



With summer officially here, we are seeing more travel and mobility in the consumer's world. This newsletter will consider product launches and trends happening in the snack world. While looking at product launches, we also want to understand more about the delicate balance in the supply chain world.

Snacking: novel trends

According to the State of Snacking, a report from Mondelez, HarrisPoll and Nextatlas, 82% of consumers look forward to trying new stacks; among these, 90% are millennials. The data shows that consumers are always eager to try new snacks, which makes this category flourish yearly. Snacks have become a way to find a break in our daily activities and something to receive as a gift from friends.

In Latin America, for example, people want to try snacks under the recommendation of others, while in Africa and the Middle East, they like buying their snacks online and receiving them via direct mail. Gen Zs will find new snacking ideas via social media (State of Snacking by Mondelez, HarrisPoll, Nextatlas).

Living in a fast-paced world calls for a plethora of new habits with food consumption. Our lifestyles divide us into mindful eaters and people replacing our meals with snacks, eating in front of computers, or during our daily commute. As a result, snacking has become an integral portion of our life, especially during covid, and due to it, our attention has shifted from indulgent snacking to healthy snacking.

As you may understand, this trend will not disappear the global snack market is expected to increase significantly from 2020 to 2025. So it looks like we will snack more and more in the years to come. Looking again into the State of

Snacking report, at least 79% of consumers think that the definition of snacking has changed over the years into something considered healthier and those food developers should adapt to meet consumers' needs. Consumers are increasingly looking for functional snacks. However, around 88% of people still consider a balanced diet should include small indulgences, and 68% could not imagine a world without a sweet treat. Food companies are then called to manufacture snacks that balance consumers' demands for indulgent flavour and taste alongside healthier formulations which, as you can guess, sets an interesting challenge.

The rise of health-boosting foods called for reformulation of the following food categories;



High protein, high fibers snack bars

This latest trend is mainly tailored for sports and nutrition; according to Mintel, 27% of US consumers who eat cookies perceive high protein as an essential feature linked to a healthy lifestyle.

Proteins are one of the most valuable macronutrients for humans. According

to the Reference Nutrient Intake (RNI) for proteins, men aged 19 to 50 should intake at least 55.5 g of proteins per day, while women aged 19 – 50 will need 45 g of proteins per day. This amount changes for men aged 50+ with about 53.3 g of proteins per day, while 46.5 g of proteins per day is needed for women over 50.

Big and small brands should look into fortification carefully as most consumers are reading food labels more carefully. We should feel reassured that any fortification is not done artificially or chemically. Brands are looking into natural sources of proteins, and most of those used to enrich snacks come from seeds such as chia, pumpkin, pulses, and roasted nuts. These are not only naturally rich in proteins but also contain healthier fats such as omega-3.

But fibers are also introduced into snacks via pulses and freeze-dried fruit pulp. It is not unusual to spot inulin in most fiber-enriched bars and especially in granola bars. This is a naturally occurring fiber found initially in chicory root. The importance of fibers stands in their beneficial effect in improving gut health. They are considered prebiotics, defined as "a substrate that is selectively utilized by host microorganisms conferring a health benefit," according to the International Scientific Association for Probiotics and Prebiotics (ISAPP).

Among the novel products, we can find the Indonesian brand IniTempe.

IniTempe launched novel artisan cookies in three options: coconut, chocolate, and ginger flavor. Using tempeh makes this product naturally rich in protein and a superfood,

thus reflecting consumers' expectations regarding naturalness and healthiness.



Beans-based snack brands are arising since they appeal to health-conscious consumers. These brands are developing snacks high in proteins and high fibers. It will be likely that, we will see more crisps and chips brands using pulses. Some launches that we have seen in the past months pulses-based chips (lentils, hummus etc.) like the ones sold by the UK brand Eat Real Snacks. Pulses are the best option for brands that want to boost the plant-power halo of their products.



In the US, Outstanding Foods produces a baked puffed rice snack. Each unit weighs 21g of protein (from pea and brown rice) and natural sources of vitamins and minerals from a blend of kale, squash, shitake mushrooms, and kelp; the brand describes the product as 'a meal in a bag'.



Plant-based and gluten-free

It is not a secret that food companies are trying to adapt their recipes to plant-based and environmentally friendly ones. As a result, plant-based claims are exploding within the snacks category and confectionery.

