

FUTUREFOOD.NETWORK

IMPROVING THE WORLD THROUGH FOOD

MAY, 2020



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INSTITUTE



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FUTURE
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LIVING LAB

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- 
- 1 ABOUT**
 - 2 CRUCIAL THEMES IN INNOVATION**
 - 3 COVID: WHAT'S CHANGING**
 - 4 COVID: WHERE TO BET**
 - 5 OPPORTUNITIES FOR SPICES**



1 ABOUT



1.1 About me

1.2 About us

CHIARA CECCHINI

CEO/Co-Founder at Future Food Americas

I am in..

San Francisco, CA

What's keeping me busy

- Forbes 30U30 Social Entrepreneur •
- Global Shaper at World Economic Forum •
- Alumna & Researcher at BCFN •
- Beekeeper • Writer • Runner •



1.1 ABOUT ME





SUSTAINABLE DEVELOPMENT GOALS



1.2 ABOUT US



**FUTURE FOOD IS AN INCLUSIVE NETWORK
AND INSPIRATIONAL PLATFORM
THAT IS SPARKING EXPONENTIAL POSITIVE CHANGE
IN THE GLOBAL FOOD SYSTEM IN AN
ENTREPRENEURIAL WAY.**



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FUTURE
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ACADEMY

#People development



FUTURE
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LIVING LAB

#Community development



FUTURE
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INSTITUTE
INITIATIVES

#Cooperative effort for good



FUTURE
FOOD
ACCELERATOR

#Purpose-driven Research, Innovation & Development

1.2 ABOUT US



THE 5 DISRUPTION DRIVERS

Health

Demand for fresh and unprocessed food, food insecurity among rural communities, obesity and malnutrition worldwide epidemic.

Consumers Values Shift

Towards health, transparency and authenticity. Shifting trust from multinationals to small brands and to social responsibility

Digitalization

The less digitised industry. In an era where technologies are transforming entire businesses and re-shaping growth, productivity and overall performance.

Sustainability

Water and land scarcity, climate migration, decreasing biodiversity, food waste.

Distribution

New direct to consumers channels. Ecommerce. Amazon revolution.

We believe that innovation is a cooperative effort. Therefore we work with global communities and international organizations to catalyse this transition towards the sustainable development framework.



Food and Agriculture
Organization of the
United Nations

Food and Agriculture Organization of the United Nations [FAO]

3 Year Joint Program Accelerating Educational
Platforms/ Knowledge Partnership



*Partnership for Research and Innovation in the
Mediterranean Area [PRIMA] Foundation*

3 Year Knowledge Partnership



National Institute for Functional Food

3 Year Knowledge Partnership, Scientific validation for
Future Food Publications



Wageningen University - The Netherlands

3 Year Knowledge Partnership, Scientific validation for
Future Food Publications



ITPO ITALY

*United Nations Industrial Development Organization- Investment
and Technology Promotion Offices [UNIDO - Itpo] Italy*

3 Year Joint Program + Co-organizing Unido Award



*Dipartimento di Scienze Bio Agroalimentari Consiglio
Nazionale delle Ricerche [DISBA CNR]*

3 Year Knowledge Partnership, Scientific validation for
Future Food Publications



Google Food

Main private partner for Future Food Bootcamps
(Future Food for Climate Change)



World Cocoa
Foundation

World Cocoa Foundation

Sponsorship agreement for Chocoton



International
Trade
Centre

International Trade Centre

Sponsorship agreement for Chocoton



THE WORLD BANK

The World Bank

Sponsorship agreement for Chocoton



Conseil Européen pour la Recherche Nucléaire CERN

Partnership for Challenge Based Innovation program

1.2 ABOUT US



We strongly value the importance of education as a way to make a high impact in young professionals' lives. We collaborated with an extended number of Universities around the world to make this difference happen. These are some of the Universities that participated in our Food Innovation Global Mission, Food Innovation Program, Chocothon and the SUGAR Network Innovation Program.



