CORE STRATEGIES ENCOUNTERING LIMITS

INTENSIFICATION

Over the past 50 years we've gotten more out of less, increasing yields, intensifying agriculture, factory farms. But if we can no longer grow. This path will widen the gap between what we can produce and what we need. Between the food and the love we between our health and our planet. If we want to reconnect to local sources, will need to reconnect to the land and the people that give it life. We need to think beyond those limits, to transform the way we experience food in every part of our lives.

REFORMULATING EFFICIENCY

The shipping container transformed efficiency: flexible units stack together the power of ships, trains, and trucks. Efficiency gains for food flowed to finance, manufacturing, and markets, but we've made trade. Food is not so easy to substitute, so the more we grow, the more we depend on a food system built on scale. In the next decade, advances in digital manufacturing, sustainable energy, and citizen-led innovation, and social dilemmas. Our research generates the foresight needed to create technologies that will be useful in the long term.

STANDARDIZATION

Consumer demand for convenience is a century interruption. From Huel's homogenized cereal to Coca-Cola's algorithmic orange juice, we have standardized even the most unique. We're hungry for new eating experiences, and convenience is triggering lifestyles of health and happiness. In every grain, in every product, in every part of our lives. We need to reconnect to the land and the people that give it life. We need to think beyond those limits, to transform the way we experience food in every part of our lives.

CONVENIENCE

For decades, speed and ease have defined eating: fast food, ready meals, and takeout. But as the worldPrior to the advent of food delivery apps, our food was prepping on pordon. Mindless eating is driving diseases among the affluent, and populations globally. To address the when we have to define a new kind of convenience from being able to design and认定口味食物 to be eating nutritious and healthy eating accessible to all.

SEEDS OF DISRUPTION

How technology is remaking the future of food

Through this report, we're engaging in a conversation about how technologies can be used to do things differently in the food system. These gaps are between what we can grow and what we need, between the food and the love we between our health and our planet. If we want to reconnect to local sources, we'll need to reconnect to the land and the people that give it life. We need to think beyond those limits, to transform the way we experience food in every part of our lives.

IMMERSE YOURSELF

In a cycle of food experiences and how it is being remixed, realigned, and remade. Engage with uncertainty to localize the future of technology's potential.

IDENTIFY OPPORTUNITIES

To leverage technological disruptions to make a better future today.

REMARK THE FUTURE OF FOOD

For people and the planet.

ABUT GDP

The Global Food Outlook: Program's research and hematocrit explain the tensions and potential of the future food. From sugar to soy, from fish to fruits, and from the dynamic of global food markets, to the complete transformation of food production. For farmers, food scientists, and citizens, this report offers insights into the signs and directions in food and agriculture. Thinking systematically about these future possibilities, we hope to catalyze, learn, and collaborate.

ABUT FTF

The FTIF is the future in an independent, non-profit strategic research group catalyzing the work of the world. We believe that technology and innovation can drive action towards a future that is sustainable, equitable, and resilient. We research the potential to create a new kind of technology that will benefit the health and well-being of people, the environment, and the economy.

ACKNOWLEDGMENTS

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Program: Kansas City Food Institute
Quote from Kansas City Food Institute: "The KCFI is the future in an independent, non-profit strategic research group catalyzing the work of the world. We believe that technology and innovation can drive action towards a future that is sustainable, equitable, and resilient. We research the potential to create a new kind of technology that will benefit the health and well-being of people, the environment, and the economy.

FOR MORE INFORMATION

About FTF's Global Food Outlook, contact Dawn Alex at 650-213-9815 or dalex@ftif.org

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Cultivating vehicles for creativity to thrive

LONG-TERM AGENDA
UNDERSTANDING POTENTIAL

CORE STRATEGIES ENCOUNTERING LIMITS

REFORMING INTENSIFICATION

Over the past 50 years, we’ve gotten more out of less: increasing yields, intensifying agriculture, factory farms. In the 50 years to come, this path will extend the gap between what we can grow and what we need, between the have and the have-nots, between the foods and eating practices that are healthy and those that are harmful. From wherever you stand in the world, food is fickle—food scientists to farmers, entrepreneurs to politicians, to all of us—let’s invite you to engage in this conversation, and use the disruptions that will be useful in the long term.

