

Make what life needs next in 2023 and not what it doesn't

At Board of Innovation, we make what life needs next. We imagine the products, services and new businesses that consumers need tomorrow and create them today.



Our world is struggling with bigger problems than ever before.

Life expectancy in the United States has been going down since 2014. Throughout history, declining life expectancy has been a leading indicator of economic and political collapse.

Other countries, including China, have plummeting birth rates that may cause economic and social problems. Many communities face public health crises, including as a result of addictive drugs, air pollution, diabetes and COVID. Meanwhile, rising sea levels, record dew point temperatures and extreme weather may soon make many places nearly uninhabitable, leading to unprecedented numbers of refugees. Biodiversity loss and the collapse of fisheries may threaten much of the global food supply. The current war in Europe could also have a devastating impact on global food supply chains. There's political and social polarization almost everywhere, accompanied by a crisis of trust across all institutions (not just the media). We're also facing social inequality and extremism, supply chain disruption, labor shortages, real estate contraction and a looming global economic recession.

War Crisis of trust Global food supply Declining life expectancy Plummeting birth rates Public health crisis Climate change Polarization Social inequality Labor shortage Recession That's an awful lot, but we're not stuck on doom and gloom. We truly believe that from crisis comes opportunity. We hear these big challenges as rallying cries for better, bolder, braver innovations. Of course no single innovation or innovator will be enough, but we believe that the power of human ingenuity, manifested through countless teams working for companies and other organizations around the world, can get the jobs done.

We need to tap the power of human ingenuity to create bigger, bolder innovations

We are determined to do our part where we can to address life's biggest problems and to help with solutions that make life better now and going forward. So we are working to help enable better health outcomes for everyone (including for mental and reproductive health), and to help our partners to create high-quality consumer products (including food and other staples) that are both widely affordable and truly sustainable.

Gaining insights about the future requires more than just knowing what consumers or other companies want right now. The hardest part of making what life needs next is figuring out what is going to be needed. Great strategy is about making mindful choices: what you choose to do is important, and what you choose not to do can be even more important.





What life doesn't need next

Before we share some of our thoughts about how to innovate what life needs next, let's take a quick look at some of the worst innovations of 2022. Some of them are bad in the most basic ways, such as: the covid tests that didn't work, or the dryer sheets that made nightclothes ignite. There are other bad examples that can be more instructive in helping us to set guard rails for useful innovation in 2023:



Environment harming products

Let's not make products that harm the global or local environment (such as Ferrari's gasoline-powered SUV sports car, or endless new single-use consumables) or that make it harder for companies to act responsibly (such as funds that hedge against ESG investments).

Pharma bros

Let's not turn a life-saving drug into a profit machine at the cost of saving those lives. You don't want to be <u>another pharma bro</u>.





Products based on a lie

Let's not make products that are based on a lie – or spread misinformation. For instance, as our population ages globally, more and more consumers fall prey to <u>bogus claims</u> from consumer products that promise relief from serious illnesses. Bad examples from 2022 include <u>alkaline water filters that offer resistance to cancer</u> and <u>over-</u> <u>the-counter supplements for Alzheimer's</u>.

Unsustainable products

Let's not make products that are overengineered, over packaged or inefficiently manufactured or shipped (thank god for <u>frustration free packaging</u>.)





Trends without traction

Let's not make gadgets that might seem cool from an Engineering standpoint, or might make you laugh for a moment, but are unlikely to make a meaningful or lasting difference in the quality of anyone's life. (For example, consider the Smart Water Bottle with "Tap to Track" technology or the KODAK Inflatable Outdoor Projector Screen or almost any of the other stuff from 2022 <u>here</u>.)

Ignoring blindspots

Let's avoid developing products that replicate prior failures (the <u>Groundhog Day</u> special) – or that make the opposite mistake of <u>being the result of too much time spent looking in</u> <u>the rear-view mirror</u>. For instance, any company seeking to sell consumer products in big urban centers would do well to learn from the particulars of Carrefour's recent failures in <u>Singapore</u> and <u>China</u> – which in part were the result of failing to keep pace with the rapidly-evolving dynamics of retail vs. online purchasing (and complementarity between the two).



Principles for making what life needs next in 2023

Instead, let's think about what will help our fellow humans, what will alleviate the stress, prevent the problems and satiate our real needs and desires.

Let's put down the avocado knife and hit the white board.

Here are some ways to start:

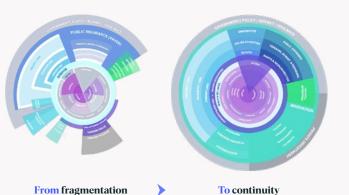


Build for adaptability

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Recalibrate the human experience

Think system-wide, not user-first





As our lives and communities get ever more interconnected, let's zoom out and map the ecosystem – the stakeholders and the exchange of value. Once we do that we can create our own business cases and understand the right partners we need to deliver incremental value..