1.2 ABOUT US

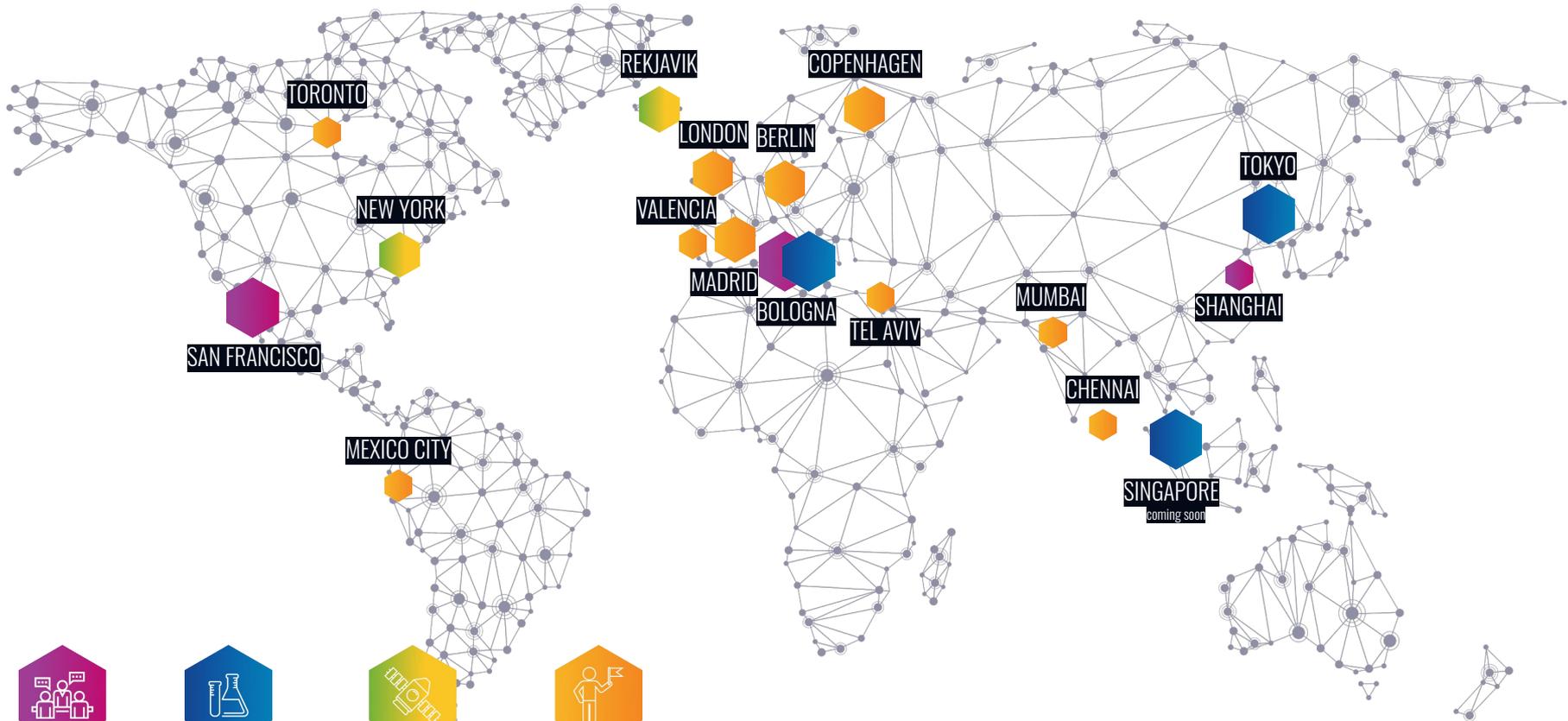


Throughout these past years we have been supporting many leaders in the fast-moving consumer goods space, helping them in speeding up their full Innovation process from consumers' needs to the market. Our work is entirely based on the Design Thinking methodology, being one of our co-founders, Matteo Vignoli, a Stanford D.School Scholar, and an IDEO awarded professional. Our main value proposition is to build radically user-centered solutions, which are quickly prototyped and frequently iterated.



1.2 ABOUT US





MAIN OFFICES

Where we have a dedicated team actively working with clients



LIVING LAB

Where we have a physical community spaces



HUBS

Are like satellites where we have partnerships with local companies doing innovation

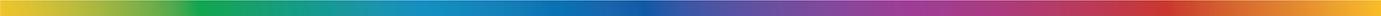


AMBASSADORS

Are individual professionals, our alumni and professors who we collaborate with on project-basis

1.2 ABOUT US





2 CRUCIAL THEMES



2.1 Future of Proteins

2.2 Urban Food Production

2.3 Food Loss and Waste

2.4 Transparency and Traceability

2.5 Novel Food Production

2.1 | Future of Proteins

- Meat & Dairy industry is among the top 5 biggest emitters of greenhouse gases - CO₂, Methane, Nitrous oxide
- Per capita meat consumption expected to rise dramatically by 2022 (especially in Brazil, South Africa, Russia, China, India)
- Over 30% of the world's fish stocks are overexploited.



2 CRUCIAL THEMES



<https://www.shopetee.com/blogs/plastic-pollution/what-are-the-most-polluting-industries-the-answer-is-complicated>

In vitro meat

Pioneer of cultured meat, Professor Mark Post, discovered that cell culturing, an existing medical technology, could be applied in the food industry to create animal meat products. The application of this technology in animal tissue production can reduce environmental impact and ethical concerns of meat production dramatically.



Plant-based mimics

The Impossible Foods' mission is clear; they want to preserve the culture that goes with cooking meat but firmly states that the way livestock is produced today is prehistoric and destructive. They are “on a mission, and Mars isn't it” and they are creating plant-based meat products to save the planet and the people that live on it from moving to Mars.



Insect & Microbial protein

There are more than 2,000 insect species that are known to be edible. Their nutrient composition and digestibility vary greatly and stages of development should also be taken into consideration. The protein content in insects can range from 15-81 %, depending on insect source and stage of development.

Microbial substitutes are novel as they not only try to mimic animal meat products, they also provide some of these nutrients in new forms, such as duckweed and spirulina. Spirulina is a microbial source of protein that is formed by cyanobacteria and can be consumed by humans and other animals



2.2 | Urban Food production

- Global population increase
- Pressure on arable land to increase productivity
- Loss of Arable land due to degradation, climate change, soil constraints, urban encroachment and unequal land distribution
- Total arable land per person in
 - 1965 - .39 acres
 - 1985 - .29 acres
 - 2005 - .22 acres



2 CRUCIAL THEMES

<https://blog.agrivi.com/post/loss-of-arable-land-threaten-world-food-supplies>



Aerofarms Aeroponic indoor farms

AeroFarms, located in Newark New Jersey, is the commercial leader in indoor farming. They grow without sun or soil in a fully-controlled indoor environment. They have optimized their patented aeroponic growing system for faster harvest cycles, predictable results, superior food safety and less environmental impact. The system uses 95% less water than field farming and 40% less than hydroponics.



Urban beekeeping

Beeing

Beeing products are designed to protect bees and make urban and professional beekeepers' work much easier: big data, sensors, smart beehives, alarms



2.3 | Food Loss & Waste

One-third of all food is lost or wasted (FAO 2011)

- Economic, Env & Social Costs (FAO 2014)
 - \$1,055B/yr economic losses
 - \$696B/yr environmental costs
 - \$882B/yr social costs
- Cropland equivalent to the size of China
- 8% of global GHGs
- SDG 12.3 to reduce FLW by 50% by 2030



2 CRUCIAL THEMES



Barley Vita

Barley Vita is a project that rescues the nutritious grain created every time that beer is brewed, and upcycles it into flour.



Instock

Instock is the first restaurant in the world working with rescued food turning it into delicious food that people cannot say no to.