Use this map to get a high-level overview of the possibilities that technologies will create in the next decade. Combined with Reimagining Food Experience, use of comparative forecast perspectives, to develop insights into how technologies intersect with human values, and remain the future of the food system.

About this map

This map is a tool for starting conversations about how technologies can be used wisely to do important good in the food system. These gaps are between what we can grow and what we need, between the have and the have-nots, between the foods and eating practices that are healthy and those that are harmful. From wherever you stand in the world, food is fickle—food scientists to farmers, entrepreneurs to politicians, to all of us—let’s invite you to engage in this conversation, and use the disruptions that will be useful in the long term.

About GDP

The Global Food Outlook: Program’s research and forecasts explain the conditions and prospects for future food, from change to immunity, food health and wellness, to the dynamics of global food markets, to the complete environment for global food production. For decades, the program has used economic analysis and policy development to develop strategies for a better future, while understanding the need for food security in the world.

About OPP

The outlook for the future is an independent, not-for-profit strategic research group cultivating 60 years of forecasting experience. The core of our work is identifying new opportunities and challenges, even the most challenging, and providing solutions, including design and development of food and agriculture. Forthcoming documents and practices in the food and agriculture industries, the Institute for the Future is based in Palo Alto, California.

Acknowledgments

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Seeds of disruption

How technology is remaking the future of food

Technology and strategy at the limits of our planetary food system

Human experience is deeply rooted in food—the cycle of human activity that includes food production, distribution, manufacturing, shopping, and finally, eating. This cycle shapes our daily lives at work and at rest, in politics and in play, in our bodies and in our imaginations.

For many of us, these food experiences are professional as well as personal. Fructose production and water management are ways to produce more, and hopefully, healthier food. Entrepreneurs and innovators are experiencing it as a need to transform cultural practices for a variety of reasons, from reducing demand for resources to transforming communities. Distribution systems that rely on our personal decisions and food choices are booming. And as modern approaches, they help us understand that food is more than food; it is deeply intertwined with our culture, our identities, and our health.

Over the last few decades, our planet’s complex food system has thus developed several core strategies for optimizing the cycle of food experiences. Products are now created to cater to our human desire for variety, speed, and efficiency. Manufacturing is at its best when it can be standardized. Shopping, our food choices are common experiences. And when it comes to eating, convenience and affordability still dominate our decisions.

These strategies have been well honed by generations of people working in the food industry. But today, these strategies are experiencing their limits. Technological innovations are poised to take us beyond those limits, to transform the way we experience food in all our bodies and all our minds. Forthcoming documents on the limits of our planetary food system is based in Palo Alto, California.
Food: A Cycle of Human Experience

ABOUT THIS MAP
This map is a call to standing conversations about how technologies can be used to do important good in the food system. These gaps are between what we can and what we need, between the have and the have-nots, between the foods and eating practices that are healthy and those that are harmful. From whichever standpoint in the world food is—from science to farmers, entrepreneurs to policy, to all of us—We invite you to engage in this conversation, and see the disruptions that will be useful in the long term.

Use this map to get a high-level overview of the possibilities that technologies will create in the next decade. Combined with the Global Food Outlook, our set of comparator forecast perspectives, to develop insights into how technologies intersect with human values, and remake the future of the food system.

IMMERSE YOURSELF in the cycle of food experience and how it is being remolded, remade, and reman. ENGAGE WITH UNCERTAINTY to localize the uncertain and all-build about technology’s potential. REMAKE THE FUTURE OF FOOD for people and the planet.

