

insights

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Transformative Trends and Technologies in Food

From farms to supermarkets, the food sector is undergoing a radical transformation. New technologies, emerging business models and shifts in consumer expectations are impacting the industry at an accelerated pace. Companies are embracing the need for change, seeking smart solutions to some of the industry's biggest challenges and working to make a lasting imprint on the way we shop, cook, eat and produce food for years to come. Here we look at seven areas of change that are set to influence the future of food.



1 / RETAIL

The Omnichannel Dilemma

With e-commerce, meal kits, delivery and changing expectations redefining retail, multiple-channel retailing has become an essential strategy in an increasingly competitive market. How we shop for food is rapidly evolving and it's changing the face of food marketing.

In the future, shoppers will spend less time in physical stores, making traditional touchpoints a thing of the past. Retailers and manufacturers will invest heavily – and creatively – to stay in front of a new kind of consumer. Expect to see augmented reality, direct offers from purveyors, pop-up events and other novel marketing methods in this emerging digital grocery landscape.

The Power of the Microbrand

Consumers are coming to expect smarter, streamlined solutions that offer an exceptional buying experience. With niche, direct-to-consumer “microbrands” upending sleepy categories ranging from mattresses to toothbrushes to cookware, manufacturers must be ready to respond with products that inspire trust and a cult-like following.

While start-ups and entrepreneurs have paved a path for refreshing stale food categories, manufacturers of all sizes will need to present their products in a new light to prove their brand's worth.

2 / FOOD SAFETY

Traceability Solutions

New technologies are set to bolster the food safety sector by offering more efficient, collaborative and transparent solutions for the supply chain. Cloud-based networking systems like blockchain (a digitized ledger of recorded transactions), as well as innovations including invisible, edible bar codes, will provide growers, processors and retailers immediate access to key information.

Developing technologies for the food space will gather data, link players in the supply chain and speed up the investigation of tainted food. Solutions like these have the power to boost consumer confidence in our global food system.

Biocontrol & Biopreservation

Could a natural, antimicrobial application address spoilage and food safety concerns for minimally-processed produce like ready-to-use lettuce? Biological solutions that use organisms to fight pathogens, pests and disease are an emerging trend that will strengthen and grow the food safety and testing market.

Innovative biocontrol agents can fight biological pathogens such as *E. coli*, but they also can make our food last longer. Biopreservation applications will help meet consumer requirements for natural foods, sustainable methods and food waste reduction.



3 / RESEARCH & DEVELOPMENT

The Rate of Innovation

Challengers and disruptors have increased pressure on the pace of food product innovation. The research and development pipeline is now faster than ever, and that means companies must work in new ways.

Going forward, food product developers must embrace an adventurous approach that brings products to market smarter and faster. Learning to accept failure will be part of the process, with limited product runs becoming the norm. Those who welcome collaborative partnerships will be better positioned to meet the growing demands for affordability, convenience, nutritional value and sustainability.

The Creative Impact

Talented restaurant chefs are leading the way when it comes to winning over sophisticated foodies. They're leveraging unique ingredients, taking risks with

untested combinations and embracing an anything-goes attitude toward flavor and format. Most importantly, they know how to bring personality to the table.

Game-changing product development will need to prioritize new ideas over other efficiencies to bring winning concepts to life – and to continually take the pulse of a brand's target customer.



4 / PACKAGING

Next-Gen Packaging

Innovative packaging is set to be the next battleground in food CPGs. Demand for smaller sizes, new formats, unique features and sustainable offerings will transform the packaging landscape in 2019 and beyond.

Consumers will look to companies to take the initiative on compostable items, refillable packaging and water-based ink, and manufacturers will need to seek swift solutions for eco-friendly options. The future



of CPG packaging will also bring technological innovations such as edible, invisible and intelligent packaging that can monitor the condition of foods.

Addressing Plastic Pollution

The focus on reducing plastic straw use this year is just the beginning of a movement demanding a closer examination of worldwide waste. A growing awareness of the environmental impact of plastic bags and microplastic particles will put the global food industry in the sustainability spotlight.

Shoppers will increase pressure on companies to go fully recyclable and on restaurants to reconsider single-use plastics. The food product lifecycle will be on the agenda for manufacturers, and the food sector will make a business case for uniting to fight plastic waste.



5 / AGRICULTURE & SUPPLY CHAIN

Foodie Farmers

Imagine a world where a uniquely flavorful carrot or potato could be the differentiating factor in a winning dish or product.

In the future, expect to see innovations in produce via plant breeding by chef-farmer teams revisiting old-fashioned crossbreeding techniques. Their focus will be more on flavor and less on yield, with the goal of cultivating flavor-optimized crops that inspire culinary innovation, make an impact on the restaurant scene and up the ante for the farm-to-table movement.



Artificial Intelligence Farms

Can artificial intelligence (AI) help farmers address labor shortages, crop yields, shifting weather patterns, growing conditions and other agricultural challenges? Could it someday help us grow basil and tomatoes in home kitchens or even in stores?

Technologies like AI, robotic harvesters, “machine



learning,” innovative hardware and advanced analytics are set to transform the future of both indoor and outdoor farming. A data-driven era may bring fundamental changes and stability to a historically vulnerable industry, both for small- and large-scale producers.



6 / HEALTH

Digitized Nutrition

Health is getting personal and going digital. Keeping tabs on your daily diet will become automated in the future, with wearable technology tools like mini tooth sensors that can seamlessly monitor glucose, salt and alcohol intake. Smart food scales will analyze the nutritional value of food and intelligent dinner plates will record what you eat.

Tracking meaningful data will become routine, ultimately helping consumers take control of their health and diet. From illness to weight loss, digital technology will bring opportunities for targeting specific food and nutritional needs in real time.



The Microbiome

The wild frontier of microbiome science is teaching us that our gut biome should be a key health focus. Though the research is still emerging, there’s a growing understanding of how our diet affects the human body.

This new field will herald in a new era of food as medicine – one where next-level functional foods can support health needs ranging from digestion to allergies to mental health. With probiotic and prebiotic foods leading the charge, expect microbiome-related product development to usher launches that address health in a whole new way.



7 / THE NEXT GENERATION

Grazing the World

“Generation Z” – the generation born after Millennials and the first digitally native demographic – is already showing its love for a globally-informed palate. They will change the way we eat and will determine what we find on the menus of tomorrow.

There’s a collective open-mindedness and desire for exploring broad, unfamiliar flavors among this ethnically diverse cohort. This mindset will open up new opportunities for manufacturers to introduce exciting ingredients and food formats from around the world.

Redefining Health & Wellness

Young people’s views on what constitutes a healthy way of life are proving to be more balanced and expansive than older generations. Lifestyle factors like sleep, stress and emotional well-being will increasingly play a role that is more closely intertwined with diet and exercise goals.

Expect to see a more integrated and empowered perspective on health and wellness among the tastemakers of tomorrow. With this holistic outlook on life will come foods and beverages that make it easier to take responsibility for one’s wellbeing.



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