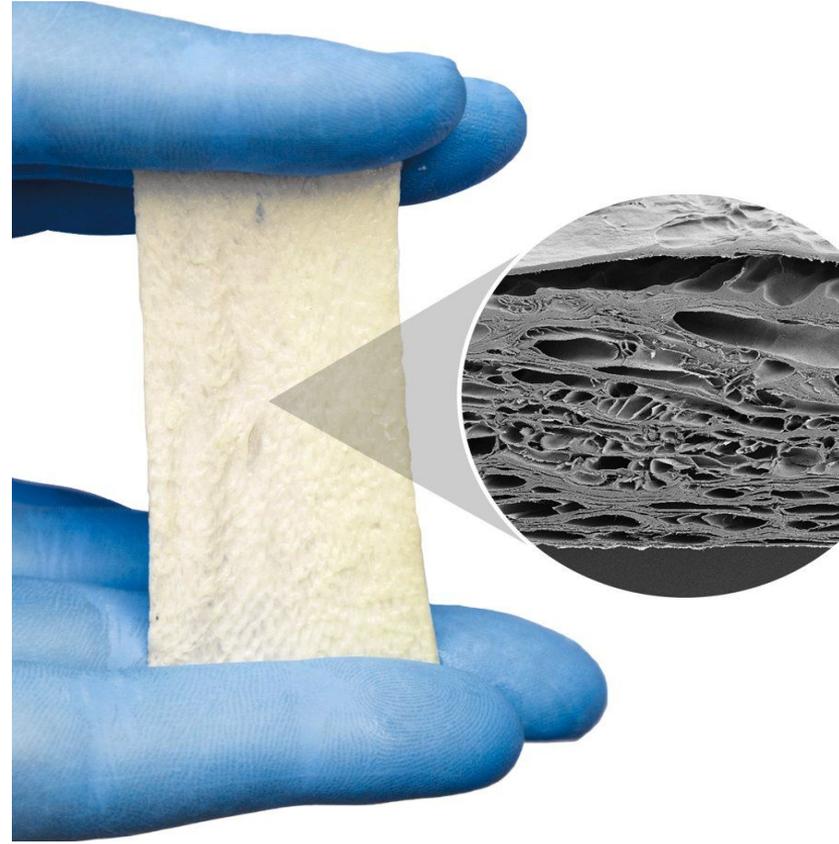
Funghi express

An innovative Italian startup that studied the process of growing mushroom from coffee waste and packaged it into a desirable consumer product.



Kerecis

Kerecis develops fish-skin products to heal human wounds and tissue damage. Fish skin helps wounds and burns heal quickly because it is rich in Omega3.



2.4 | Traceability & Transparency

What can you achieve with it -

Quicker and targeted response, recovery & prevention in case of food safety emergencies

Deeper Supply chain insight allowing to accurately predict or match demand and avoid Food waste

Empowerment

Marketing value



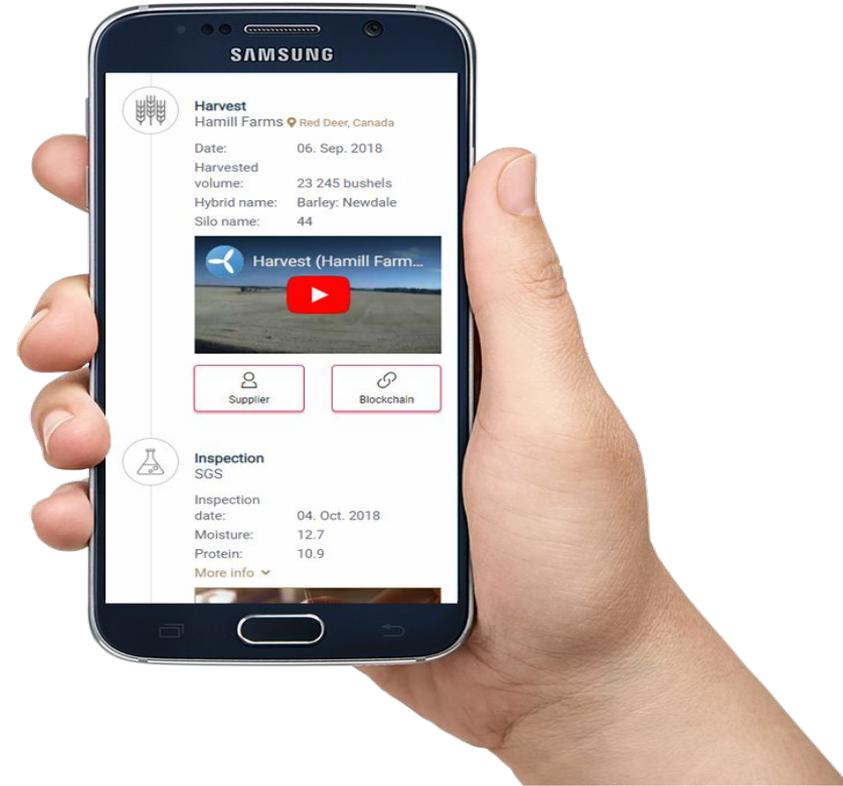
2 CRUCIAL THEMES



TE Food

Farm to table Food traceability on Blockchain.

