

# Picking Up the Pace in Flavor

How the tempo of new innovation and shorter product lifecycles is changing the flavorist's job.

**“T**he food flavors market is projected to grow at a CAGR of 5.3% from 2013 to 2018,” notes a Markets & Markets report ([www.marketsandmarkets.com](http://www.marketsandmarkets.com)).

This growth is driven by natural flavors, as well as expansion in Asia-Pacific.

Meanwhile, the industry's customers in the food and beverage world are addressing increasing pressures. As product lifecycle management consultancy Technia ([www.technia.com](http://www.technia.com)) notes, food and beverage companies are facing:

- Diminishing brand loyalty
- Increasing government regulations
- Shorter product lifecycles
- Falling price margins

As a result, the demands they make on their suppliers are having similar effects, changing the way flavor creation is done.

## Rapid Turnaround

For many quick turnaround customer requests, if a flavor is not already in your team's library it's already too late for next-day service, says Robert Pan, consulting flavorist.

“You have to have that flavor in your library to be ready for that,” he explains.

To develop a proactive approach, flavorists may pair with research chefs in order to develop new flavor profiles that customers and consumers will be looking for.<sup>a</sup> This gives flavor teams a faster turnaround time and thus more breathing room to shepherd a project to success with the applications group.

“When I work with a chef on, for example, a tomatillo flavor, we ask, what type of tomatillo flavor we're looking for,” says Pan. “It can be fresh, boiled, roasted—all these different profiles. Usually the chef will give me direction and create a gold standard for me to create a flavor profile. A flavorist and a chef need a common language. As an example, the tomatillo needs an additional green note. So, the question is ‘leafy green,’ ‘fruity green’ or ‘vegetable green’? Different oils or aromatics determine that nuance. When we're finished, we have that flavor in the library for when the customer comes in.”

In creating this anticipatory flavor “wish list,” Pan says it is worthwhile to approach customers and ask what flavors they're



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looking for but have not found. “That gives me the idea of what I should be working on,” he says. “If a food scientist says they don't have it in the library, then that's what I create.”

“Product developers are working under tight deadlines, so we have to be responsive to their needs and work at a much quicker pace than in the past,” says Agneta Weisz, global vice president, research and technology, Comax Flavors. “The staff in our laboratories is impacted a lot by shorter and shorter timelines for projects.”

To facilitate quick responses to customers, suppliers must responsibly manage realistic expectations, says Norma Schwarz, senior flavor chemist/director at Flavor Dynamics, Inc. As turnaround times ramp up, she says, “Everyone wants it yesterday.”

Not only do customers want fast responses, they present increasingly complex technical specifications. They may want unique flavor blends or formulations with delayed release. In addition, the customer's base may present its own problems. The expense of servicing more and more complex projects is driving up prices for flavor companies and putting pressure on margins.

Trial orders for these diverse projects also cause issues. As customers and formulators become increasingly cost-conscious, raw material sourcing is getting more difficult. For instance, if a formulator must order a specific ingredient to fulfill a project, they may have trouble justifying the cost of a supplier's minimum order quantities. Such minimum orders create new risks. If the flavor companies orders an ingredient for a specific trial order and then that trial project does not move forward, the flavor

<sup>a</sup>Read more about the role of research chefs in R&D in “From Idea to Execution: A Recipe for Food Product Innovation” on Page 24 of the March 2014 issue of P&F; [www.perfumerflavorist.com/magazine/pastissues/](http://www.perfumerflavorist.com/magazine/pastissues/).



company is on the hook for that expense. This makes assessing potential new business rather more complicated.

At the same time, says Weisz, “Our customers bring products to the market faster, and new product lifetime is shorter. Innovation has to keep coming to meet these demands.”

Turnaround times on projects are tight, even at the sample level. Next-day turnaround might be requested by sales teams, leaving little wiggle room in schedules. Even when the client likes a product, samples may need to be resubmitted under similarly truncated timelines.

With the increasing number of seasonal and short-lifecycle products, flavor teams are working on more projects than ever. This requires the efforts of the flavorists, applications and regulatory staff, and production. The issue is that whether it’s a small or large order, the same amount of innovation and application effort is needed. As a result, margins have come under pressure. Some sales will not add up to significant volumes.

“I’ve been in the business quite a while,” says Weisz. “I remember times when [flavorists] used to spend months making the perfect strawberry. That just doesn’t happen anymore because it has to be a very particular strawberry at a particular price, natural, kosher, halal, E.U.-compliant, non-flammable, and it has to be done in a very short timeframe. It’s a different business.”

Cost reductions, meanwhile, present other challenges, says Schwarz. If the cost is cut too much, flavor creation teams are not left with much to work with. She notes that flavor chemists work hard to meet targets while formulating well-rounded flavors, but no one can control fluctuations in ingredients costs. For instance, she says, crops go bad and certain essential oil prices could rise as a result. “When you have a crucial ingredient spike and you have to redo price for the customer, it’s a problem,” Schwarz says.

