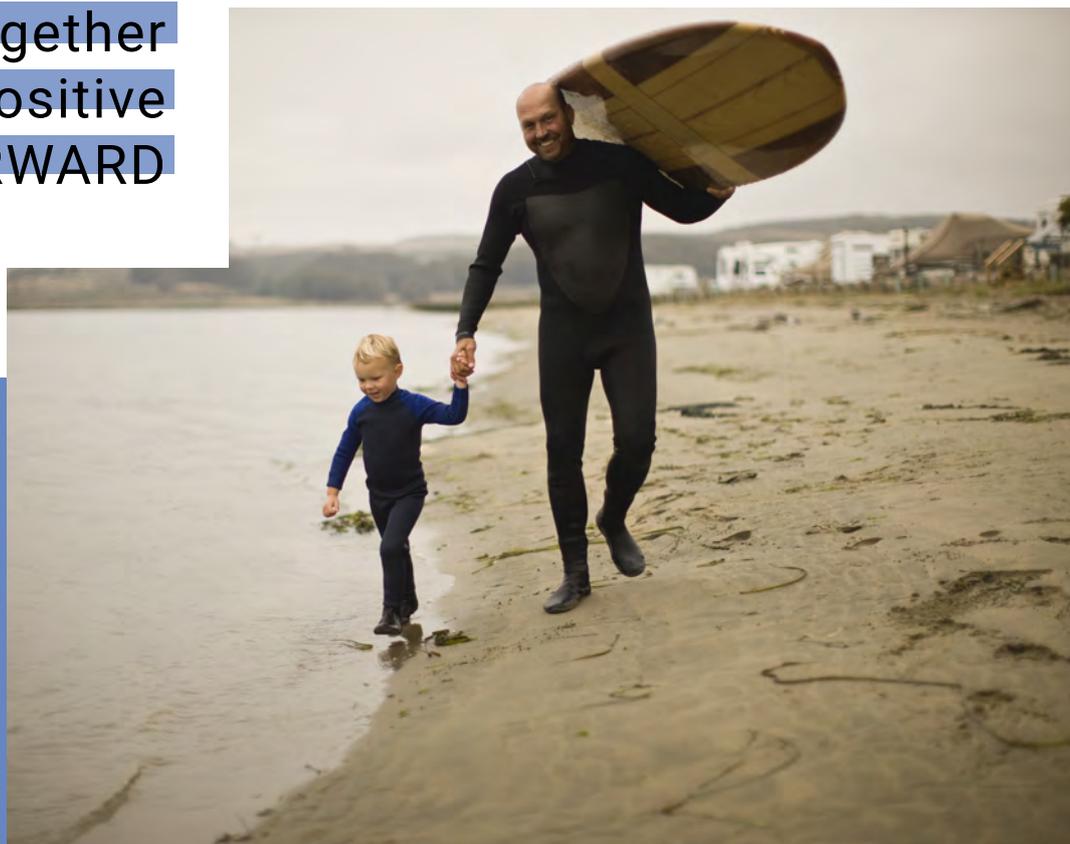
Instead of the message of hope and trust that should come from a fact-based assessment of health and wellbeing breakthroughs, there is much denial of science, pessimism and confusion. The current state of health and wellbeing involves factors distorting perspectives and causing a kind of social paralysis. These include:

- Information overload with a lack of trustworthy, accessible, and ready-to-use knowledge.
- The polarization and politicization of the health agenda increase divisiveness.
- We were designing our health services models around treating illness rather than preserving health.
- Multiple disaggregated systems cannot talk to each other or provide access to consistent and timely data.
- Lack of inclusivity across age, demographics, gender, and special needs.
- Concerns are increasing with technology, including data privacy, surveillance capitalism, tech addiction, biased algorithms and accelerating new digital divides.
- An aging society, rising mental and physical health challenges, growing social isolation, loneliness and mental illness.



Right now, our health is in someone else's hands. The only way out of the problem is if the system looks beyond the disease and towards prevention.

WORKING together to take positive STEPS FORWARD



Undermining people's trust in the health system negatively affects the relationship between the individual (demand-side) and the providers and caregivers (supply-side). Virally spread social perceptions, states of mind and misconceptions make the situation overly complex to solve as it implies changing what and how people think and feel. We face a systemic issue that is calling into question purpose, business models, incentives and communities.

The dysfunctions span the whole system, and technology plays a crucial role, both as the problem and the solution. Computer science and technology is the most potent engine of recent social and historical transformation and growth. Today, life sciences are working together with technology to create new possibilities across health and wellbeing. However, society's pockets are wary of what more digital means for them, especially around intrusion into their physical and mental states.

Living through a pandemic has shown us the importance of being human. What we say and how we say it matters. Leaders worldwide are shifting their focus beyond the bottom line, increasing focus on combining broader societal impact with financial performance. Ethically, we are more aware, purpose-led. Transparency is respected. Speaking up for the greater good is valued. We are collectively at a crossroads moment to make a meaningful shift for the better and accelerate the changes we want to see.

LEADING THE WAY to a better life of HEALTH AND WELLBEING

NTT believes in resolving social issues through our business operations by applying technology for good. We help clients accelerate growth and innovate for current and new business models.

Our services include digital business consulting, technology and managed services for cybersecurity, applications, workplace, cloud, data center and networks – all supported by our deep industry expertise and innovation.

As a top 5 global technology and business solutions provider, our diverse teams operate in 80+ countries and regions and deliver services to over 190 of them. We serve over 80% of Fortune Global 100 companies and thousands of other clients and communities around the world.

<https://www.global.ntt/healthandwellbeing/index.html>