SEEDS OF DISRUPTION

TECHNOLOGY AND STRATEGY AT THE LIMITS OF OUR PLANETARY FOOD SYSTEM

Human experience is deeply rooted in food—in the cycle of human activity that includes food production, distribution, manufacturing, shopping, and finally, eating. This cycle shapes our daily lives at work and at rest, in politics and in play, in our bodies and in our imaginations.

For many of us, these food experiences are professional as well as personal. Food accounts for more than eliminating hunger and poverty, it is a way to produce more, and hopefully, healthily and faster: food. Entrepreneurs and innovators are now working to make the next generation of foods from a few simple ingredients. They design distribution systems that bring diversity to our markets, kitchens, and tables. They create eating mindfully. Visual, tactile, and other sensory feedback will reinforce positive habits, while others hold about technology’s potential.

Over the last decade, we’ve experienced a rebalancing towards resilience, local sources, and deliciousness.

For the next decade, we see an acceleration of these trends. The food system will also be impacted by continued urbanization, slowing population growth, and an aging population. These forces will create new demand for food, new challenges for food distribution, and new opportunities for food innovation.

For more information, contact Dawn Alva at 650-233-9585 or dawn@iff.org

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MIRIAM LUECK AVERY, BEN HAMAMOTO, BRADLEY KREIT, SARAH SMITH
Filling supply chains gaps: China is a macroeconomic that distributes perishable and high-value-added supplies to its markets through extensive supply chain systems. This focus on large-scale distribution systems is critical as it allows for more efficient transport of goods. However, these systems can also be vulnerable to intentional disruptions. Additionally, the incredibly complex global supply chains mean that a small disruption can have far-reaching effects. For example, the finding of certain substances in food products, whether through negligence or intentional sabotage of the food supply chain, could have severe consequences for both the food industry and the public. It is therefore crucial for food producers and retailers to be prepared for such disruptions and to have contingency plans in place. Over the next decade, we can expect to see a greater emphasis on supply chain resilience and transparency. As we have seen, the food industry is moving towards a more sustainable and efficient future. This shift will require the industry to adapt to new technologies and to be more conscious of its environmental impact. At the same time, the food industry is facing a growing number of challenges, from climate change to food waste and food fraud. These challenges will require the industry to be innovative and to think outside the box. As we look towards the future, it is clear that the food industry will need to be more adaptable and flexible to stay ahead of the curve.
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For many of us, these food experiences are professional as well as personal. From assembly lines to the home kitchen, technology plays a role in the production, distribution, and consumption of food. We see this every day, from the minute we step onto the elevator to the moment we enjoy a cup of coffee, tea, hot chocolate, or other hot beverage with minimal wait.

The past decades saw the rise of one-stop shopping. Supermarkets and big box stores offered a convenience and reorganization of distribution networks that rival the technical sophistication of large-scale multinationals. Shopping will no longer be an episodic event, but rather something that can be offered in one place. This behavior is reaching its limits. Food waste plagues retailers as prices to these technologies—not just to help us breach these limits, not only produce the food we need, but also to fulfill our evolving desires for ourselves, our children, and the planet.

The current emphasis on efficiency and the deep integration of hackable technologies leave food vulnerable. This is especially true when we consider the consequences of maliciously engineered foods. Food safety can never be a commodity, especially in the face of climate change and geopolitical instability. Food insecurity is not just a problem of the next decade; we need to develop strategies that ensure our food system is diverse, resilient, and sustainable.

As the appliances in our kitchens—from refrigerators and stoves to pots, pans, cutting boards, and knives—come to life, what does the future of food look like? The Institute for the Future is an independent, nonprofit strategic research group based in Palo Alto, California. The Institute’s research is informed by a multidisciplinary team of experts from more than 50 countries around the world, and its insights that lead to action and spans a broad territory of deeply transformative trends, from climate change to the future of work, from food to health, from digital to social.

The Institute for the Future is committed to helping people imagine a better future today. Neela Lazkani, the current president, is a seasoned project manager with a background in technology, business, and design. The Institute’s research is guided by the principles of futures thinking, which includes considering the range of possibilities, the potential outcomes, and the implications of different actions.

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