- Object identification
- Data Capture
- Data Storage
- Data visualisation



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Senseable City Labs

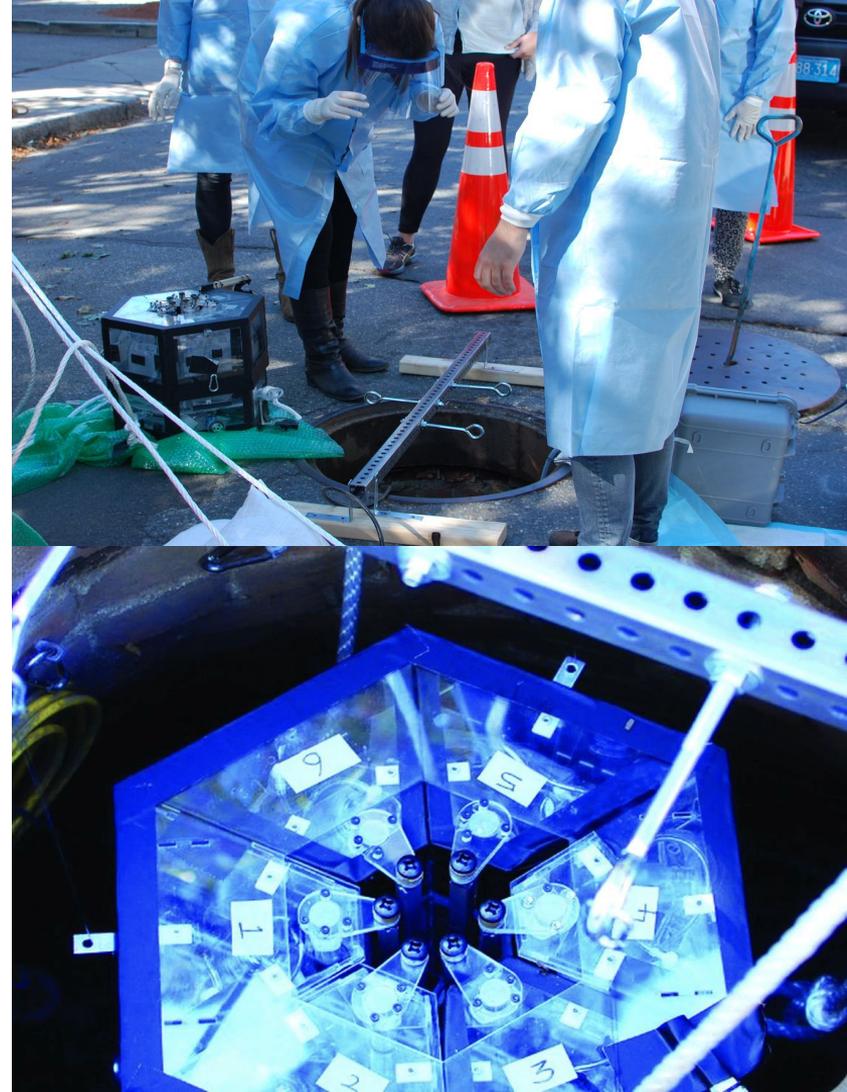
Luigi, an MIT robot is collecting poop from the sewers to learn about the city's eating habits and health.

What is city public health departments could be empowered by this data?

Could epidemics be prevented?

Could the city health be improved?

<https://www.bostonglobe.com/magazine/2017/01/19/why-mit-has-robot-collecting-samples-sewer/g1EhuRPbVR2VtwwJuo2DTN/story.html>



2.5 | Novel Food production

Like 3d Food printing & innovative domestic production and preservation systems-

- Reconnecting with food origin
- Zero km food
- Circular living
- Food waste prevention
- Freshness as a high gastronomic value
- Personalized nutrition



2 CRUCIAL THEMES



Blu Rhapsody

A cutting edge 3D printing technology and excellence in tailored made pasta experiences paired with highest quality ingredients created for professional chefs and anyone with a taste for unique food experiences.



Pixsweet

Using 3D thermoforming injection technology (3DTI) for production as well as an online search function, Pixsweet enables you to turn any shape you want into a frozen treat.



Plantui

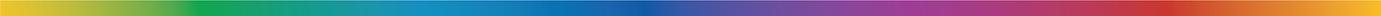
Plantui is a unique all-in-one indoor garden ideal for every home - grow herbs & salads with our hydroponic Smart Gardens & enjoy simple soil-free gardening.



Living Farms

Living farms develops controlled ecosystem technology for turning food waste into high quality fertilizer (compost) and proteins!





3 COVID: WHAT'S CHANGING



- 3.1 What will stick
- 3.2 Loneliness and Depression
- 3.3 Damaged trust in hygiene
- 3.4 Travel restrictions
- 3.5 Looking at the past

POLICIES WILL SWING UP AND DOWN

- Limited gatherings
- Travel restrictions
- Hygiene requirements
- Protecting vulnerable groups

Top Down Enforced

Hundreds of ongoing A/B experiments globally. Best practices will be copied to other regions and industries.

NEW BEHAVIOURS WILL STICK

- Remote working
- Mixed work/life balance
- E-health
- Heavy e-commerce use

Bottom Up Embraced

Both people and organizations will discover the benefits of a new way of living and working, challenging traditional business and lifestyle norms.

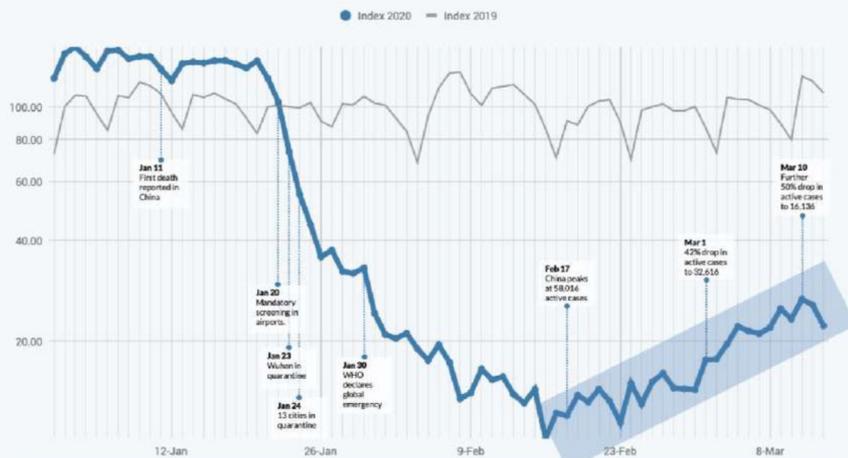
3.1 WHAT WILL STICK



GOING BACK TO A (NEW) NORMAL WILL NOT BE EASY

China Room Nights Booked Index

Volume of Room Nights booked across Shiji Distribution Solutions customers in China during COVID-19 epidemic



source: Shiji Distribution Solutions

Shiji DISTRIBUTION SOLUTIONS

China / Society

Coronavirus: Chinese cinemas told to close just a week after reopening

- China Film Administration issues notice on Thursday as government seeks to prevent a new wave of Covid-19 cases, after locally transmitted infection is reported in Zhejiang
- Cinemas in some parts of the country did reopen on March 20, but film-goers' joy was short-lived