Customers are then left to decide whether to reformulate or accept an increased price. “Flavor creation is an art,” Schwarz concludes. “It is like a painting in progress. Why settle for a print when you can have a masterpiece?”

## Flavor Specificity

“Today’s consumer travels more, has a more global taste and tries a lot of different cuisines,” says Pan. “You see that in restaurants or with street vendors. That is the type of flavor you will have to create for your library because a food company will try to develop that profile sooner or later.”

The question, he says, is how to localize that flavor profile.

Pan continues, “The industry is looking for more variety and detailed flavors. They don’t want just a ‘tomato’ flavor anymore. They want more detail—like a fresh, vine-ripe tomato. They want a juicy tomato or cooked paste tomato or even blackened cherry tomato. They want to give it a different type of character.”

He adds, “Ten years ago, customers wanted a mushroom flavor. Now they want porcini or morel or grilled portobello or dried shiitake. They have a very specific character they’re looking for. If that kind of thing isn’t already in your library when a project comes in, it’s too late. You need more time to create that kind of flavor profile.” If the team has worked ahead, says Pan, it’s very easy to twist the flavor to meet the needs of the customer’s delivery system and turn around a project in time with a higher degree of quality.

## The Health & Wellness Factor

"Today, consumers are moving to healthier foods," says Pan. "They not only want healthier—they want it to taste good. If it doesn't taste good, they won't buy it."

This is a particular challenge as plant proteins are used in increasing amounts in products, creating technical and taste challenges for formulators. However, vegetarian options are getting better and better, says Pan.

At the same time, formulators seek to cut sugar, salt and fat in products without sacrificing flavor or mouthfeel.

Meanwhile, the general health and wellness category is marked as much by what's in products as what's not. Excluding certain solvents or eschewing genetically modified organisms will create supply and creation complications.

"We're all looking for innovation," says Weisz. "The place I see innovation is in making healthier food products. The biggest problem we're facing is the obesity epidemic. Everybody wants to cut sugar and fat. We are working on better stevia masking flavors and fat flavors that mimic the taste of different fats like butter or lard. Everybody is looking for the magic bullet salt replacer. And nobody wants to use MSG, but they want its enhancing properties. People are still looking for better, more unique flavors, but everyone wants products that help make healthier foods."

## Changing Customer Requests

"Sustainability is going to be a huge issue," says Terry Miesle, senior flavorist at Innova Flavors. "Customers are already asking about our plans to address our own energy and water use in our plants."

These queries are becoming sufficiently detailed, says Miesle, that customers now want to know where ingredients are actually grown and whether pesticides or GMOs are involved.

"Now, everything is much more scrutinized," he explains. "Companies are starting to manage that a lot more, manage how their crops are grown and how their suppliers' crops are grown. In the end, I think it's going to be a cost savings, generally, just like green chemistry is less expensive than the old methods. If a company really manages how their supplies are grown on the pesticide and land use level, how other processes are handled—the whole supply chain—I think it's going to save them a lot of money." Customers' traceability needs are continuously increasing, says Miesle. "It's only a matter of time before it steps down to our [flavorist] level," he explains.

At the same time, he says, while natural flavor requests are nothing new, he is beginning to see increasing amounts of customer requirements for U.S. Department of Agriculture (USDA) natural flavors ([www.ewhow.com/facts\\_7394359\\_usda-natural-standards.html](http://www.ewhow.com/facts_7394359_usda-natural-standards.html)).

"That's very restrictive," he says. "USDA-natural is a minimally-processed standard. We can't use the highly refined ingredients common to reaction flavor development, and have to look for ingredients more akin to what you'd have access to in the kitchen. It's not a big piece of business now, but it's growing and I think it will become significant as the market matures."

"We can't make flavors the way we used to and still be a USDA-natural product," says Miesle. "It's an interesting area for us to be in because it requires us to innovate." He adds, "Vegetarian products are big, which are a lot of fun and new for us to work on. When you take a chicken flavor and make a vegetarian version it takes some time and it's not going to be [exactly] the same. We've worked ahead on the vegetarian projects. We try to adapt our catalogue to fit other categories. So some of the work is already done. You can adapt your work that way."

While regulatory requirements are nothing new, compliance with labels such as the Non-GMO Project is. Meeting such guidelines creates a restricted list of potential ingredients and processes. "It's great to have a standard to work against, as long as that standard doesn't shift too frequently," says Miesle.

Flavor companies must also explain to multinational customers precisely where a flavor is or is not compliant with local regulations. When a product is rolled out globally, such questions are crucial—especially if a customer hasn't previously experienced this process or hasn't considered the various factors affecting regulatory compliance. As a result, flavor companies' regulatory departments are growing.

"Once you start moving to BRC (British Retail Consortium) standards, you have to have a much more complete supply chain for all the ingredients," says Miesle. "You need to know where everything comes from, where it's processed."

Miesle explains that these challenges are being addressed even as the overall sophistication of flavors and food products rises. "The quality of a lot of these foods—side dishes, frozen meals, etc.—has really increased in terms of variety and what you get for your money," he says.

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