Gluten-free products have for years suffered from the perception they might not deliver

the same taste and texture as classic bakery products and snacks. They are sometimes perceived as unappealing, which has motivated many R&D researchers to improve the next generation of gluten-free foods. Using a mix of natural ingredients to replace wheat is another strategy used by food manufacturers. Alternatives to wheat include ancient grains and seeds (es. buckwheat flour, amaranth flour, corn flour, quinoa, millet, etc.). In the US, the brand Soozy's produced gluten-free onion bagels using a blend of cassava, almond, and flaxseed flour, as well as tapioca starch and psyllium husk.

Sugar reduction for healthy indulgence

Both startups and researchers have spent many years exploring the potential for sugar replacement and novel strategies to achieve it. Naturally occurring sweeteners have been at the center of attention, with sweeteners like Stevia used primarily for beverages.



Brazzein

Lately, precision fermentation has given manufacturers and researchers the chance to scale up production for brazzein, which is a small sweet-tasting protein that can be isolated from the West African climbing plant Pentadiprandra brazzeana.

This protein is 1200 times sweeter than sucrose, contains zero calories, and is also stable under a wide range of pH and temperatures, making it particularly useful for its use in baked goods and snacks.

Healthier Snacking for kids

Not only adults, but snacks are also starting to be advertised for younger consumers (our kids). In Europe, the Danish company Circular Food Technology uses upcycled spent grain-sourced from organic Danish microbreweries - in their products from the Agrain brand. This has recently launched a 'kid-friendly' berry granola formulated with Stout Super Grain Flour. The product has a dark colour and flavour notes of rye and chocolate because of the addition of the upcycled flour. In addition, their granola bars contain powdered Danish rosehip, blackcurrant, and raspberry.



But even if healthy snacking is rapidly taking over, a significant portion of us consumers still look into chocolate and sweet snacks (especially during seasonal holidays) to help them boost their mood. The report by the National Confectioners Association (NCA) also revealed that 72% of consumers want chocolate and candy brands to offer portion size variety, with many believing emotional and physical wellbeing is linked to the overall experience (from choosing the product on the shelf to unpacking to finally eating the product). This suggests that it is not just the product that needs to be developed tailored to the consumers' needs and behaviours, but the overall eating experience should be tailored to and for them. There is nothing like attending Food Shows and Festivals to spot trends and novel products. Among them, we have the Summer Fancy Food Show held in New York City in mid-June.

These Food Show awards premium products across different categories. We had a look at the winners from the Snacks categories:

Among the winners for the Cereals and Granola category, we could spot Maple, Pecans, and Coconut Granola from US brand Hudson Henry granola: this is a

Novel Processes for Nutrient-rich Snacks

light, crisp granola produced with olive oil or coconut oil and seeds like sunflower and pumpkin seeds alongside nuts like almonds, pecans, cashews, walnuts, and pistachios which are natural sources of bioactive compounds like antioxidants, omega-3 and rich in gut-friendly fibres.

Among the new products in the Salty Snacks category they have Cassava Chips from US brand Turbana Corp. characterized by their being gluten-free and without trans-fats. These cassava chips are made from freshly harvested cassava, a root with very similar texture characteristics to a potato but with healthier nutritional characteristics.



Cereals and grains snacks are rich in starch, an excellent ingredient for extrusion processes. This process can exploit the expansion properties of starch and improve the textural properties of the finished product by decreasing the hardness and increasing the fracturability. The current trend of including more fibers into cereal bars in alternative ingredients such as pulses or other fibers such as inulin has many health and environmental-related benefits. The replacement of some of the starch with fibers and proteins can hurt the expansion properties of such components when submitted to extrusion processes, with consequences related to the textural properties and specifically hardness/softness of bars and chips in some cases. Fibers can cause decreased expansion and affect the material's porosity. One way to overcome such issues for food manufacturers and developers is to correctly set the ratio between starch/fibers/proteins and control parameters such as extruder temperatures, moisture content, and screw speed.

While extrusion helps improve textural properties of our reformulated foods and in the specific case of protein/fibers-based snacks, it is a process that might still cause nutritional losses.

How can this phenomenon be overcome? A novel strategy to avoid sensory losses due to the high temperatures used for extrusion is to use supercritical fluid extrusion. Supercritical carbon dioxide SC-CO₂ is an expansion agent, thus keeping the temperatures below 100 degrees Celsius. This reduces energy and helps preserve the sensory and nutritional characteristics of snacks.

Main points and more

Regarding the category for Appetisers and Snacks Cello Copper Kettle Cheese, Lemon Ginger Cherries, Praline Pecans from Schuman Cheese was awarded as the favorite.

They offer cheese paired with tart cherries infused with lemon and ginger tossed with roasted praline pecans for a salty and sweet blend.