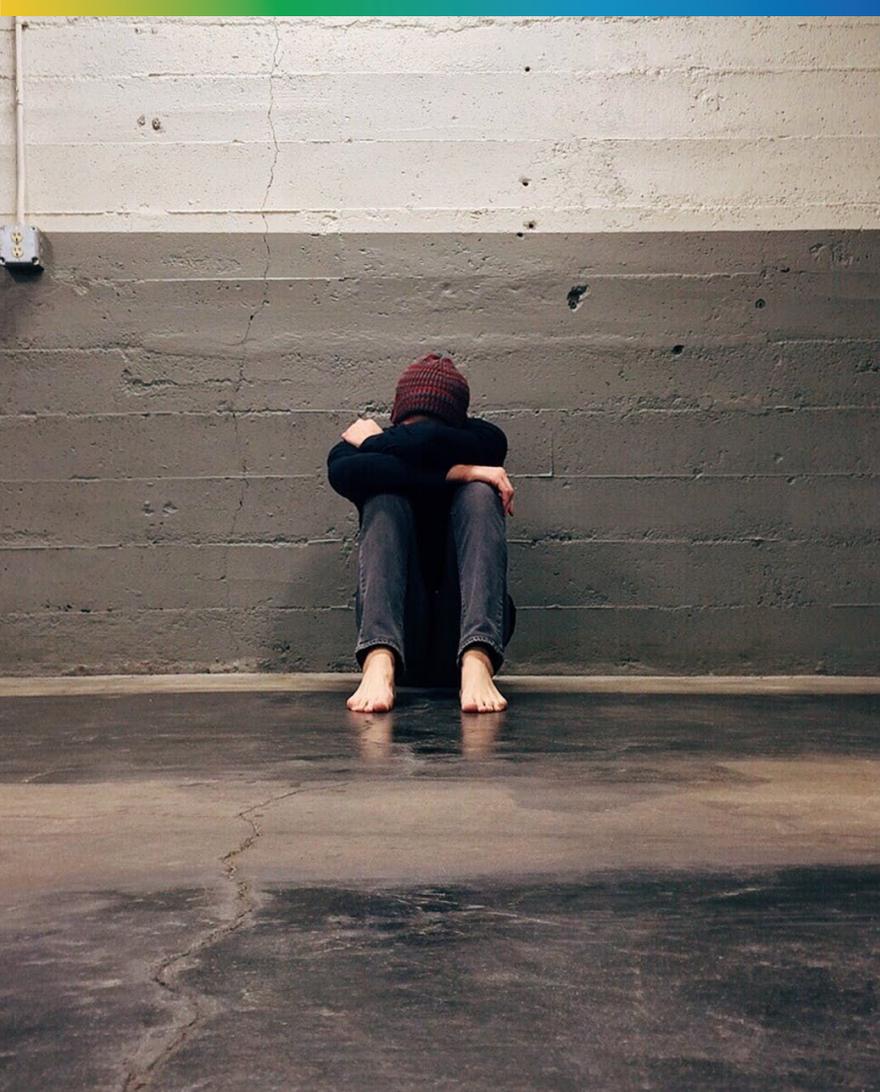


Jun Mai

Published: 7:00pm, 28 Mar, 2020

3.1 WHAT WILL STICK





There will be a tremendous need for **(remote) therapy and coaching**. Certain regions already see a rise in demand for **pets and animal companions**. Also, **online social games/tools** are booming. (e.g. Houseparty, Discord,...) which were not designed for new use cases (**Online Dating via Zoom**)

3.2 LONELINESS AND DEPRESSION





This can result in **packaging redesigns, sharing of personal health records** and temperature, retail/hospitality formats with **free service add-ons focused on cleanliness**. Preference of **science-forward products** over 'natural', **Contact-free deliveries** and drop-offs.

3.3 DAMAGED TRUST IN HYGIENE





Local tourism will flourish of course. Traveling abroad might be only worth the effort for longer extensive holidays, taking a period of quarantine into account. Potentially **combining travel with remote work**. The **rural and remote will become luxury escapes**.

3.4 TRAVEL RESTRICTIONS



Covid-19 Industry Impact
boardofinnovation.com

Note: Detailed impact analysis per industry in dedicated reports.

Industry characteristics

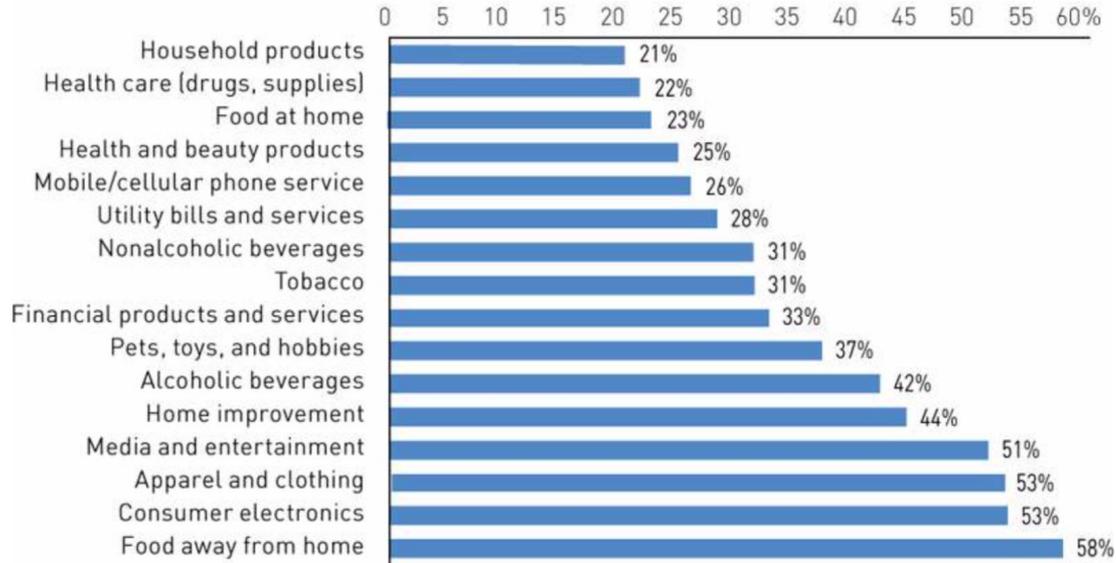
← If characteristic is present in your or your clients' business, impact is negative (unless you successfully pivot). →

