# LANDSCAPE OF GLOBAL FOOD INNOVATION





# HOW THE HECK ARE WE GOING TO FEED 10 BILLION PEOPLE BY 2050?

Generative Artificial Intelligence (AI)

Molecular Farming

Precision Fermentation

# The 4th Industrial Revolution Is Upon Us.

FROM INDUSTRY 1.0 TO INDUSTRY 4.0

#### **FIRST**

#### INDUSTRIAL REVOLUTION

Introduction of mechanical production facilities with the help of water and steam power

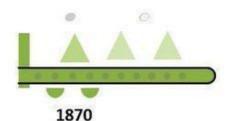


First mechanical loom

#### SECOND

#### INDUSTRIAL REVOLUTION

Introduction of a division of labor and mass production with the help of electrical energy



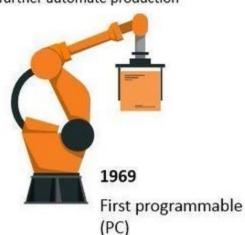
First assembly line

1900

#### THIRD

#### INDUSTRIAL REVOLUTION

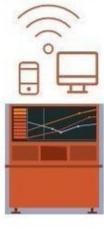
Use of electronic and IT systems that further automate production



#### **FOURTH**

#### INDUSTRIAL REVOLUTION

The Digital Connected World



2000

Principles of Scientific Management TOM

- · Lean
- Six Sigma

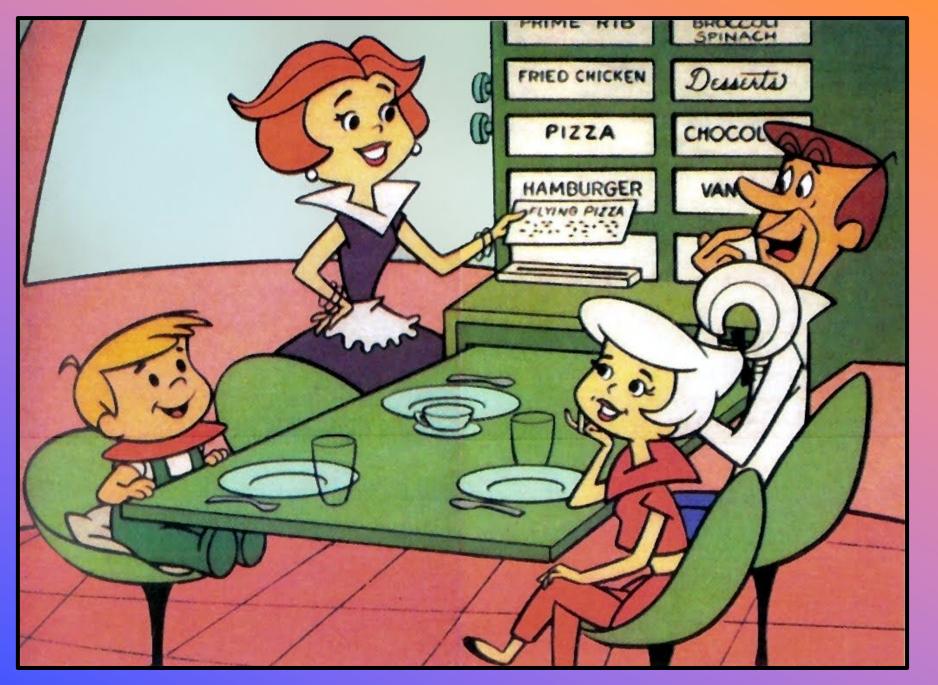


1800

Source: CP Ventures



**PRODUCTIVITY** 



www.BerryOnDairy.com



## **GENERATIVE AI**

Traditional AI: analyzes data and makes numeric predictions.

Generative AI: machines provide ideas/potential solutions/ innovations, much like humans.



### **GENERATIVE AI**

"For us, AI is a member of each of our teams. It's like having an intern on the team, who contributes like all other team players.

Al provides input to our final decision.

Al allows us to have one eye on today and one on the horizon. Before any new product goes into test market, we work with digital concepts generated by Al."

Lanette Shaffer Werner

chief innovation, technology and quality officer, General Mills.



Source: Kraft Heinz Company



# **MOLECULAR FARMING**

Plants create new compounds and products, such as proteins.

This is done via genetic modification of plants.

This is not "controlled environmental agriculture" e.g., greenhouses, vertical farming and hydroponics



# MOLECULAR FARMING

"It's about making foods more nutrient dense, not calorically dense.

We use AI and proprietary algorithms to gain deeper insights across native genomes, genes and traits.