People look into snacking more than before as a meal replacement and daily ritual. Consumers are increasingly into healthy diets and want to look into indulgent food with a healthy spin. While we are very much looking into nutrient-rich superfoods but not at the expense of taste, which imposes a significant challenge to food developers. Food manufacturers are looking into virtuous ingredients such as protein, fibers, and vitamins rather than ingredients like sugar, salt, or fat.

Ingredients research and innovation empower food manufacturers to produce tastier and more pleasant plant-based and gluten-free snacks. But one more trend involving snacks that are not necessarily related to their formulations: sustainable snacking and packaging. Consumers are becoming more reflective about their snacking choices, selecting brands that align with their values (80% became more aware of them in 2021).

Meanwhile, 85% of consumers want to buy snacks from brands committed to offsetting their environmental impact, focusing on low-waste packaging (78%).

But not only gourmet-type of snacks. Red wine and rosemary cracker kit from the brand Crackerology has also gained much attention. This product fits perfectly into the trending attitude towards preparing our foods at home. In what is hopefully the last leg of Covid-19, and after spending so much time at home, consumers have discovered the pleasure of cooking with the family experimenting with ingredients, and training their creative muscles. The Crackerology kit has everything you need to assemble a tasty snack for a gathering with friends.



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Ingredients to watch in bakery, snacks and cereals | Mintel.com

Prebiotics - International Scientific Association for Probiotics and Prebiotics (ISAPP) (isappscience.org)

iniTempe Bali Official Webstore

Eat Real Snacks

Outstanding Puffs | Outstanding Foods

Bagels - Soozy's Grain Free - Best Ingredients. Best Taste. Best You.
(soozysgrainfree.com)

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Small batch granola baked fresh and delicious – Hudson Henry Baking Co.

Turbana Corp. (specialtyfood.com)

Cello Snack Packs: Copper Kettle Cheese with Lemon Ginger Cherries and Praline Pecans - Cello Cheese

Red Wine & Rosemary Cracker Kit – Crackerology

Something to chew on: technological aspects for novel snacks (wiley.com)

Dealing With Disruptions in the Food and Beverage Supply Chain System

Main points and more

The food and beverage industry has often suffered from varied supply chain disruptions, with the most recent unsettling event highlighted by the unprecedented Covid-19 outbreak. This particularly event threw into question the resiliency of food supply chain systems, particularly observing various demand and supply shocks the system encountered. Visibly evident was the panic buying and hoarding behavior exhibited by consumers, a majority of whom home-stored key food items, including pasta, flour, bottled water, canned goods, and rice, to list a few. This triggered a long spree of empty supermarket shelves, reflecting evident demand-side disruptions.

short-term disruptions resulting from external demand and supply shocks, such as unreasonable and extreme reactions are illustrative of the inherent flaws of our food supply chain.

A Deficient Traditional Approach?

Much of this upset might be tied to food and beverage corporations' long-standing supply chain routines. As is customary, the food retailing business is controlled by huge, consolidated supermarket chains with substantial purchasing power and a focus on cost efficiency.

Under normal conditions, these strategies turn out to be efficient and responsive, especially when considering that retail buyers frequently plan for anticipated increases in consumer demand (e.g., around major holidays such as Christmas, Thanksgiving, and the summer barbecue season) with contracts in place with key suppliers to ramp up supplies as needed.

Labor Shortage

One can hardly ignore supply-side disruptions such as labor shortages and transport-related upsets with these two factors surfacing as key elements. Much of the research done on labor shortage centers on the effects of the pandemic, particularly looking into the restrictive dimensions imposed by various governments on issues such as quarantining and restrictive movement, which affected labor availability in some significant way. Worker illness also took a toll on many food processing entities, depriving companies of the manpower to make the supply chain efficient.



Present Day Dilemma

Despite this, the system seems far less nimble when responding to a quick, widespread increase in demand for various product categories across several locations. Under such situations, retailers often react with short-term rationing methods, including imposing purchase limitations on important commodities and designing food shopping hours for the elderly or vulnerable customers. In addition, goods are also susceptible to price hikes, a measure often deployed to restrict the excessive purchasing of goods. Because this model may be susceptible to

Unionization Movements

Unions do as well present significant risks to food supply chains, particularly observing recent surges of the same across the US. Indeed, the need for stronger union representation was largely bolstered by the epidemic, during which circumstances for front-line employees were scrutinized by the public and exacerbated by the tight labor market.

With employees engaging in increasingly direct activities, which might lead to a fundamental reorganization of labor-management relations, supply chains, particularly food supply chains, could be severely affected by labor union actions such as strikes, slowdowns, and wildcat actions. This might result in lengthier lead times for food goods to reach shop shelves, resulting in disappointed customers.