	Large gatherings are essential	Close human interaction is essential	Hygiene, or perception thereof, is critical	Dependant on travel (business and leisure)	Service or product is postponable or expendable	Impact analysis
Tourism and hospitality	Very high	Very high	High	Very high	High	Very high
Sports	Very high	Very high	Medium	Low	Medium	High
Music	High	High	Low	Medium	Medium	High
Automotive	Low	Low	Medium	Low	Very high	High
Beverages (Alcohol)	High	High	Medium	Medium	Low	Medium
Retail (non-food)	High	Medium	Medium	Medium	Medium	Medium
Pharmaceuticals	Low	Low	High	Low	Low	Low

3.5 CROSS-INDUSTRY ANALYSIS



Over the past 12 months, I reduced my expenditure in this category
(Percentage of respondents who agreed or strongly agreed)

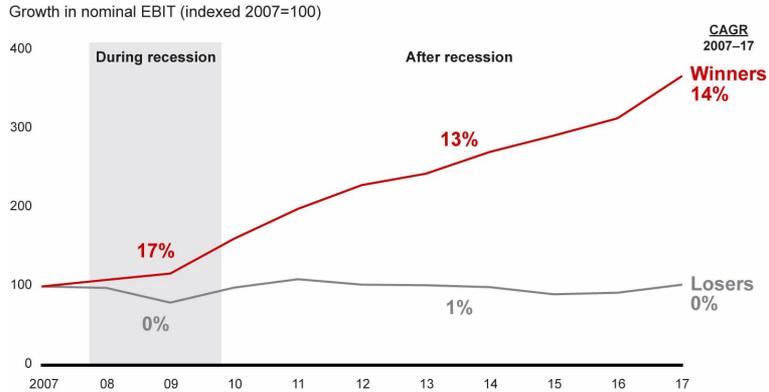


Source: Booz & Company Fall 2009 Survey of Consumer Spending. Sample size n = 2,010

3.5 LOOKING AT THE PAST

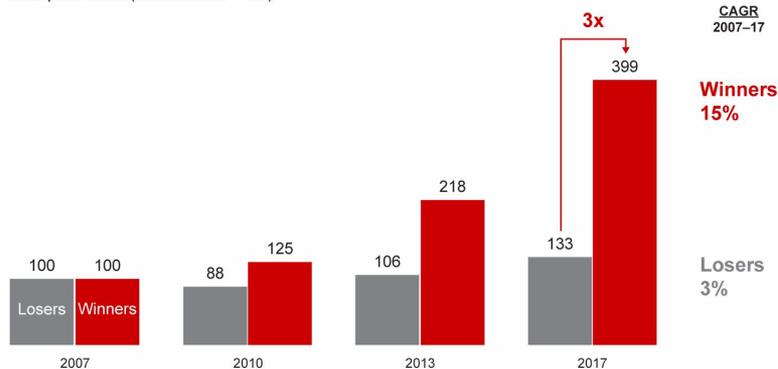


"A crisis is a terrible thing to waste" – Paul Romer



Sources: S&P Capital IQ; Bain Sustained Value Creator analysis, winners (n=415) losers (n=3,449)

Enterprise value (indexed 2007=100)

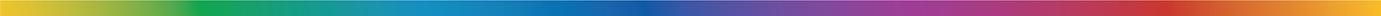


Sources: S&P Capital IQ; Bain Sustained Value Creators analysis

The losing companies tended to follow a few recession dead ends. Some tried to slash and burn their way to the other side, under the misconception that extreme cost-cutting would be enough to survive the storm. They **cut R&D across the board, scaled back on sales and marketing activities, laid off valuable talent and ruled out acquisitions**. Other lagging companies strayed outside their core business, investing in the latest hot sectors and tools, praying for a winner.

3.7 INVEST IN INNOVATION





4 COVID: WHERE TO BET



4.1 Functionality & Organic

4.2 Delivery

4.3 Alternative Proteins

4.4 Meal-kits

4.5 Sanitation Creazines

4.6 Art

4.7 What we discovered

Mention of “**immunity**” in the context of food research rose 27% between February 2019 and March 2020. **Kombucha, pickled vegetables** and **bitter melon** are examples that particularly saw an uptick in interest. - TasteWise

In spite of the current crises in the UK, **organic market** is set to surpass the \$2.5B sales mark by the end of the year, achieving more than 50% in a decade.

Whole Foods Market started limiting the number of online customers for the **unprecedented demand**.



4.1 FUNCTIONALITY & ORGANIC



The availability of **bioactive ingredients** for functional food will become critical.

Vitamin C, Vitamin E, Vitamin D and Vitamin A consumption have been booming in the past 2 months, both through supplements and with **fortified foods**.

There are opportunities for **sleep beverages** as people are stressed and have a hard time sleeping, as well as **energy drinks**, because people also are having a harder time getting motivated



4.1 FUNCTIONALITY & ORGANIC



- New practices for **social distancing in the kitchen**, in **queues** or during delivery pickups
- A policy for staff members who **display symptoms** of COVID-19
- Updated practices and **cleaning processes** and **smarter way to communicate them**
- Changes in food delivery **packaging**, such as **containers that allow for easier disinfection** or a **better customer experience**



4.2 DELIVERY





- **US sales of plant-based meat substitutes increased 200%** in the week ending April 18, compared to the same time period last year.
- **US sales of conventional meat increased by 30%** during that same period.
- **U.S. pork production to decrease about 50%**
- Beyond Meat announced that the company had the four **top selling plant-based meat SKUs** for the month in March, with **sales up 233% year-over-year** and velocity growing 195%, outperforming the category (93%).

