

# Creating Winning Flavors for Savory Snacks

Creating top flavors in snacks is a complex journey, where authenticity and finding an emotional connection with consumers are core priorities.

by Carlos Barroso

I usually introduce myself as a chemical engineer by training who works in the food business by choice. On the one hand, I love science and technology, but I also love food and admire chefs who elevate cooking to an art form. Bringing science to the art of making great flavors has been my passion since I started my career in the coffee business back when Procter & Gamble (P&G) still owned the Folgers company.

In this article, I share some of the stories from my journey to marry science with art and create winning snack flavors – flavors that led to hundreds of millions of dollars in incremental sales and to products which delighted consumers around the world.

## Chefs and Culinary Experts

After P&G started selling their food businesses in the 1990s, it was clear that if I were to continue to pursue my passion for food, it was going

to be with a food company. In 1996, I joined PepsiCo Foods as their VP of R&D for Latin America based in Dallas, Texas.

PepsiCo had an active and growing business in Latin America. However, the flavor versions of many of our snack products weren't sticking as we would have hoped. I partnered with my marketing counterpart, and we commissioned several of the major flavor houses to present and recommend how we could improve our track record with flavors. We hypothesized that we needed trendy flavors to win over the Latin American consumers. The flavor houses did a great job of sharing cool and trendy flavors with us. But something was missing. We didn't see a clear connection to the consumer or the culinary inspiration we were looking for. My boss Rogelio Rebolledo suggested I hire a chef to help us with our flavors. At that point, I wasn't ready to hire a chef, but he had the right idea.

We turned to CCD Innovation, a development house in San Francisco, to get help from its vast network of chefs and culinary experts including many with Latin American roots. Again, I was convinced that the key to success was developing trendy flavors. Maybe a Thai theme or Italian? We convened a cross-functional meeting and had several of the chefs present ideas for flavor development. I shared my hypothesis with each of them. After the meeting, each of them commented how excited they were to participate, and while they respected my hypothesis that we needed trendy flavors, they all said that what they really thought was an opportunity was to bring back authentic flavors that were indigenous to their respective countries. After the fifth or sixth chef told me the same story with passion, I had to concede my hypothesis was wrong. The critical learning from the sessions with the chefs was that we needed to create authentic, recognizable flavors that would resonate with consumers, which was the epiphany that started an incredible flavor journey.

## How to Get Authentic Flavors?

Now we had a clear goal for the R&D team and our flavor house partners to develop authentic flavors. But how? We created our own MasterChef initiative. I enlisted the help of Eapen George, one of our talented R&D Directors with an unmatched passion for creating winning flavors. With our network of chefs, we started by making traditional dishes

from various countries. We had Brazilian chefs make feijoada, a classic Brazilian stew, and Chilean chefs make chimichurri. Mexican chefs made dozens of dishes from different parts of the country, and Dominican chefs made plantain dishes with aioli. The goal was to create “gold standard” culinary targets to guide our flavor development.

We used flavor curves to “fingerprint” the culinary dishes by describing not just the flavor notes but the time-intensity curves over the 30 seconds or so that it takes to taste the dish. Just as musical notes create a melody, flavor notes create a taste profile that is not just a mix of flavors but rather a series of flavors displayed over time with the more volatile notes hitting the palate first, and other flavors like some of the spicier notes finishing the profile. Interestingly, the use of flavor curves was pioneered in the 1950s, but for whatever reason seemed to fall out of favor with spider graphs being the more common way to communicate flavor profiles. The problem is that a spider graph is static and cannot convey how the flavor display over time.

## Delivering Authentic Flavor: Art and Science Work Together

Now that we understood the mission to provide authenticity and had the culinary gold standard identified and the flavor curves developed, we had to deliver the flavor. We worked closely with our flavor houses to get the right flavor molecules. The objective was to mimic the time-intensity profile of the culinary gold standard. We needed ways to get the topical flavors on our chips to display over time. We were able to learn a lot from chewing gum technology. We needed to get flavors to display over a 30-second window. Imagine doing that for over an hour with chewing gum! We accessed the toolbox of suppliers with flavor substrates that released the flavor right away, or after a bit of time. As we learned to leverage these tools, we started getting wins with consumers who experienced an emotional connection to the authentic flavor cues we were able to replicate.

Another issue we had to address was the quality of the base chip we applied the flavor to. We had an opportunity to improve the quality





ty of our chips. We discovered the hard way that even a great flavor cannot compensate for a stale chip whether a potato chip, tortilla chip or extruded curl. Indeed, poor quality contributed to lackluster results for some of our flavor launches. So, in parallel, we launched a strong push on quality. Fortunately, we were able to borrow heavily from our US colleagues who had undergone a quality transformation in the 1990s, as the introduction of Eagle Snacks showed Frito-Lay that they needed to radically improve their quality and regain product superiority.