Disruptions to Logistics Networks

On the other end, the closure of boundaries – a form of restricting movement – saw truck hauling affected, particularly with the need to have drivers vaccinated before making cross border movements. These restrictions or disruptions led to food supply shortages, with countries such as Canada – a region that largely imports its food products from the US – experiencing dire impacts.

Mitigation and Solutions

With such dynamism inevitable, food players are equally needed to match up, specifically adapted to these changing unprecedented conditions as quick with little affecting the overall supply chain system. A concept that experts call being agile, this given approach aids as much in responding to unwarranted changes within the shortest time possible whilst neutralizing disruptors in some manageable manner.

Improving Supply Chain Visibility

One definite way of achieving this is through improving supply chain visibility, an ability that gives managers an upper hand in deciding from voluminous data generated from points within the supply chains. Experts argue out that the many disruptions that occurred following the Covid-19 event could have been minimized or rather mitigated if supply chain visibility status had been better executed.

Implementing Supply Chain Visibility across the Food Supply Chain Network

A precursor to its implementation – visibility – is the incorporation or use of advanced technologies, a proposition that may sound cliché or too familiar to many within the field. But advanced software continues to be significantly important in improving the general operations of a business, let alone its supply chain system. From a supply chain perspective, food and beverage firms are urged to recognize and value digital technologies and/or software components with the potential to give insight across supply chains and expedite the full product lifecycle, from conception to consumption.

For instance, blockchain, a decentralized, consensus-based trust mechanism, has been observed to improve supply chain visibility by tracking the very source of food products and up the supply chain, facilitating decision-making by allowing stakeholders to view timely, accurate, and reliable information while reducing the number of data sources that create decision points.

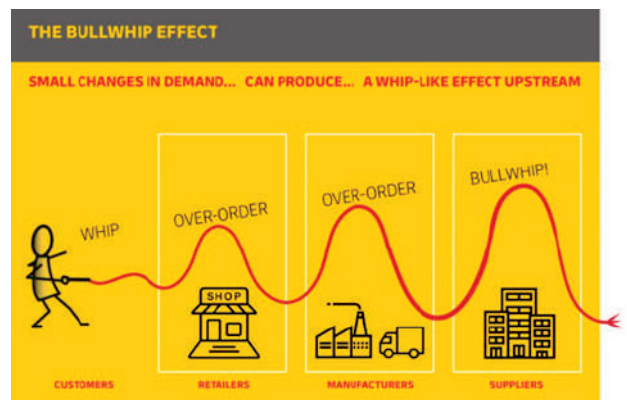
Walmart presents an excellent example of this technology in use, particularly utilizing blockchain to mitigate risks linked to tainted foods. Herein, the multinational retail outlet exploits the very capabilities offered by blockchain technologies, specifically offering to track and trace capabilities while sourcing pork from China. This initiative ultimately gives consumers confidence in the quality of products provided by the store.

Blockchain in Supply Chain Management



Collaborative Relationships

Integral to boosting supply chain resilience is robust and dependable supply chain partnerships. More of an antecedent that facilitates supply chain visibility, collaborative buyer-seller partnerships foster confidence among supply chain partners and adaptability in the face of unforeseen fluctuations in demand or supply interruptions. Unfortunately, traditional or rather conventional supply chains – including food supply chain systems – are more centralized than ever before, a factor that creates information asymmetry in its deepest form. Centralized systems – a form of operation that sees authority or power, specifically in decision making, concentrated to one particular entity, more so the focal company – unfortunately, create fragmented pockets of information. This demerit eventually creates a barrier to decision-making and overall supply chain visibility. Having information centered on one particular entity, say the food manufacturer or food retailer, creates ‘information blindness’ to all other entities within the chain, an event that eventually creates information asymmetry or consequences such as the bullwhip effect.



But combating data fragmentation requires supply chain-wide coordination, with supply chain visibility (SCV) as the ultimate objective. Acting as the glue that holds supply chain organizations together during a crisis, supply chain collaboration enables the development of synergies among partners, facilitates joint planning, and promotes the real-time

information exchange required to prepare for, respond to, and recover from supply chain disruptions while minimizing their impact. Businesses gain visibility, flexibility, and shorter lead times. For example, for food companies exercising single-sourcing initiatives, increased collaboration and consequent information sharing may act as solid mitigators as they help make risk response processes faster. Chipotle presents an excellent example with the outlet focused on single sourcing and networking among its supply chain entities, an initiative meant to eventually improve food quality for its end consumers.

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