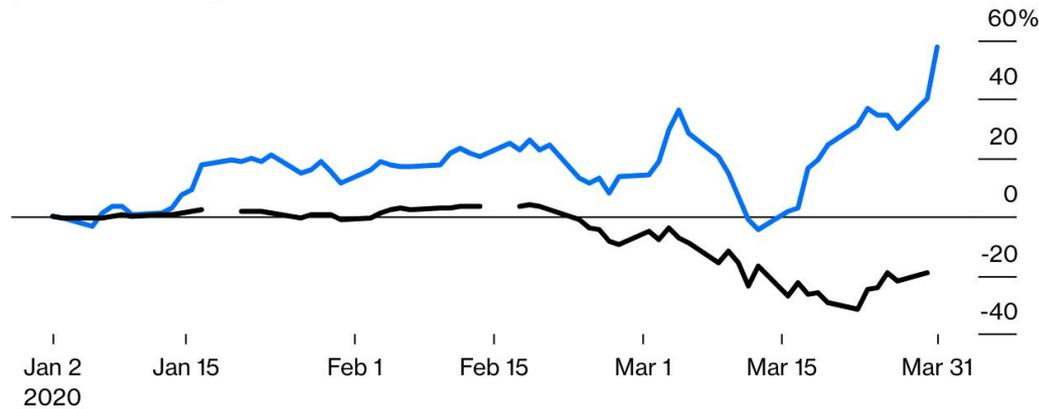
4.3 ALTERNATIVE PROTEINS



Gobbling Up

HelloFresh shares have soared alongside the demand for its meal kits

HelloFresh SE S&P 500 Index



Source: Bloomberg

HelloFresh sales for Q1 2020 have been of 685 million euros (\$750 million), **up from 420 million euros a year earlier**. Sun Basket, Blue Apron, Hello Fresh, they all are experiencing a **substantial increase in demand**.

Consumers still say that there is room for improvement:

- **Tasteless options**
- **Too much packaging**
- **No real learning journey**
- **Lack of experience**

4.4 MEAL-KITS: PROS & CONS





- Growing demand for **contact-free sensing** as well as **hygiene** issues is expected to drive the **touchless sensing market**
- Making more transactions eligible for **contactless payments**
- **Free sanitation supplies** will be found in every public space
- **Voice and face recognition** technology will finally be applied to highly purposeful uses

4.5 SANITATION CRAZINESS

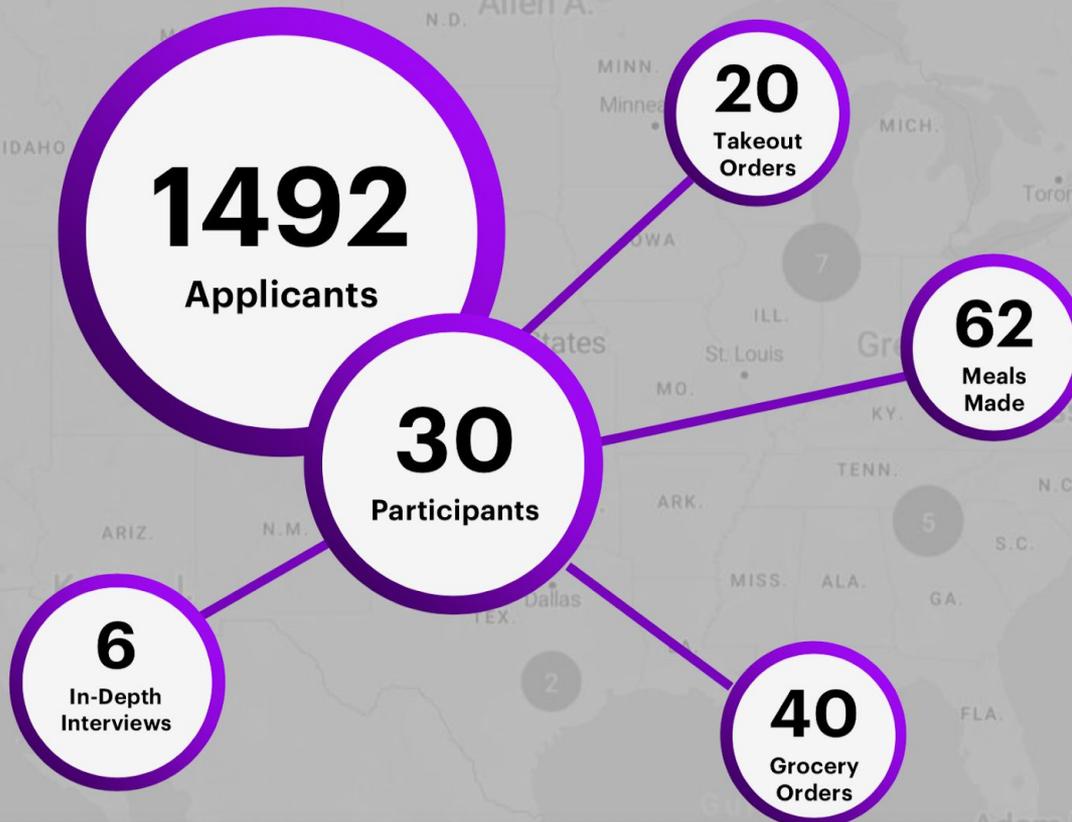


- **Jazz** spread around the world during World War II
- There are tens of thousands of **movies** that succeeded that were founded in a down economy
- People need now more than ever art in their lives. Art to enjoy and to make.
- The brands who win now are the ones which:
 - **Boost creativity**
 - **Create engagement**
 - **Create surprise**
 - **Make people laugh**
 - **Make people connect**



4.6 ART & CREATIVITY





4.7 WHAT WE DISCOVERED



SAME BUDGET, DIFFERENT CHANNELS (US)

5. How much did you typically spend per week eating out (includes restaurant dining, order pickup, or delivery) pre COVID-19?

Question Type: Single Choice | Total Respondents: 104

	Total 100%	Age 55+ 100%	Age 35 - 54 100%	Age 18-34 100%
Up to \$29.99	33.65%	76%	28.57%	6.67%
Between \$30 - \$49.99	18.27%	16%	22.45%	13.33%
Between \$50 - \$99.99	18.27%	0%	16.33%	36.67%
Between \$100 - \$149.99	17.31%	8%	18.37%	23.33%
Between \$150 - \$199.99	8.65%	0%	14.29%	6.67%
\$200+	3.85%	0%	0%	13.33%

6. How much did you typically spend per week on groceries (includes shopping in-store, curbside pickup, or at-home delivery) pre COVID-19?