While the innovation community has enthusiastically embraced a consumer-first mindset, now even <u>IDEO</u>, the inventors of human-centered design, are talking about an interconnected, sustainable, equitable future.

We are currently working with Roche as part of an ambitious public private collaboration called Movement Health, which seeks to partner startups with public health providers across South America to improve patient outcomes. The main idea is to move away from delivering fragmented or siloed services to provide greater continuity of care (for instance for diabetes patients). The pilots in Colombia are very promising!

Another good example is <u>The Power for All Alliance</u> founded by Bosch and Gardena that now includes many manufactures worldwide. Standardizing the 18v battery pack for home and gardening appliances means that consumers need fewer batteries and manufacturers can sell their appliances at a more competitive price.

Build for adaptability

Experience

The pace of change for so many aspects of human life continues to accelerate, and many of these changes will be unexpected. As the future remains uncertain, we partner with organizations to help them understand the changing needs of their consumers and develop new use cases for their products. Once we do this, we can apply agile methods to business modeling – so that they can continuously evaluate their strategies and adjust them quickly.

For example, our client Loop makes earplugs – really good ones! They focused on selling to people who attended loud music festivals, a relatively small market. When the pandemic sent those existing consumers home, they quickly pivoted to much larger audiences, providing noise-canceling for work-at-home parents and for everyone in need of an uninterrupted night's sleep. (Their products, which never need to be plugged in or recharged, are a lovely example that you don't always need to consume energy to solve a problem – they use passive noise canceling in order to reduce the volume.) Now the Loop leadership team evaluates their strategy every three months so they can remain responsive to the changing needs of their customers. They're growing fast.

It's like volume control for motherhood.

TikTok @mommacusses

5 Recalibrate the human experience





During the pandemic, much of life migrated from in-person and human to virtual and algorithmic. Now one of the big challenges is to find the right combination of all four of those. In order to do this well, you have to understand the context and lead with empathy. One success story we are seeing is contactless ordering in restaurants; typically, it has put the customer in control of the ordering process, reducing wait time and increasing order accuracy. It's also more sustainable while allowing the restaurant to change the menu more easily.

We love organizations that are innovative in optimizing the simultaneous deployment of people,, place and technology, and that understand that experiences are often a key part of the value proposition for patients as well as consumers. For instance, Boots, the UK health and beauty retailer and pharmacy chain, is piloting more robust models of 'phygital' to keep physical stores essential to the lives of customers – as destinations where people go to get health and beauty advice and can have other face-to-face human interactions – while also providing the conveniences that digital natives now expect, including 'click and collect' and rapid delivery. Meanwhile, in Singapore, Malaysia and Australia, Homage is using smart technologies to help curate and manage personal care for seniors – including on-demand holistic home and community-based care – thereby allowing their clients to recover and age with grace, control and dignity.

Let's solve big problems

Take control of your own health



Improving health at scale requires more than just laboratory and engineering innovations; it also requires finding new ways to convince people across the world to embrace the solutions. That's why, in 2022, there were setbacks in preventing the spread of infectious diseases, from polio to COVID, with measles starting to surge again as well. It's also why far too many people still suffer in silence from stigmatized health conditions such as incontinence.

We're proud of having helped to rapidly develop a vaccine experience for dengue that would attract patients and scale rapidly across geographies. (Almost half of the world's population, about 4 billion people, live in places with a risk for dengue, and each year about 100 million get sick from it.) We're now looking for partners to help develop more of these massive scale solutions that can prevent literally billions of people from getting sick.

We're also proud to be working with leading personal care providers and a leading med tech company to help people who suffer in secret from stigmatized health needs ranging from <u>anal care</u> to <u>bladder leakage/</u> <u>incontinence/living with ostomy</u>. By bringing these needs out in the open, and giving these consumers hope that they can lead normal lives, we can dramatically increase the number of people who seek, find and get the right care. And for people who want to prevent getting sick, and take more control of their health, there are more home test solutions for concerns ranging from the <u>vaginal microbiome</u> and <u>fertility</u> to <u>sleep apnea</u>



Make food cheaper and more sustainable

Three billion people around the world still don't have access to affordable nutritious food. The situation grew worse in 2022 with pandemic-related supply chain disruptions, extremely hot weather <u>that reduced crop and</u> <u>poultry yields</u>, and a war between two countries that had provided a quarter of the world's wheat. And as some agricultural resources grow more scarce as a result of our changing climate and lost biodiversity, there is growing attention to the carbon footprint of food supply chains.