#### New Ways of Applying the Flavor

As we continued our flavor journey, we saw success not only in Latin America but in Asia and Europe as well. My responsibilities increased from Latin America to International and eventually to all of PepsiCo Foods R&D globally. If they made it and you ate it, I was responsible for the R&D. We continued to look for ways to bring authenticity to our flavors. We started challenging the conventional wisdom of how to flavor snacks. The convention was to plate flavors on to a starch substrate so that flavors could be stored in a dry form and easily transported and then applied as a powder at the seasoning step.

We had a breakthrough in the ear-

ly 2000s with the development of what we called “flavor plus.”

As product developers, our interest was in getting the right flavor molecule to the taste buds at the right time. We were inspired by the way chefs would flavor oil either for cooking or as a way to flavor their dishes. We started using flavored oils as well as conventional powdered seasoning to flavor our chips. The result was a unique way to layer the flavor and come even closer to the culinary gold standard. A great example of this was the application of lime flavor to our Mexican potato chips. The benefit was a lime flavor that was much closer to a freshly squeezed lime.

Furthermore, as some of the more subtle flavors were released in the bag, there was a pleasant, freshly squeezed lime smell when the bag was opened. Indeed, we were able to build on an observation that many consumers smelled the chips in the bag when they opened it. Again, consumers responded with a significant jump in sales for our lime-flavored potato chips.

#### Finding the Emotional Connection

As proud as R&D was for the flavors we were creating, we would never have had the commercial success we did without the partnership of our Marketing colleagues. Food

is a highly emotional product and often with profound connections to childhood memories. When I was the SVP of Global R&D and Quality at Campbell soup, I quickly learned that everyone had a story about how one of our products would bring back strong childhood memories – usually chicken noodle or tomato soup. Indeed, that led to our purpose statement, “Real Food that Matters for Life Moments.” I have been very fortunate throughout my career at P&G, PepsiCo, Campbell Soup and many of my consulting clients to work with many highly talented marketing and consumer insights professionals who understand how to communicate that emotion.

For example, our PepsiCo marketing team in Mexico ran a great campaign for the introduction of our lime-flavored potato chip by showing consumers smelling the bag of chips as they opened them and seeing the delight on their face as they smelled the freshly squeezed aroma of lime. Another example is from Russia. We had a hugely successful wild mushroom flavor launch in Russia. The insight was that families in Russia would often go out on weekends in the fall to pick wild mushrooms. Besides being a culinary adventure, it was also a time for families to enjoy being together. With the help of chefs and flavor houses, we nailed the wild mushroom flavor. Our marketing team put together a beautiful copy showing families picking the wild mushrooms and showing our bag of chips. The result was a very successful launch with almost 100-percent incrementality.

#### Putting it All Together

Recapping our flavor journey to bring art and science to winning flavors:

- Authentic flavors: Create the culinary gold standard and fingerprint it with flavor curves.
- Quality matters: A great flavor cannot compensate for a poor base product.
- Emotional connection: Food is emotional. Understand consumer insights.
- Flavor delivery: Use the tools and suppliers to deliver authentic flavor cues to the consumer.
- Shelf life: Don't forget that the flavor has to survive throughout the shelf life. We needed to upgrade our packaging film to keep our more del-

icate flavors intact.

Following this methodology took a lot of practice and a talented cross-functional team. But, the results were tremendous and a significant factor in the double-digit growth that PepsiCo Foods International enjoyed during the 1990s and 2000s.

#### Clean Label

With the consumer demand for clean labels, it's not enough to deliver a great flavor; we need to do it with a friendly ingredient list. The demand is an opportunity, not a problem, and gives talented product developers a way to build further layers of protectable advantages by identifying new tools. There are ways to deliver better flavor with clean label ingredients.

#### Winning Flavors

I hate it when I hear a comment that we need to make a product taste good in spite of being healthy. Product developers need to approach health and wellness with the conviction that we will make flavor tastes great because of the healthy wholesome ingredients, not in spite of them. This isn't just words. In the early 2000s, sodium was a concern in the UK, and Walker's brand was a poster child for too much sodium. By chance, we had been improving the flavors in the UK leveraging our MasterChef program.

As a result of improving the flavors, we lowered sodium by 25 percent or more. We didn't need all that salt with better flavors- a real win-win solution and a great example of bringing art and science together to create winning flavors. More recently, while at Campbell Soup, we created a line of very clean label soups under the “Well Yes!” brand. The soups have a very clean label and lower sodium content on average. But the real driver was to create delicious flavors using just real wholesome and high-quality ingredients. The result was to bring in new consumers who were looking for authentic flavors from real ingredients. ▼

Carlos Barroso is President of CJB and Associates and has over 20 years of global research and development expertise in food and consumer packaged goods.