We're on a mission to unlock nature's abilities to make consumers' favorite foods more delicious, healthy and planet friendly."

Todd Rands, chief executive officer, Elo Life Systems







# PRECISION FERMENTATION

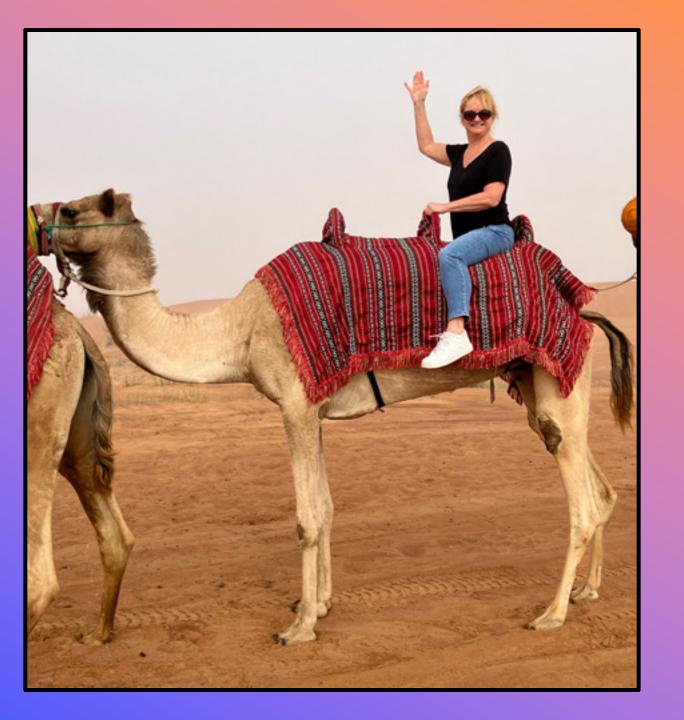
Genetic modification of microorganisms to exploit them for what they do naturally: ferment carbohydrates











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## **CONSUMER TRENDS**

Food as Medicine
Personalized Nutrition
Quality Protein
Anti-Ultra Processing Movement
Regenerative Agriculture/Soil Health

















Milk 900ml



milk



Milk & Coffee



Milk & Almonds



milk chocolate



Milk chocolate box



Milk Chocolate Biscuits in



Chocolate Biscuits for KIDS



Cheese biscuits



Cheese biscuit milk chocolate



18 large bags of cheese biscuit milk chocolate



Yogurt Taste Jelly Muscat Flavor



Yogurt Taste Jelly Fruit Mix Flavor



Ice Bar Banana Au Lait



Corn soup made with milk

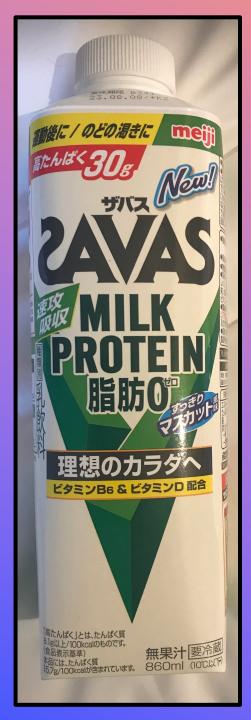


Pumpkin soup made with milk



Lococare





















# **CONSUMER TRENDS**

Convenience
Flavor Adventure
Unique Texture





















































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rice dessert

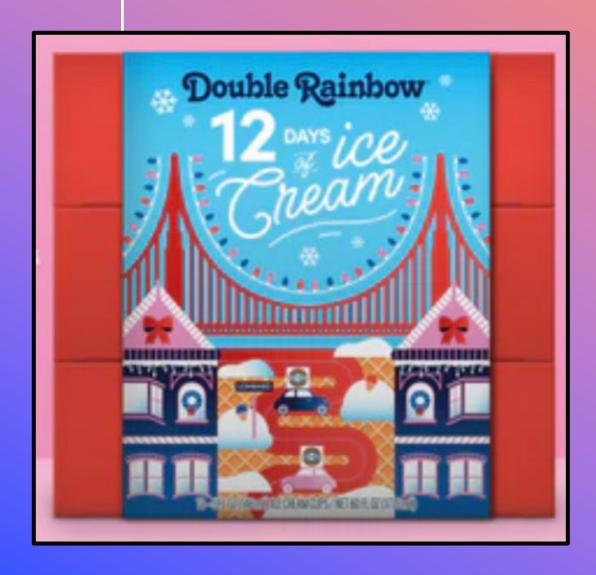


























# THANK YOU

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