We're working to help address these needs on three fronts:

Growing our food in a lab

Plant-based meat and dairy products are a key part of a flourishing movement that aims to provide more sustainable food sources – reducing our food footprint on the environment. From culinary trendsetter's 11 Madison Park's vegan menu to the Impossible Burger at Burger King and soy lattes at Starbucks, we're seeing more and more plant foods garner share of stomach – mostly by appealing less to the hard core vegans and appealing more to younger generations who use this as part of their dietary regime. The alternative meat and dairy markets are projected to be worth \$200 billion by 2029. In terms of both sustainability and affordability, the most important innovations here will most likely come from precision fermentation – literally food or food ingredients that can be grown in a lab. For instance, <u>Perfect Day</u> in the US, Remilk in Israel, and the UK's Better Dairy are all culturing dairy products from whey and casein. <u>PrimeRoots</u>, <u>Atlast</u> and <u>Quorn</u> are producing meat substitutes from fungi proteins. In the EU, Necton and <u>Allmicroalgae</u> are producing food ingredients from microalgaes in ways that are both scalable and sustainable. <u>Joywell</u> and <u>Cargill/DSM</u> are using fermentation to produce sustainable, zero-calorie sweeteners. These industries are moving super fast now from a technology standpoint, but face challenges on both distribution and consumer acceptance.



Waste not, want not

As so many of our resources become more scarce, there are more opportunities to reuse the waste streams of what we produce. We've done this in the industrial context for decades. (For instance, Board of Innovation ran a project with <u>Toyota Vaanderlande</u> to remanufacture defective products for industrial reuse.) Now, especially as high inflation rates impact consumer behaviors, recommerce and other circular loops are <u>gaining ground</u>. (According to <u>one survey</u>, Americans now spend an average of 27 minutes per day on recommerce platforms!) Clothing companies such as <u>Patagonia</u> are making it easier to repair, share and recycle, while <u>Style Theory</u>, a Singaporean fashion platform, enables consumers to rent or buy pre-owned designer items from the company or from each other.

In 2023 we see the waste-not trend turning to food. Food waste, when it rots in a landfill, produces methane gas, and accounts for 8% to 10% of global greenhouse gas emissions. Last year, China's President, Xi Jinping, began a "clean plate" campaign, calling for an end to the "shocking and distressing" squandering of \$30B of food every year. California is requiring each of its cities and counties to reduce the organic waste that goes into landfills by 75% by 2025. In South Korea, the government has rolled out trash bins equipped with radio-frequency identification sensors that weigh exactly how much food waste each household tosses each month.

<u>Unilever</u> and many others are finding innovative ways to apply the "Reduce, Reuse, Recycle, Recover" approach to food production. Other companies are finding innovative ways to turn food waste – from <u>brewer's grains to soy</u> <u>fibers</u>



to <u>watermelon juice</u> – into attractive consumer products. A Kenyan entrepreneur has built solar-powered refrigerators to help farmers store produce longer. Here, too, the toughest challenges are often less about technology than they are about distribution and securing consumer acceptance.

Create supply chains that reward everyone

One of the greatest challenges for global agriculture is to ensure that all producers can share in the benefits, even poor farmers in remote rural places. Currently, 525 million smallholder farmers grow 70% of the world's food, yet they're among the poorest people on earth. It's in everyone's interests for them to do better, not just for ethical reasons, but also because global food production, threatened by climate change and so many other forces, must get more resilient, and we will all benefit if more of these farmers can reap the rewards that can come from sustainable methods.

We have been impressed by the holistic approach taken by <u>Jiva</u> to tackle this problem. Backed by agri-business powerhouse <u>Olam Group</u>, Jiva is putting powerful e-finance and e-commerce tools directly into the hands of farmers (first across Indonesia, and soon in India). Their platform also leverages climate data, remote sensing, computer vision and other technologies to design and deliver personalized advice to farmers right when they need it. It's a hybrid, rather than tech-only or remote-only approach – Jiva's business model preserves key face-to-face interactions, thereby accelerating adoption, increasing feedback and building trust.

These are some of the trends and approaches that excite us going into 2023. We'd love to discuss them with you, and learn more about what you're hopeful about as well. Let's partner together in the year ahead to continue to create these better, bolder, braver innovations. Let's use the power of human ingenuity to get the jobs done. Working together, we believe we can all make what life needs next. #makeswhatlifeneedsnext

Let's make it happen.

Authors



Tiffany Vasilchik

tiffany.vasilchik@boardofinnovation.com



William de Vos Managing Director APAC william.devos@boardofinnovation.com



Arne Van Balen Managing Director EMEA arne@boardofinnovation.com

Bryan Berger Business Director



We'd love to hear from you

Aidan Lethem Content Strategist aidan.lethem@boardofinnovation.com

