CHECKLIST

Four elements required for successful product innovation

FOOD & BEVERAGE

Many of today's consumers are passionate about the quality and healthfulness of their food, as well as the environmental footprint made by food and beverage manufacturers. To meet these expectations, food and beverage manufacturers must speed product introductions and develop new offerings that reflect the changing views on what is fresh, healthy, sustainable, and mindful. With modern technology in place, companies can seize the chance to speed introductions and offer new product lineups, which will appeal to consumers. This can be the ticket to future growth.

Disruptive product innovation

Product development and product innovation are not the same thing. Food and beverage manufacturers develop successful, new, and improved products all the time. But these are often just iterations of existing products—perhaps with new flavors, ingredients, or packaging to satisfy consumer trends. There's not much innovation in that. The manufacturer that strives to disrupt the market with never-before-seen, unique, or superior products, however, is practicing true product innovation. Not that there's anything wrong with being second to market—many manufacturers successfully follow that very business model. But the risk-takers who are willing to gamble on something that's not tried-and-true and get to market before the competition, are the ones uniquely positioned to see margin advantages, grow business, and build brand loyalty.

Successful product innovation can take you from where you are today to where you could be tomorrow by optimizing and improving your company in the following areas:

1. Improve the likelihood of priority projects being successful

For many organizations, the R&D department is the primary source of innovation and business growth. But R&D can't succeed if it's operating in a silo. All information regarding products and projects must be stored in one place, where multiple functional groups can access the data they need. This can help create a higher level of enterprise-wide visibility with sales, marketing, operations, and quality teams. As a result, product development will take less time and at lower cost, while significantly reducing risks. Along with real-time visibility into performance, status, requirements, and costs, manufacturers can also automate the process of reviewing and analyzing the product portfolio and managing staged projects.

Having visibility into capacity, bottlenecks, and scheduling constraints can also help ensure that production is as efficient as possible. And by collaborating with the purchasing group, R&D can help optimize the purchasing department's ability to negotiate a better price from existing suppliers. When it comes to formula ingredients, this collaboration can help create a better understanding of which ingredients have the potential to lower costs and which can help you avoid buying very similar and therefore redundant raw materials that are already being utilized in existing products.

Most companies also have multiple projects going on within their R&D departments. These can include initiatives such as cost optimizing formulas, streamlining new production processes, extending shelf-life, and evaluating alternative ingredient suppliers. In addition, many companies may have multiple R&D locations. Having visibility across all these projects to make sure you are focused on the highest priority and meeting deadlines can be overwhelming if you are operating in silos.

2. Regulatory compliance for labels and ingredients

Of all the challenges in managing the product lifecycle of food and beverage products, labeling can be one of the most complex yet critical to success. Food and beverage manufacturers must consistently deliver compliant, clear, and compelling labels—despite changes in regulations and consumer tastes; the challenge of sourcing ingredients globally in order to satisfy the demand for diverse, high-quality products; and increasing competition.

Implementing global recipes can prevent the use of unapproved ingredients in your products. This doesn't mean, though, that the recipes are precisely the same from country to country, it means that you have global control over the recipes. Certain additives and ingredients that are permitted in one country, might not be allowed in others. Additionally, label and health claims that are valid for one country, could be forbidden in others. For example, claims such as "low fat," "high fiber," or "helps lower cholesterol" can be subject to country and regional laws. Non-compliant or misleading labeling is not optional, it incurs enormous risk and can cost your company millions of dollars in the event of a recall. Additionally, consumers, advocacy groups, and even competitors can be eager to **litigate**, and your packaging and labeling are often the focal point of these contests.

To be able to more easily control raw materials and formulations, you need instant, electronic access to accurate upstream and downstream records of all raw materials, production data, and deliveries.

3. Cost optimization

Margin pressure is nothing new to food and beverage manufacturers. Unexpected changes in seasonal supply or pricing can wreak havoc on your bottom line. But these new factors, including customers who expect faster response times with near flawless order fill rates or trying to manage an overwhelming number of products and SKUs, can tax your capabilities to the limits if you don't have the right infrastructure in place to keep up. Companies that use robust planning and forecasting tools in concert with end-to-end supply chain visibility hold the key to protecting both customer loyalty and profits.

Food and beverage manufacturers can also develop better products faster and more economically if they establish a repeatable optimization process as early as possible in their development cycle. While it may be possible to create an adequate formulation on a spreadsheet one time, a spreadsheet doesn't give you the flexibility to fully optimize that formulation or to test out multiple scenarios on multiple variables and compare all those scenarios against each other to find out which one provides the best margin.

4. Information management

Product innovation goes beyond just being a part of whatever the new trend is. It's also about satisfying consumer demand for transparency when it comes to detailed information about the products—such as health claims, where exactly the ingredients come from, or how environmentally friendly the product might be. While putting easy-to-understand and comprehensive information on product labels is important, there's only so much information that can fit.

Food and beverage manufacturers have an opportunity to use other means of sharing this information with consumers, such as mobile-friendly websites and **smart labels**. Of course, having a consumer-friendly method of information sharing is pointless without also being able to provide the specific information consumers want. Manufacturers must be able to collect, curate, and disseminate detailed product information to consumers and regulators—often down to the lot level. If a consumer wants to know "what farm this chicken was raised on," the manufacturer should be able to answer that question. While traceability is traditionally in the purview of food safety, its mechanisms and data can also be a source of consumer-facing information.

TODAY	TOMORROW
Slow new product development time	Complete formulation system to accelerate development time
Manual labeling and formula compliance administration	Automated label declaration created directly from formulas
Duplicate data entry with limited checks and balances	One global dataset for faster decision-making and less errors

Food for thought

Today, food and beverage manufacturing processes are being innovated with the internet of things (IoT), as well as the industrial internet of things (IIoT), manufacturing execution systems (MES), cloud solutions, and other emerging technologies. Of course, no discussion of modern digital technology is complete without including machine learning, artificial intelligence (AI), and predictive analytics. The analytic and predictive power behind these technologies has the ability to impact virtually every corner of food and beverage manufacturing. It can be used to help:

- Further refine formulas
- Continually improve the accuracy of cost projections and other forecasts
- Reduce time to market by helping to optimize the supply chain
- Drive better product development by helping to better understand consumer behavior

And as technology continues to evolve, the opportunities to contribute toward innovation will only grow stronger.

From development to successful delivery

What comes next for the food and beverage industry depends in large part on what trends come and go, how consumer preferences continue to evolve, and how food safety regulations continue to evolve across the globe. Modern manufacturers must be able to nimbly respond to these challenges if they want to continue to innovate. To truly seize opportunities for product innovation, food and beverage manufacturers must work to eliminate IT silos between R&D, planning, manufacturing, sales, and marketing to make sure that all key players across the enterprise have visibility to the same data, business systems, and processes. Through collaboration and visibility into options and constraints tied to supply, demand, production, and regulations, manufacturers have the means to accelerate time to market and ensure they're making operational decisions that maximize profitability.

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