Question Type: Single Choice | Total Respondents: 104

	Total 100%	Age 55+ 100%	Age 35 - 54 100%	Age 18-34 100%
Up to \$29.99	7.69%	8%	10.2%	3.33%
Between \$30 - \$49.99	13.46%	24%	8.16%	13.33%
Between \$50 - \$99.99	26.92%	12%	32.65%	30%
Between \$100 - \$149.99	30.77%	36%	32.65%	23.33%
Between \$150 - \$199.99	13.46%	8%	12.24%	20%
\$200+	7.69%	12%	4.08%	10%

4.7 WHAT WE DISCOVERED



THE NEW SUPERMARKET IS ONLINE (US)

"I am grocery shopping online more than be...	Strongly Disagree	25%	26	52%	13	20.41%	10	10%	3
	Disagree	7.69%	8	12%	3	4.08%	2	10%	3
	Neither Agree or Disagree	10.58%	11	8%	2	16.33%	8	3.33%	1
	Agree	20.19%	21	12%	3	24.49%	12	20%	6
	Strongly Agree	36.54%	38	16%	4	34.69%	17	56.67%	17
	Total	100%	104	100%	25	100%	49	100%	30

4.7 WHAT WE DISCOVERED



LOOKING FOR EASY DIY COOKING JOURNEY (US)

		Total 100% (104)		Age 55+ 100% (25)		Age 35 - 54 100% (49)		Age 18-34 100% (30)	
"I am using meal kits now, and I wasn't be..."	Strongly Disagree	36.54%	38	88%	22	28.57%	14	6.67%	2
	Disagree	3.85%	4	4%	1	6.12%	3	0%	0
	Neither Agree or Disagree	8.65%	9	4%	1	6.12%	3	16.67%	5
	Agree	26.92%	28	4%	1	30.61%	15	40%	12
	Strongly Agree	24.04%	25	0%	0	28.57%	14	36.67%	11
	Total	100%	104	100%	25	100%	49	100%	30

4.7 WHAT WE DISCOVERED



SUSTAINABILITY IS STILL IN PEOPLE'S MINDS (US)

"I am more concerned with global warming a..."	Strongly Disagree	15.38%	16	32%	8	14.29%	7	3.33%	1
	Disagree	7.69%	8	16%	4	8.16%	4	0%	0
	Neither Agree or Disagree	24.04%	25	36%	9	14.29%	7	30%	9
	Agree	28.85%	30	12%	3	36.73%	18	30%	9
	Strongly Agree	24.04%	25	4%	1	26.53%	13	36.67%	11
	Total	100%	104	100%	25	100%	49	100%	30

4.7 WHAT WE DISCOVERED



LESS BULLS**T (US)

"I am spending more on non-essential items..."	Strongly Disagree	23.08%	24	56%	14	16.33%	8	6.67%	2
	Disagree	17.31%	18	28%	7	12.24%	6	16.67%	5
	Neither Agree or Disagree	9.62%	10	4%	1	16.33%	8	3.33%	1
	Agree	23.08%	24	12%	3	16.33%	8	43.33%	13
	Strongly Agree	26.92%	28	0%	0	38.78%	19	30%	9
	Total	100%	104	100%	25	100%	49	100%	30

4.7 WHAT WE DISCOVERED





5 OPPORTUNITIES FOR SPICES



FUNCTIONALITY WAVE

“I’m looking for **new foods which can make me healthier**. My IG is on fire! I guess I’m using it as designers use Pinterest” - Alex, 26 yo

ACTION ITEM:

Position yourself with the “food as medicine” mindset!

GEN Y/Z WANT TO BECOME BETTER COOKS

“I’m realizing that my dishes taste all the same! I guess spices could help but **I’m not really sure of how to unleash all their power**”
- Andrea, 32 yo

ACTION ITEM:

Focus on education!

5. OPPORTUNITIES FOR SPICES



BIG BRANDS HAVE A HUGE OPPORTUNITY

“In a moment like this, I **trust the small startups far less than I used to**. I’ve no idea where they make their products and if they can afford proper safety measures”

- Katie, 28 yo

ACTION ITEM:

Big companies, show your capabilities!

Small companies, reassure your customers!

GEN Y/Z WANTS TO GO DEEP

“I believe now more than ever that this world needs me and my skills. ... yes, totally! I will **pay far more attention at who’s behind the brands I buy**.”

- Dave, 32 yo

ACTION ITEM:

Share your soul!

5. OPPORTUNITIES FOR SPICES



WELCOME IMPERFECTION

“This is the time for **compassion** and **solidarity**. And chefs are the new teachers. They can share now how **messy** we can be in the kitchen and how **the shining Instagram pics are not relevant any longer**”

- Behz, 25 yo

ACTION ITEM:

Leverage influencers to show imperfection!

DO IT YOURSELF

“Everyone is bored now, and Netflix doesn’t give us the *touch* we need. I am constantly looking for puzzles, **things to assemble and build.**”

- Raman, 34 yo

ACTION ITEM:

Embed a manual, fun aspect in your products!

5. OPPORTUNITIES FOR SPICES



BUILD ROLE MODELS

“None knows what to do now, which **makes me getting lost**. Who should I follow now?”

- Natalie, 22 yo

ACTION ITEM:

Communicate conscious leadership, young generations are here to follow!

IF YOU CAN, HIRE!

“This week Airbnb laid off 1900 people, Uber 3600. It’s sad but it’s also an opportunity for **talented people to come together and invent a new world**. People will be scared to create new ventures right away, but **freelancing** and **intrapreneurship** will skyrocket.”

- Luca, 33 yo

ACTION ITEM:

Foster intrapreneurship (and hire?)

5. OPPORTUNITIES FOR SPICES



FUTUREFOOD.NETWORK

IMPROVING THE WORLD THROUGH FOOD

MAY, 2020

CHIARA CECCHINI | chiara.cecchini@futurefoodinstitute.org



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futurefood.network
@ffoodinstitute